In Memoriam

In Memoriam: Thomas Ralph Erskine CB (1933 – 2021)

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Ralph Erskine, esteemed lawyer, independent scholar, historian and author.

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Ralph passed away in his sleep on Friday 9 April 2021 at the age of 87. Only days before he was in contact with his friends, busy writing up some of his research for yet another publication and reviewing articles of his colleagues. The news of his untimely death therefore came as great shock to us all.

Ralph was born in Belfast in Northern Ireland on 14 October 1933. His parents were Robert Todd Erskine, a Belfast businessman, and Mary Edith Erskine, née Motherwell. He was one of four children: Robert Alan, who died in early childhood, Ann, who passed away in 2020, and Ruth. In 1941, at the age of eight, he started at Portora Royal School, a boarding school in Enniskillen 130 km west of Belfast, which has educated many well-known Irishmen among them Samuel Becket and Oscar Wilde. Boarding school must have been a challenging experience for a boy of that age, especially when being rather shy. In September 1947 he left for Campbell College in Belfast, a grammar school for boys now open to both day and boarding students. In 1947 it was primarily a boarding school and Ralph was lodged in Yate's house.

In his teens he contracted tuberculosis a disease not so uncommon in those days. This resulted in Ralph spending a year and a half in hospital, something that must have been a harrowing experience at such a young age. He later expressed that he considered himself lucky because many in his hospital ward did not survive. However, the illness had its impact on his life. Many things, such as running to catch the bus, he was not able to do; it was not until his late twenties that such physical exercise again became possible.

Ralph had a keen intellect, and he did well in school. In July 1949 he left Campbell College to enter Queen's University in Belfast to study law. He graduated with a law degree, LLB, in 1955 with a result that placed him first across the entire United Kingdom for that year. On 1 July 1957 Ralph was admitted to Gray's Inn in London as a student member. He had approached the Inn in April 1957, enquiring about a possible admission while he was a Trainee Parliamentary Draftsman at the Northern Ireland Parliament.

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Figure 1. Thomas Ralph Erskine, Photo © 2021 Paul Erskine

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Ralph was called to the Bar on 6 February 1962. He had already passed Part II of the Bar Finals in May 1960, but his call was delayed due to the difficulties of attending the Inn to meet the dining requirements while being based in Northern Ireland. From that moment on he had no further contact with the Inn. Ralph never practiced as a barrister; he spent his entire professional life as a civil servant of the Northern Ireland Office.

His position was that of a Legislative Draftsman. From there he advanced to the top legal position, First Legislative Counsel, which he attained in 1979.

As First Legislative Counsel Ralph was leading the Office of the Legislative Counsel, a specialist office responsible for the drafting of all legislation for the Northern Ireland Office and working in close collaboration with the Parliamentary Counsel in Whitehall. He dedicated his life to the good people of Northern Ireland, working tirelessly to make Northern Ireland a better place for all. A major part of his career involved the crafting of the legislation for the 1985 Anglo-Irish Agreement, the treaty between the United Kingdom and the Republic of Ireland that helped bring an end to the sectarian violence that had taken so many lives. As recognition for his contributions towards this agreement the Queen awarded him with the order of the Companion of the Bath in 1986.

However, his tireless work also resulted in him being noticed by the Provisional Irish Republican Army and in 1989 he narrowly escaped a plot on his life. One evening, an elite unit of the Royal Ulster Constabulary (RUC) arrived to inform him and the family of a deadly plot on his life; an IRA member had been spotted conducting reconnaissance of their home. The family was then escorted by armed police to a safe house. They never returned to their home at 25 Hawthornden Road, where they had lived for a great many years. For seven years the family lived in a safe house in Comber, 16 km east of Belfast, under the name Palmer, the maiden name of the wife. First in 1996 were they again able to openly share phone number and postal address with their family and friends. During their years under cover their official mail address was the mail office at Stormont, the Northern Ireland Parliament, and very few people knew their phone number. Talking with Ralph on the phone in those days was a breath-taking affair in the true sense of the word. Ralph was talking very rapidly to keep the conversation brief and to avoid the call being traced. He usually cut it short when it ran to more than a minute or so, but sometimes to redial a few minutes later to put in another 30 seconds.

