obituary

Dr A. P. Rowe, the wartime Head of the Telecommunications Research Establishment—the home of radar—died at Malvern in May 1976 at the age of 78.

Albert Percival Rowe trained as a meteorologist and worked in the Air Ministry's Laboratory in Imperial College after the 1914–18 War. From there he became Personal Assistant to H. E. Wimperis, the first Director of Scientific Research at the Air Ministry; and in June 1934—alarmed by the inadequacy of air defence in Britain, as he related in his book *One Story of Radar* (1948)—he warned the Air Ministry that "Unless science evolved some new method of aiding air defence, we were likely to lose the next war if it started within ten years". In the following November, Wimperis proposed the formation of a Committee for the Scientific Survey of Air Defence, which quickly took shape as the famous Tizard Committee.

The story has been told many times of how the principle of radar was outlined by Watson-Watt to the Committee at its first meeting, as a result of a query about death rays put to him by Wimperis, and how the independent approach of F. A. Lindemann and Churchill led to intense friction. Rowe's part in these events was to be the first Secretary of the Tizard Committee, and to decide with Wimperis to buy Bawdsey Manor, just north of Felixstowe, to house the research and development work that would be needed before radar could be made operational. In the spring of 1938 Rowe succeeded Watson-Watt as Superintendent of what was then known as the Air Ministry Research Establishment, Bawdsey, and he remained Superintendent, later Chief Superintendent, of this Establishment and its successors until the end of the war, by which time it was the great Telecommunications Research Establishment at Malvern with a staff of 3,000.

The basic notion of radar came from a Government establishment, the Radio Research Station of the National Physical Laboratory, staffed by men who—with Rowe—had gone into Government service between the wars rather than into universities. Great though the contributions of the latter were subsequently to be, they would mainly have come too late for the Battle of Britain, and it was our national good fortune that there was enough talent in Government service to enable us to prepare for that critical phase. Recruiting from the universities had started in 1935, with men such as E. G. Bowen, R. Hanbury Brown, and A. G. Touch; and it was these recruits who, together with Watson-Watt's original nucleus of L. H. Bainbridge Bell and A. F. Wilkins, did the essential early work. Academic reluctance to work on military projects was dispelled by the Anschluss of 1938, and by the outbreak of war there was a flood of willing — and distinguished — scientific recruits, most of whom went into radar.

Rowe therefore found himself at the head of a great body of talent, from which ideas and inventions flowed throughout the war. Somehow he had to guide his establishment of scientists and engineers, few of them accustomed to Service or Civil Service procedures, into effective relationships both with the Royal Air Force and with industry. Throughout the war he held vigorously the belief that the work his Establishment was doing was vital; and at the end of it he wrote "We believe that without radar Fighter Command and the 'famous few' would have lost the Battle of Britain. We believed that without radar the night attacks by enemy bombers would have devastated our industries. We believed that without radar the work and gallantry of Bomber Command would have been largely wasted; and we believed that without radar the sea-war would have been lost and that there would have been no invasion of Europe". Although by 1948 he had begun to wonder whether this 'overwhelming belief' had been entirely justified, it had been his guiding star throughout the war and he would declare it to his staff and outsiders alike.

He was completely sincere, and it was his sincerity that enabled him to keep control of what could easily have been a very unruly Establishment. Sometimes this same sincerity led him into slightly bizarre situations: on one occasion during the war he sent a circular letter to the wives of his staff telling them that their husbands were doing work of the utmost national importance but that, unlike the serving officers with whom they were working, they were entitled only to ordinary civilian rations. Since there were various deficiencies in wartime food, it was essential that each wife should do her best to supplement her husband's diet, notably in respect of vitamins and vitamin B in particular. This vitamin was to be had in abundance in 'Bemax' and so would she please feed this to her husband every morning. In a similar vein he had issued a station instruction at Bawdsey pointing out that the dispersal of the several research teams in huts hundreds of yards apart inhibited communication and the cross-fertilisation of ideas: he therefore urged all members of the staff to buy second-hand bicycles, and added the address of a cycle dealer in Felixstowe whom he had ascertained to have an adequate supply. But despite the comic effect produced by such instructions, he was obviously so genuine that he kept the respect, which with the years developed into affection, of his staff.

Perhaps his greatest individual contribution was the 'Sunday Soviet' held weekly in his room which, after the move of TRE to Malvern College, was of course the Headmaster's Study. Sundays were convenient for such men as Lord Cherwell, Sir Robert Renwick, and senior serving officers to visit Malvern, and Rowe would gather members of his staff for a free-for-all discussion which would last from morning well into the afternoon. Bernard Lovell, then one of Rowe's men, has recorded that "A Commander-in-Chief once complained in Rowe's office that the most lowly assistant in the Establishment would not turn a screw unless he could be acquainted with the latest strategic situation in the Middle East". The interplay between scientists and serving officers had not been started by Rowe; from their experiences in the 1914–18 War, Lindemann and Tizard, for all their differences, were united in the importance of this interplay, but it reached one of its highest expressions in Rowe's Soviets. These meetings were one of the main factors in the ultimate superiority of British radar over its counterpart in Germany, where scientists and military men were not nearly in such effective contact.

The successes of TRE were many. As regards actual inventiveness, the ideas of course originated with individuals, to whom full credit should be given; and the characteristic problems associated with getting individuals to work in a corporate body are probably less in war than in peace, where the importance and urgency of a common aim are less clear. But, even so, with all the brilliance of individuals and the corporate spirit engendered by national emergency, TRE would have been far

less effective if it had not been so well guided, and this was Rowe's contribution. He would certainly have been blamed had TRE failed, and in its success he deserved a greater honour than the CBE that was awarded to him in 1942. In fact, the whole of the radar effort was miserably recognised during the war: the Americans, who were glad to have a contingent at TRE, gave Rowe a more fitting recognition—the Medal for Merit, their highest civilian decoration, awarded directly by the President.

