



# APPLETON LABORATORY NEWSLETTER

No. 154

March 1974

## SIR ROBERT WATSON-WATT AND DITTON PARK

### Pt. II

The destruction by fire of the nucleus of the first Radio Research Station paved the way for improvements desired by Watson-Watt. To quote from his autobiography; "Word of honour, it was not a Reichstag fire. I cheerfully admit, however, that the re-equipped Radio Research Station was a far, far, better thing..... we built a headquarters hut in West Park with considerable laboratory bench space..... with clerical office, common library and reading room and individual offices for researchers who came together at least for tea on most days. I planned my own room to have a bay window to whose main surface I presented my back as I sat at my desk".

After various changes during the past forty years this, our present 'Old Building', has reverted to a general appearance not unlike its original. The bay window now exists as a fire exit whilst the former library is now the Sports Club Bar area; outwardly, however little has been altered.

These improved facilities enabled Watson-Watt and his team to intensify their studies and gain increasing skill at applying the latest available techniques to solving problems which arose. The early thirties saw the establishment of an ionospheric observatory, which has now probably the longest series of observations in the world. An expedition from R.R.S. took part in the Second Polar Year in 1932, making ionospheric measurements within the Arctic Circle, and the work on direction finding, particularly in relation to atmospherics, continued apace. It was now possible to obtain cathode ray tubes much superior to those used in the tentative experiments at the end of the first World War, and they found a place in various aspects of radio research.

The outcome of this was the production of a standard technique for atmospheric location, which proved to be of great value in World War Two and is still operated by Meteorological Services here and abroad, and the publication, in 1933 of 'The Cathode Ray Tube in Radio Research', a book describing many of the methods developed at Slough during the previous decade. Papers chiefly concerned with the nature and waveform of atmospherics, marked the scientific output of Watson-Watt during these years, which culminated in his being appointed Superintendent of a newly formed Radio Department of the National Physical Laboratory including the Station at Ditton Park.

At the start of 1935 (when called upon to investigate the, admittedly unlikely, possibility of a radio 'Death Ray') circumstances led Watson-Watt and A.F. Wilkins to demonstrate the practicability of 'radiolocation' as radar was then termed. This part of his career has been well documented elsewhere, suffice it to say that whilst he was well aware of earlier work in the field of radio wave reflections, it was Watson-Watt's capable organisation of research priorities and data-handling from his first primitive radar system which gave this country the lead over other nations. They concentrated too much on refinements of technique, rather than establishing an overall detection system, albeit of a less than perfect type.

Military requirements meant that he and a small team from the Station would henceforth work at a secure site in East Anglia. Thus, at this high point in his life, he became involved, of necessity, in great issues and commitments which virtually ended his direct links with Ditton Park.

In the years that followed he made every effort to advance the idea of radar as a major factor in strategic thinking, becoming, in turn, Director of Communications Development, Air Ministry and later Scientific Adviser on Telecommunications at that Ministry and the Ministry of Aircraft Production. His later years were spent mainly in consultancy work in North America.

Watson-Watt's contributions to Science and State were marked by Fellowship of the Royal Society, the C.B., a Knighthood and the honorary doctorates of several Universities. He was a former President of the Royal Meteorological Society and of the Institute of Navigation, whilst in his days as a scientific Civil Servant he had been Chairman of the I.P.C.S.

His career began about the time the triode valve was making possible the techniques of electronics; by the end of his life, semiconductor methods had made available amplifiers far smaller than a single component of the bulky equipment with which he worked. Whether he did or did not 'invent' radar is, as is so often the case in these matters, a question of definition. He was aware of, and always acknowledged, previous workers' contributions to the field. Like Marconi, he used some facts already known, incorporating them with his own contributions into a system uniquely successful at the time.

If to appreciate, evaluate and consolidate in this way is to beget, then he was indeed the 'father of radar'.

G. W. Gardiner

#### STATION NEWS

##### IUE Project Management Team

It was announced on Monday, 18 March, that the IUE Project Management Team would be moved to the Appleton Laboratory at Ditton Park. The staff concerned have been informed and the move scheduled for 1 May 1974. It is expected that some rearrangement of accommodation for ARD will be necessary with the departure of our colleagues.

(ARD News Sheet)

STAFF NEWS

Congratulations to:

Mrs. J. Nassé	now	C.O.	P/t.
R. Bohlander	"	S.S.O.	