Ralph had a formidable intellect as a lawyer but wore his learning lightly and he was particularly kind to junior counsel in the office, sharing his wisdom freely. He genuinely cared for the people working for him. He made sure that every young lawyer joining the office was instructed on the usefulness of a pension and many who have retired now are grateful to him for that. He corresponded with many other legislative counsel across the Commonwealth and was particularly close to some of the drafters in Hong Kong. Ralph retired as First Legislative Counsel for Northern Ireland in October 1993, however he continued part-time employment with the Office of the Legislative Counsel for a several more years to help the office with the transition. His main reason for taking early retirement was to create multiple promotion opportunities for the younger staff, an act which clearly shows his selflessness and willingness to help others.

Few of us knew Ralph the lawyer, it was foremost the historian and the tireless researcher that we all remember. For those of us who knew him well his extraordinary memory and attention to detail was something that never ceased to surprise us. Over more than 35 years Ralph amassed an enormous collection of archive material, a large number of copies, transcripts, and notes. Due to the temporary lodgings the family occupied during the period they lived in hiding, it was not always easy to maintain a well indexed and easily accessible collection. During one period a major part of his collection was in a tiny loft space, but even under such conditions Ralph was usually in full control. Though he sometimes would complain about not immediately finding what he knew was there.

His excellent memory and legal training must have played an important part in allowing him to keep hundreds of tiny details clear in his mind while he was writing up his research. His attention to detail also became apparent when he reviewed and corrected the work of his friends and colleagues. Having your work reviewed by Ralph frequently meant it would sail through any editorial process without a hitch. Many historians, authors and researchers have acknowledged the help and support they have received from Ralph over the years, including leading historians and authors such as Max Hastings and Robert Harris. In his book The Secret War, Max Hastings expresses real gratitude: 'My obligation is immense to Ralph Erskine, a fount of information about every aspect of wartime codebreaking, which is both a maze and a minefield for the uninitiated. He corrected a host of mistakes in my original draft, some of them shocking, and provided me with many source references and pointers; my text is immeasurably improved by his attentions.' Ralph authored one book with Michael Smith, but like an experienced midwife he eased the delivery of a great many others.

All who got to know Ralph valued his immense knowledge about SIGINT history, especially his encyclopaedic knowledge of the Battle of the Atlantic. Ralph not only knew and understood the intricate use of Naval Enigma to control the German U-boat packs, but he also identified, through his detailed studies of their communication networks, the system's strengths and weaknesses. Through his studies of high frequency direction finding (HF/DF) he has also given us a much better understanding of the advantages but also the limitations of allied shipborne direction finding in the fight against the German U-boats. His research and publications have made complex cryptological techniques and advanced communication systems understandable to both experts and non-experts and he has made the entry into this very technical field much easier for new students and researchers.

However, it is not only Ralph the scholar but also Ralph the person that probably impressed us so much. His generosity, politeness and modesty, friendliness and helpfulness were unique. His willingness to share his research, help others with their questions and offer his guidance was typical of him. Ralph was also a person who imbued complete trust and over the years I learned to trust him with my most personal

information. Even in his first letter to me he showed that he was a man of strong moral fibre saying: "By profession, I'm a lawyer. I mention that only to reassure you that I will not publish, or pass on to anyone, any information from you without express permission. If I manage to publish, any help will, of course, be acknowledged. I am very happy to reciprocate, if I can." He lived by this rule, and he expected others to live by the same high standards. If you did, Ralph would share anything with you.

Ralph was a long-time member of the International Intelligence History Association (IIHA) and a member of the Cryptologia Editorial Board. In 2000, he was appointed visiting research scholar by the Bletchley Park Trust, and he was a member of their History Advisory Group (HAG). He was also a member of the small informal study group, Crypto Simulation Group — CSG, that in the late 1990s and early 2000s developed simulations of well-known cipher machines.

