

IN MEMORIAM:

Conel Hugh O'Donel Alexander

Both in the Sigint and in the chess world Hugh Alexander held a unique position. He achieved the heights in two separate careers, and still had time and energy left for a greater range of other activities than most of us can muster. Even those with whom he was not closely connected felt his untimely death as "the end of an era."

He was born on April 19th 1909 in the Southern Irish city of Cork, and spent the first 12 years of his life there. His father, C. W. L. Alexander, was Professor of Engineering at Cork, and died at the early age of 40, leaving a wife, two sons—Hugh being the elder—and two daughters. Hugh spent a year or two with some uncles (described as "wild") in Donegal, until the family settled at Solihull near Birmingham. Mrs. Alexander remained there until she died about 10 years ago, and was the driving force behind the founding of a Methodist church in that area. Hugh went to King Edward School, Birmingham, and on to King's College, Cambridge, where he took a first in mathematics and so became a "Wrangler." He stayed on to do a year's post-graduate work, including work in prime number theory. Hardy was Sadlerian Professor of Pure Mathematics at that time, the doyen of English mathematicians, and he said that Hugh could have gone on to a career as a creative mathematician; he also said that he was the only person he knew who was capable of entering such a career and had not done so.

Hugh in fact went to Winchester to teach, where he stayed for six years. In 1934 he married Enid Neate, an Australian some years older than himself whom he had met at Cambridge.

Hugh said of his time at Cambridge that his trouble there had been that he played too much chess. During the time at Winchester he continued to play. He had been a member of the British team since 1931, and played for Britain in the Olympiads at Folkstone in

1933, Warsaw 1935, Stockholm 1937 and Buenos Aires 1939, and was British chess champion in 1938. He became friendly during this period with, amongst many others, John Lewis, the wealthy and melancholy head of that strange retail organisation, the John Lewis Partnership; and in 1938 he left Winchester to join the partnership, in connexion with the chess centre which John Lewis had set up on the top floor of his Oxford Street store.

Of course the war came soon afterwards, and in early 1940 Hugh found himself at Bletchley Park at the so-called Government Code and Cipher School. Starting off in "Hut 6"—the Military and Air Sections—he covered the Norwegian campaign, the Battle of France, and the bombing of Britain in the winter of 1940–41. During that period, shortages of staff and equipment were at one stage so frustrating that Hugh, Gordon Welchman and Stuart Milner-Barry wrote a letter to Churchill; one of them went to London, knocked on the door of No. 10 and delivered the letter by hand to Brig. Harvie-Watt, the Principal Private Secretary. It was recorded that remedial action was taken.

In March 1941 Hugh moved to "Hut 8," the Naval section, where he was second in command to "the Prof" A. M. Turing. He became head of the section in November 1942, when the Prof moved on to research work, which suited him better.

Much of the effort in the early days in Hut 8 had been to get staff, both graduate mathematicians and, far more difficult, Grade III clerks. Joan Murray remembers that when conscription of women came in Hugh shot back to John Lewis' to round up as many female 'partners' as he could preempt. But once the complex exploitation problems had been teased out and set on a current routine basis, Hugh amazed his colleagues at Bletchley by exporting his staff as vigorously as he had

imported them—the more likely you were to help the war effort elsewhere, the sooner you left Hut 8. Hugh himself moved out—effectively towards the end of 1943—and became head of one of the Japanese Naval High-grade sections. This was a less satisfying job than the earlier one, since the primary centres were elsewhere—Washington and Pearl Harbor, and to a lesser extent, Melbourne and Colombo.

As soon as the war ended Hugh returned to John Lewis', to be deputy head of the Research Unit, second to Welchman. But he did not really merge into a job that involved a black jacket and striped trousers, and a year later he was back at GC&CS, now called GCHQ and located at Eastcote, on the NW edge of the London suburban sprawl. He started off in 'R department'—the ancestor of HR, but then a separate division. The original idea, which lapsed, was that he would become the first Director of the Australian centre. He in fact moved to head the Coleridge party, and soon moved again, this time upwards to be head of the Russian crypt branch, H5. In June 1949 Josh Cooper left H to join the Directorate and Hugh replaced him as head of the division, the post he held for the next 21½ years.

The story of these years is the story of H Division, and cannot be attempted, even in outline, here. The problems were both organisational and technical, and in both he contributed decisively. Perhaps on the organisational side the biggest monument is H Division itself—the survival of a large technique-oriented production unit side by side with the J, K, and later V, task-oriented units. The problem is an old one—should specialists be managed by the professional organisation or by the organisation to whom they supply their services? The answer is by both: they should answer professionally to the former (i.e., H) and operationally to the latter (i.e., J or K). This theme was worked out in several different ways. Sometimes H men sat in J or K areas, sometimes vice versa; sometimes the arrangements were more complex. But in all cases both professional and operational requirements were met. The system which he developed worked harmoniously in his time and has survived his departure.