Welcome to:

C.J. Burrows	A.S.O.	
Mrs. M.E. Wilding	C.A.	(Culham)
A. Liput	S.C.S.	
J.C. Lewis	A.S.O.	
M.P.L. Sweatman	A.S.O.	
G.A. Gaston	S/s. Lab.	

Resignations

E.P. Dyer	P.T.O. III
B.Y.M. Moosajee	S.O.
K. Gregory	Gardener II
P.P. Clarke	Driver

Other Changes

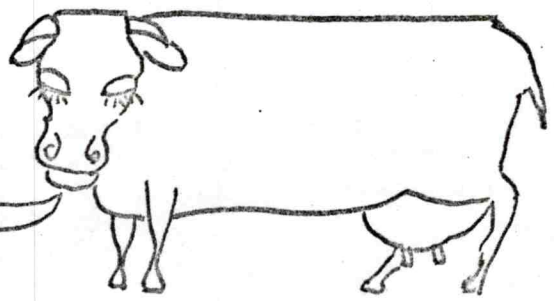
S.K. Bhattacharyya	H.S.O.	Changed from Div.1 Grp 3 to Div.4 Grp 2 (L. Thomas's Grp)
E.B. Jones	P.S.O.)	
B.C. Boland	S.S.O.)	Changed from Grp 3 to Grp 2 in Div.7.(Dr. Gabriel's Grp)
F.F. Freeman	H.S.O.)	
R.A. Ridgeley	H.S.O.	" " " 4 " Grp 2 " " "
M.A. Trower	S.O.	" " Div.1 Grp 3 to Div.6 Grp 6 (Dr. Bramley's Grp)
V.A.W. Harrison	S.S.O.	" " " " Div.1 Grp 1 (under J.E. Foster)
Mrs. H. Lennon	E.O.	Changed from Accounts to Div.1 Winkfield 18.2.74
P. Monk	S.O.	" " Div.7 Grp 3 to Div.1 Grp 2 (P.A. Vaughan's Grp)

SAFETY COMMITTEE NEWS

ANIMAL SENSE



I would never think of crossing the cattle grid by the tennis court but those silly humans do. I wonder why they risk breaking their legs when they have a gate provided for them!



SPORTS AND SOCIAL CLUB NEWS

BRIDGE CLUB

Following the decision of the League's management committee that matches claimed as walkovers should be replayed if possible, we have had two extra matches to fit into the programme. This month's results are:-

5 March	v	Quaker Oats (A)	won	8 - 2
14 March	v	" " (H)	drew	5 - 5
19 March	v	Walls III (A)	won	10 - 0
26 March	v	Walls III (H)	won	10 - 0

Our team was Mike Johnson, Barry Martin, Terry Paterson and myself except in the third match when Dr. Bain played instead of Terry Paterson. The away match against Walls III produced our greatest IMP score of the season, 135 - 29 ( a difference of 50 IMP is required for the maximum league point score of 10 - 0). Our league point total is now 93 and we have only one match to play against the league leaders, Computer Services Centre, who have 100 league points. However, we cannot be certain that a 9 - 1 win in the last match would place us at the top of the table because C.S.C. could change their score by replaying their walkovers.

A. J. Gibson

TABLE TENNIS

The 'B' team has made its exit from the Dilger knock-out cup having been beaten by Eton NALGO "Bees" in the semi-final. In spite of a tremendous effort by John Delury the team lost by 10 points on aggregate. Jack Moore and Phil Muzlish did their best to gain sufficient points to achieve a win but the difference in standard between a leading Div.1. team and an average Div.3 team became painfully obvious. Nevertheless it has proved to be a very interesting competition.

P. Muzlish (Hon. Sec.)

MOTOR CAR CLUB

The Car Club has decided regretfully to suspend the sale of motor oil temporarily. Readers of the CSMA magazine may see the very limited choice of oil offered. For example - no gallon cans and no standard 20w 50 oil. It is hoped that after a short period the price situation will become clearer. In the meantime it may be that supplies can be obtained from an alternative source.

P. Muzlish (Hon. Sec.)

CRICKET

A concrete and matting practice wicket will be prepared shortly. It is hoped that as many people as possible will then join in lunch-time and/or evening net practice.

John Cathrew

REPRINTS AND I.M. THIS MONTH - NIL

PAPER SHORTAGE

The Letter to the Outstations will for the present only appear when space is available.