Surprisingly enough, his bout with tuberculosis as a teenager did not prevent Ralph from becoming a keen and very competent skier and yachtsman. In the autumn he and the family sometimes would go to Turkey for sailing and windsurfing, a sport he discovered in 1990 during the family's summer break on the southern coast of Ireland. During February or March, he would go to Val D'Isere or other French ski resorts for skiing. After retirement Ralph also developed an interest in sailplanes and with time, he became an experienced solo glider pilot. He was a member of the Ulster Gliding Club where he served as both Chairperson and Secretary. He particularly enjoyed assisting on the open days for new members and he also worked to help disabled people enjoy the sport. Gliding and the gliding community brought him much joy and many friendships.

In his later years he again experienced problems with his lungs and in 2015 he was diagnosed with bronchiectasis. This hit him hard as he no longer was fit to travel and even a trip to The National Archives in Kew, London was impossible. As he said in those days: "The bronchiectasis is a real nuisance, since it leaves me fit for very little." However, he tried to make the best out of it and during the days he felt better he would still work as much as his health allowed him to. Probably what hit him hardest in later years was his wife's illness. Joan, his wife for more than 50 years of marriage, became seriously ill. They married on 30 April 1966, and they would have celebrated 55 years of marriage only weeks after Ralph passed away. As Joan became progressively worse Ralph cared for her as best he could even while he himself was battling with his disabilities due to the bronchiectasis. Those who know the family well say that Ralph was an exceptionally caring husband and father.

Ralph is survived by his wife Joan and their two children, Diane and Paul.

Frode Weierud, Crypto Cellar Research.

Remembering Ralph

I am sorry to hear this news. Ralph was very nice to me and I had tremendous respect for his scholarly work, as did many others. GCHQ historian Tony Comer once wrote to me saying, "If Ralph can't point you at anything in The National Archives, then nobody can!"

Craig Bauer, Editor-in-Chief, Cryptologia.

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I am greatly saddened to hear about Ralph's death.

I intended today to email him because yesterday through a contact at the International Spy Museum I received information about a document that Ralph sent me probably seven years ago.

Although I never met Ralph face-to-face, we have been in regular email communication since 2007, I think. He had contacted me about an article that I had published about Bletchley Park.

Since that time, although we never wrote any joint paper, he was always in the background of my work – nudging me in particular directions, correcting my errors, commenting on my writing, etc. He read and commented on every article I wrote – prior to submission. He willingly shared his vast knowledge about the UK's cryptologic history and his remarkably complete collection of cryptologic history documents.

Around 2014 Ralph introduced me by email to Edward Simpson, who directed Bletchley Park's work on JN-25, the cipher that seems to have developed into the focus of my work. Over many years Edward tutored me in Bletchley Park's work on JN-25, and that collaboration resulted in a long paper published in 2019. Ralph did not want to be a co-author, but he was deeply involved in the work we did and the paper itself.

I edit book reviews for the journal Cryptologia, and Ralph was usually my source for notices of books being published in the UK that should be reviewed.

Chris Christensen, Review Editor, Cryptologia.

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I am sad to hear about Ralph's passing. He was an avid and early contributor to our journal Cryptologia and a willing referee on materials and items for which we really needed his expertise and energy. I did not know he was a glider, but I can see the

adventurer in him doing so.

Brian Winkel, Founding Editor, Cryptologia.

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Back in 2004, Ralph Erskine generously helped my research in the production of the documentary Dayton Codebreakers. Though I knew of him only by reputation, I was encouraged by mutual friends to inquire through email if he had images we might use. Even though I was a stranger to him he generously shared with me some images such as crib sheets and intercepts that could be used for background and graphics. I was most grateful and counted him a friend.

Debbie (Desch) Anderson, Dayton, Ohio.

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I first got to know Ralph when I was researching and writing my book Battle of Wits, and from the very first of what would be many collegial exchanges, and then subsequently a warm friendship, I was aware not only of Ralph's extraordinary knowledge of cryptologic history, but of his equally extraordinary generosity in sharing that hard-won knowledge. It was instantly clear that he was one of those rare and wonderful people whose greatest pleasure was in helping others understand a subject he himself cared about, and in having the facts right for their own sake.