Writing to me in 1974 of such matters he said "I have never written of those things to anyone till now. I feel strongly about two lines of a prayer, 'To toil and not to seek for rest, To labour and not to seek for any reward'. Certainly I never thought of it during the war, when vast numbers were giving their lives".

After the war, Rowe first became the Deputy Controller of Research and Development at the Admiralty, and then in 1947 went to Australia as Chairman of the Defence Advisory Committee and Defence Scientific Adviser to the Australian Government, and in 1948 he became Vice-Chancellor of the University of Adelaide. This experience was not a happy one, as Rowe himself related in his book *If the Gown Fits* (1960). Clearly he found the university a far less ready body to accept his guidance than TRE had been. He thought that universities should be more down-to-earth than they were in meeting the needs of the average rather than the brightest student; but, almost paradoxically, he concluded "It is necessary to replace fearfulness by courage, departmentalism by unity of purpose, egalitarianism by a measure of authority, and to recognise excellence wherever it rears its noble head". And if Australian universities are now better than they were thirty years ago, part of the change may be due to the unpopular stand that he took.

Rowe had never been afraid of expressing an unpopular view, but he felt the unpopularity all the same, when it led to loneliness as in Australia. It was here that he valued especially the support of his wife, Mary, whom he married in 1932: "Far from family and friends" he wrote in *If the Gown Fits*, "she unfalteringly supported me in my years of unaccustomed loneliness".

He came back to Malvern in 1958 and spent some of his later years teaching astronomy to the boys of the College. But—such is the way that a nation sometimes treats its faithful servants—he found it so difficult to live on his pension that he actually left Malvern again for Malta, where the cost of living was lower. We were glad to see him back again when conditions in Malta proved not to be what he had hoped for. He had the idea of writing a further book, on invention in war, but he found the work too much and handed his papers over to Guy Hartcup, who produced the book as *The Challenge of War* (1970).

When in 1974 the Royal Society organised a Symposium on *The Effects of the Two World Wars on the Development and Organisation of Science in the United Kingdom*, Rowe was unable to attend. The meeting had the atmosphere of a reunion, and it spontaneously sent him a telegram of tribute signed by many of his wartime colleagues headed by the President, Alan Hodgkin, who as a member of TRE himself had made the first flight with airborne centimetric radar in 1941.

His final tribute came on June 18, 1976, when as many of his former colleagues as possible gathered in Malvern Priory for his Memorial Service and to recall his vital contribution as the head of what J. A. Ratcliffe in his Oration fairly described as "one of the most successful research establishments of all time".

R. V. Jones

announcements

Appointments

Dr B. J. Mason as President of the Institute of Physics, and **Dr G. H. Stafford** as Vice-President.

Awards

The Royal Society has given the S. G. Brown Award and Medal to **Frank Mackley**, a Director and Chief Engineer of J. T. Mackley & Co. Ltd, for his work on the development of the Hover Platform.

The John Scott Award for 1976 has been made to **Professor Cyril A. Clarke** and **Drs Vincent J. Freda, John G. Gorman** and **William Pollack** for their work on the prevention of Rhesus Haemolytic Disease.

Meetings

October 29, **Hybrids in Botany, Horticulture and Agriculture,** Leicester (Dr C. A. Stace, Botanical Laboratories, The University, Leicester LE1 7RH, UK).

November 15–18, **Weeds,** Brighton, Sussex (Mr W. F. P. Bishop, Frank Bishop (Conference Planners Ltd), 74 London Road, Croydon CR0 2TB).

November 24, **Whole Body Counting and Scanning,** London (The General Secretary, British Institute of Radiology, 32 Welbeck Street, London W1M 7PG).

December 12–17, **Automated Cytology,** Pensacola, Florida (Paul F. Mullaney, Chairman, Fifth Engineering Foundation Conference on Automated Cytology, PO Box 208, Los Alamos, New Mexico 87544).

April 14–15, 1977, **Easter Meeting of the Society for the Bibliography of Natural History,** London (Meetings Secretary, Mrs J. A. Diment, Palaeontology Library, British Museum (Natural History), Cromwell Road, London SW7 5BD).

April 18–20, 1977, **Stem Cells and Tissue Homeostasis,** Manchester (Dr R. J. Cole, School of Biological Sciences, University of Sussex, Falmer, Brighton BN1 9QG).

May 9–11, 1977, **Biosystematics in Agriculture,** Beltsville, Maryland (Dr James A. Duke, Publicity Committee, BARC Symposium II, Plant Taxonomy Laboratory, Room 117, Building 001, BARC West, USDA, Beltsville, Maryland 20705).

Person to Person

A survey is being initiated into the distribution and types of symbiotic *Chlorella* sp. in Britain. Information is needed on precise locations of natural habitats of green Hydra, *Paramecium bursaria, Stentor,* Sponges and other invertebrates definitely containing *Chlorella.* Please write to D. C. Smith, Department of Botany, The University, Bristol BS8 1UG.

Professor and wife wish to find small, furnished flat in S. Kensington or Belgravia, Dec. 15–30, 1976. Will exchange fully furnished 3-bedroomed house in Georgetown, Washington, D.C., Dec. 14—Jan. 6. Address replies and enquiries to D. N. Robinson, 1237 37th Street, N.W., Washington, D.C. 20007.

There will be no charge for this service. Send items (not more than 60 words) to Martin Goldman at the London office. The section will include exchanges of accommodation, personal announcements and scientific queries. We reserve the right to decline material submitted. No commercial transactions.