On the technical side Hugh put in more individual work than any head of division has a right to; but his most important contribution was by encouragement and suggestion, by clear-cut views which simplified the problem, by going around sections, looking over people's shoulders, asking questions, having ideas; and more than anything else by sheer infectious enthusiasm. Although Hugh was always vastly pleased when one of his suggestions worked, he claimed no proprietary interests, and the actual technical papers that carry his name during this period are few. All are readable.¹ His roots were in the manual and semi-manual cryptanalysis

of pre-general-purpose-computer days, but he was on the look-out for totally new methods of reading enciphered messages. Two of the most important new kinds of cryptanalysis, now practised both at GCHQ and NSA, began, not with Hugh, but because Hugh pushed them. In general, Hugh was not mechanically minded. He regarded even driving a car as technically beyond his reach, and never learnt to program. But he understood clearly enough what computers can do for cryptanalysis, and was the loudest propagandist at GCHQ for huge increases in our computer power.

On the chess side Hugh played for Britain until 1958, won the British championship again in 1956, and was non-playing captain of the British team 1964–72. Had he chosen to take the game up professionally there seems to be little doubt that he would have been of grandmaster class, and possibly have gone even further. At Hastings in 1938 he tied with Keres and came ahead of Fine and Flohr, and in 1953 tied with Bronstein after beating him in a game of over 100 moves; in his time he also beat Botvinnik (in the famous 1946 Anglo-Soviet radio match), Gligoric, Pachman and Szabo. It is certainly significant that in spite of all this he chose to live at Eastcote and Cheltenham and do Sigint. Recently he went in more for correspondence chess, and was doing well in several games in the world team finals when he died—a bit of unfinished business which would have annoyed him a lot. Before he retired he was writing regularly about chess, particularly for his column in the *Sunday Times*, and had already written various books:

Chess. 1937. (A beginner's guide.)

Alekhine's Best Games of Chess. Vol. III. 1946.

Learn Chess: A New Way For All. (With T. J. Beach.) Two vols. 1963.

After retirement he hesitantly declined an invitation to work at IDA(CRD), and the books began to pour out:

Spassky and Fischer; The World Chess Championship, 1972.

A Book of Chess. 1973 (get it, even if you don't play the game).

The Penguin Book of Chess Positions. 1973. (Well worth 30p, and according to the reviewer, would have been the year's best chess book at any price.)

Alexander on Chess. 1974. (a revision of the 1937 book).

¹ See "The Factor Method" (*Naval Cryptanalytic Studies* Vol. I pages 12–64. A child's, and adult's, guide to scoring the evidence), "A New Hagelin Statistical Method" (1946–7) and "Type J Call-sign Keys" (HR/Tech. A/262 dated 11.9.68).

Unfinished was a history of British chess since 1900. He said he had earned more per year by writing over these two years than he had in his last year of regular employment.

That is an outline of the life—and it does not mention the subsidiary outlets, like stamps, and bridge, and croquet. But the outline does not explain the wide range of his influence, or why his loss has been felt so deeply. The Memorial Service was held at St. Luke's Cheltenham on March 15th, and his lifelong friend Stuart Milner-Barry gave the address. Milner-Barry's opening words perhaps summed it up as well as any words will. They were to the effect that he had known Hugh since they were at school, and had seen him the weekend before the end, and that Hugh had not changed during this period. He had retained an almost boyish zest throughout life—was always totally absorbed in what he was telling you or, more often than not, in what you were telling him.

The end came on Friday February 15th. He was 64, and is survived by his widow, two sons and three grandchildren. There was a two-column notice in the *Times* by Harry Golombek on the following day. A few days later there was a further notice by Stuart Milner-Barry. Your present writer can do no better than to conclude by quoting from this moving tribute:

"After his retirement he intended to devote himself to writing about chess, but he had only just embarked on the Fischer Spassky book when he became desperately ill. Perhaps only Hugh himself thought that he could recover, but through the skill of his doctors and

fortified by the sympathy and devotion of his friends (which greatly astonished him, for he had little idea of the affection and admiration which he inspired) he not only did so, but from his sick room completed against time the whole of this brilliant work—a remarkable example of the tenacity, resourcefulness and sheer stamina which made him so formidable an opponent, especially in unfavourable positions.

"For a further 18 months he enjoyed great happiness and contentment at his new home in Cheltenham. He wrote two more splendid books, and was well on the way with a third; and he made at gruelling cost a major personal contribution to the organisation of the European Team Tournament at Bath in July. When a short while ago he was again stricken down, his illness was mercifully brief. He continued working to the end, he maintained as always the liveliest interest in the doings of his family and friends, and he never realised that this was a game that even he could not save.

"One could have wished for nothing else but that vivid and vigorous presence, that quick, clear and energetic mind, the passion for intellectual argument, the practical kindness and spontaneous understanding with the young—all this will be sadly missed. To have been so close a friend for 50 years is indeed good fortune."

—Hugh Denham

Mr. Denham is a senior official at GCHQ.