Presuming shamelessly on a new, and entirely virtual acquaintance, I bombarded him with what must have well over a hundred emailed questions by the time I was done with my book. Without fail, I would find waiting for me the next morning a detailed reply, complete with citations to the key sources, lucid explanations of the most obscure technicalities, patient corrections of my blunders, and often scanned copies of archival documents. I jokingly observed in my acknowledgments that Ralph must have felt he wrote the book himself. But it was characteristic of his gentle humor and kindness that he only made one, wry allusion to this. When my barrage of near-daily questions finally came to an end, I think there was probably a pause of a month or two before I next had occasion to email him. His reply to me began, "I missed you!"

It was hard to do Ralph a favor in return, not only because his knowledge of cryptologic history rarely left him unaware of new developments, but even more so because of his natural kindness and self-effacement. I counted it no small triumph the few occasions I was able to send him a copy of a document which I had but he did not. But it was also completely characteristic of Ralph that when I tried to repay his favors I could never have the last word. When I was writing my biography of Justice Oliver Wendell Holmes I asked him if he knew of a researcher in Ireland I could hire to copy some of Holmes's letters in the National Library of Ireland. The next thing I knew Ralph had

done it himself, sending me perfect digital scans of the documents, and when I sent him a book I thought he might enjoy as a small token of my thanks, he professed himself horrified by what I had spent on postage from the US to Northern Ireland and immediately sent me an Amazon gift card to cover the cost!

Ralph did not like personal or professional conflict, but he was a meticulous historian and never hesitated to hold his ground with a quiet and uncombative insistence on the truth and accuracy that more than once showed up the professionals.

I have never known a more careful reader of other people's work. I treasured it as a mark of our friendship and mutual respect that he understood without us ever having to mention it that he could be absolutely honest in his criticisms, and I quickly lost count of the number of embarrassing mistakes he saved me from with his close reading of my book manuscripts—another act of great generosity on his part that I could never properly repay.

I think we met in person only once over the two decades we knew one another. Yet I counted him as a great friend, who was always ready with keen insight, sound advice, and gentle good humor, and who always left one feeling welcomed in the small community of enthusiastic scholars of cryptologic history that he more than anyone had helped to create and sustain.

Stephen Budiansky, author and historian.

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Ralph was always there for me, giving his time and knowledge to help with crypto-history questions. His responses always indicated he was one of those rare and valuable things: a true gentleman.

Colin Burke, historian.

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My main memory of Ralph will always be that apart from being the expert on UK cryptology in the Second World War, he always had time to help and to mentor those whose knowledge and experience was less than his. He got in touch with me when I was appointed and we enjoyed a close relationship – from which I was undoubtedly the main beneficiary. I shall miss his precision – the need to get things exactly right – and his gentle humour, and the world of UK cryptologic history will miss one of its great people."

Tony Comer, GCHQ Departmental Historian 2009–2020.

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Ralph Erskine was described to me before I met him as 'a lawyer in Ireland who has taught himself all about Enigma'. Uttered by one of Bletchley Park's Enigma veterans, that 'all' spoke volumes. Ralph almost certainly knew more than anyone who wasn't there about what happened at Bletchley Park—and more than many who were there, given the institutionalized secrecy.

Ralph was inspirational. Along with his no-fuss attitude and clear, detailed prose went a fierce dedication to absolute accuracy. He enjoyed saying that Harry Hinsley (lead author of the official history British Intelligence in the Second World War) had called him his 'fiercest critic'. If an editor sent Ralph a chapter to review, he or she could be confident of his finding every bug, as well as providing many helpful suggestions for the author. Ralph's comments to the editor were sometimes more querulous—for example, 'It has been a very time-consuming chore. [Name deleted] doesn't seem to have done his homework well.' Not that Ralph was a complaining sort—he was sunny, humorous, direct, engaging.

The Bletchley Park Codebreakers included six wide-ranging and wonderfully thorough pieces by Ralph, as well as large doses of his highly interventional editing. It was described by the founding editor of Cryptologia Louis Kruh as 'Absolutely the best book ever written about codebreaking at Bletchley Park'. But this was just one stitch in Ralph's immense contribution to the field. His reputation came mainly through his numerous authoritative articles, each painstakingly researched and brimming with fascinating detail. He also contributed extensively to other people's projects, often behind the scenes. A shining example is the self-effacing assistance he gave to ex-Bletchleyite Mavis Batey as she wrote her marvellous book about her wartime boss Dilly Knox, Dilly: The Man Who Broke Enigmas.

Ralph Erskine was Britain's foremost historian of Enigma.

Jack Copeland

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We are saddened to learn of Ralph's death. Ralph was a source of inspiration to us during the decade or longer period of correspondence with him while we were researching the archives worldwide, seeking information relevant to the breaking of WW2 Japanese codes. Items published by Ralph led us to contacting him directly, since it was evident that he possessed a great deal of knowledge and understanding regarding the work of Bletchley Park codebreakers. In particular, he had a good command of the technical issues underlying their work and it was this that singled him out among the many who wrote about their activities.

Our book, 'Code Breaking in the Pacific', published by Springer in 2014, recognised the invaluable help we received from him. The Section on acknowledgements opens with the following words:

"First and foremost, Ralph Erskine of Belfast must be thanked for numerous direct contributions in addition to his valuable published material on WW2 communications intelligence and associated topics."

Please accept our condolences. We mourn his passing.

Peter Donovan,

John Mack.

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I was very saddened when I received an email from Paul Erskine with the news of Ralph's passing. Although I never had the privilege of meeting him in person, I'll always remember with gratitude how generous he was with his time and how willing he was to share his knowledge and to give his advice and encouragement.

As an example of this, my first contact with Ralph came as a complete surprise. In 2003, when I was first becoming interested in trying to break Enigma messages, I posted a question to the sci.crypt newsgroup, asking whether anyone there knew if any of the three naval Enigma messages in Ralph's 1995 letter in Cryptologia had been broken. A few days later, I was astonished to receive an email from Ralph himself. I had never expected to hear from him directly. He said that someone had sent him a copy of my post, and went on to say that as far as he knew, the messages had not been broken. He also passed on quite a lot of background information about the messages, and offered to send me another naval Enigma message that he had, along with a crib, for me to try. I was very surprised, and very grateful, that he had taken the time to do this.

In the years since then, Ralph continued to help and encourage my efforts, passing along a wealth of information in the process. He will be greatly missed.

Dan Girard.

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Ralph Erskine was a formidable researcher and writer encompassing many aspects of the history of Western cryptology, including intercept, direction finding, cryptanalysis, reporting of intelligence from cryptologic sources, as well as, the people, places, techniques, and machinery that enabled successes, especially concerning the Battle of the Atlantic, specifically, the Allied ability to counter the Nazi U-boat threat. His

knowledge of the intricate U-boat command and control, communications system of broadcasts and watch nets was of singular importance to scholars of the campaign.

Ralph Erskine was always ready to share the findings of his research, often without recognition of his help. His example, at least for me, inspired me to do the same with people who queried me for help in their cryptologic history projects.

Ralph Erskine also was an important nexus in the network of historians of cryptology that spanned from several countries in Europe and North America. His contacts and willingness to share them facilitated international cooperation.

In one specific case, Mr. Erskine, supplied me with both information and samples of GC&CS work against the commercial message traffic during World War II, which was crucial in understanding how the Allies were able to track Nazi financial and commercial activity with foreign banks, especially those in Switzerland, which was an important section in my publication, Eavesdropping on Hell: Historical Guide to Western Communications Intelligence and the Holocaust, 1939 – 1945.

Robert J Hanyok, retired US Federal Government Historian.

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I had always admired his wonderful book about the Bletchley Park codebreakers and had been inspired by his scholarly papers. Unfortunately, I did not have the opportunity to meet Ralph in person. But when I was missing some key elements for my own research, I simply sent him an email, and without delay, he kindly and generously provided not only with what I was asking for but also with key documents that I was not aware of, as well as some unique insights, allowing me on multiple occasions to make significant progress that would not have been possible without his assistance. I was deeply sorry to learn of his passing away, this is an immense loss to his family, friends, and the research community.

George Lasry, the DECRYPT Project.

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My outstanding memory of Ralph is his unfailing generosity to other researchers, even beginners. When asked for help, he was always willing to share a reference, or a document, or a snippet of relevance if he had it; his memory and indexing system seemed limitless. To see his full legacy, it is necessary to look beyond his own publications and examine the "Acknowledgements" section of almost any article or book that touches on the Anglo-German naval struggle during WWII or any of his other areas of expertise – it is rare to find anyone who has not consulted him and appreciated his help. He was also humble, and generous, in other ways. His

background being in law rather than technology meant that he occasionally asked for help with technical issues; he was nevertheless very quick to grasp the essence of the answers. One instance of his generosity to me stands out in particular – after I had helped him with some explanations and computer simulations, Ralph was absolutely insistent on including me as a co-author of the resulting article, when a simple acknowledgement would have been more than sufficient.

Philip Marks, Independent Researcher.

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In May 1996, a conference hosted by the International Intelligence History Association and dedicated to the theme of Intelligence in the 20th Century was held at Haus Riessen just outside Hamburg. It was attended by no less than 73 participants from Germany, Poland, Australia, Canada, Russia, Israel, USA and Britain including several eminent specialists. There are two things I remember from this conference. One was the fact that it was still far from universal in Europe for professional people to have email addresses , judging from the responses of the attendees; the second thing was that it was there that I first met a quiet but confident man from Belfast who appeared to be a walking encyclopedia of SIGINT history. His name was Ralph Erskine. It turned out that he was one of the carefully selected band of speakers at the symposium. His talk was devoted to Typex, the wartime British Enigma-based cypher machine.

 In the years that followed, Ralph and I continued to correspond. In contrast to certain other scholars, he was open-hearted and generous in sharing any information he had. His judgements were never without substance, always dispassionate and in a dispute about facts, I found that he was seldom wrong. Chief among his virtues was that he had mastered the art of being precise without being pedantic.

I shall miss the input of that man from Belfast.

C.G. McKay, Historian of intelligence.

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My last exchange with Ralph was on the German Foreign Office cipher systems GCC and GEE. It concerned the little information that was available and the search for better sources about the OTP pads and their reconstruction.

He complained then about not finding his own papers and other documents in his large collection due to some temporary disorder. A rare occurrence because Ralph usually had full control.

The other part of our exchange was about nursing homes and the concerns for my father who was in a nursing home due to his dementia. Here Ralph showed his characteristic care for other people and their problems. My father passed away in January 2020, 11 days prior to his 84th birthday. Hopefully both he and Ralph are now in a better world.

Michael van der Meulen.

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I first "met" Ralph on e-mail a few months after I put my TICOM website online when he sent me a very kind and supportive note. I was of course familiar with his name having read his research on Naval Enigma and the Enigma machine. Unfortunately, I never got the chance to meet him face to face, but we corresponded frequently over the years. He would provide me with corrections, related links or articles he thought I might be interested in. I found him to be a true gentleman and scholar who will be missed in our field of cryptologic history.

Randy Rezabek,

Author of TICOM: the Search for Hitler's Codebreakers.

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I never had the chance to meet Ralph in person, which is probably due to the fact that his most active time was before I became involved in the crypto history community. However, I read many of his publications and we exchanged a number of emails. I admired his successes in breaking original Enigma messages and covered them in my publications. Another topic we discussed via email was the Dorabella cryptogram. When I became a member of the program committee of the HistoCrypt conference series, I asked him if he was interested in giving a keynote speech. To my regret, his health problems forced him to reject this offer. It was with great sadness that I heard that Ralph passed away. He will always remain a leading Enigma expert for me.

Klaus Schmeh, member of Cryptologia Editorial Board.

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I was never fortunate enough to meet Ralph in person; but I quickly discovered that if you ever wanted to know anything about cryptology, especially in WWII and the workings of the Enigma, Ralph was the one to ask. I was in awe of him and only started to ask him things very late in my tenure at the museum library and only after he had started asking me questions. He was so generous with his time and was always willing to provide any information he could to further the knowledge of cryptologic history. He

will be sorely missed.

Rene Stein.

Publications

Ralph started to write book reviews. His first were published in Cryptologia (Erskine 1984a; Erskine 1984b; Erskine 1985k; Erskine 1985l; Erskine 1985m; Erskine 1986f) and IEEE Annals of the History of Computing (Erskine 1985b; Erskine 1985f; Erskine 1985j; Erskine 1986a). For the IEEE Annals he also wrote many mini reviews, so-called capsule reviews, (Erskine 1985a; Erskine 1985d; Erskine 1985c; Erskine 1985e; Erskine 1985g; Erskine 1985i; Erskine 1985h; Erskine 1986b). Over the years he also wrote many book reviews for Intelligence and National Security (INS) (Erskine 1986d; Erskine 1999c; Erskine 2015a; Erskine 2015b; Erskine 2016a; Erskine 2016b; Erskine 2020) and the International Journal of Intelligence and CounterIntelligence (IJIC) (Erskine 1990; Erskine 1993; Erskine 1997c). During these early years he also published small notes in Louis Kruh's Cryptologia section "Reviews and Things Cryptologic" (Kruh and Erskine 1985; Kruh and Erskine 1987; Kruh and Erskine 1989; Kruh, Erskine, and Barlow 1988) and letters and correspondence in the IEEE Annals, INS and IJIC (Erskine 1986e; Erskine 1987b; Erskine 1987a; Erskine 1988e; Erskine 1988d; Erskine, Marks, and Weierud 2002).

His first journal article, entitled "Enigma: The Dropping of the Double Encipherment," was written together with Gilbert Block and published in Cryptologia (Bloch and Erskine 1986). Ralph's next Cryptologia article was "From the Archives: GC and CS Mobilizes 'Men of the Professor Type'" one of several "From the Archives" articles that he wrote in the following years (Erskine 1986c; Erskine 1988a; Erskine 1988c; Erskine 1989b; Erskine 2003a).

In 1987 Ralph started a long series of article on the Naval Enigma and on German command and control in the Battle of the Atlantic. The first was the INS article "U-boats, Homing Signals and HFDF" followed by "Naval Enigma: M4 and Its Rotors" published in Cryptologia (Erskine 1987c; Erskine and Weierud 1987). Then followed "Naval Enigma: The breaking of Heimisch and Triton" (Erskine 1988b) and "Naval Enigma: A Missing Link" (Erskine 1989a) published respectively in INS and IJIC. "The Soviets and Naval Enigma: Some Comments" (Erskine 1989c) came in 1989 followed by the Cryptologia articles "The German Naval Grid in World War II" (Erskine 1992) and "Ultra and Some U.S. Navy Carrier Operations" (Erskine 1995).

1996 was another prolific year with the two articles "Naval Enigma: An Astonishing Blunder" and "Kriegsmarine Signal Indicators" (Erskine 1996a; Erskine 1996b). In 1997 Ralph surpassed himself with a total of five journal articles and several contributions in the book *Funkpeilung als alliierte Waffe gegen deutsche U-Boote 1939–1945* (Bauer, Erskine, and Herold 1997; Erskine 1997a; Erskine 1997b; Erskine 1997d; Erskine 1997e; Erskine 1997f).

Ralph's interest in the Battle of the Atlantic and the Allied's battle against the German U-boat threat led to his research into the collaboration between the UK and USA SIGINT agencies. In 1997 he published the article "Churchill and the Start of the Ultra-Magic Deals" (Erskine 1997b) in IJIC followed by "The Holden Agreement on Naval Sigint: The First BRUSA" in INS, "The 1944 Naval BRUSA Agreement and its Aftermath" and finally "What Did the Sinkov Mission Receive From Bletchley Park", both in Cryptologia (Erskine 1999b; Erskine 2006a; Erskine 2000b).

Ralph corresponded with several of the Bletchley Park (BP) codebreakers and got to know several of them rather well. Because of his deep interests in the people working at BP he wrote seven biographies of BP cryptanalysts for the Oxford Dictionary of National Biography. He revised the biographies for Hugh Alexander and Alastair Denniston, and wrote new biographies for Stuart Milner-Barry, Frank Birch, George McVittie, Joan Murray née Clarke, and Oliver Stratchey. He also wrote the biography for the Royal Navy officer Anthony Fasson, who drowned together with Able Seaman Colin Grazier in October 1942 while they were capturing codebooks from the sinking German submarine U-559. In 2003 he wrote the article "Brigadier John Tiltman: One of Britain's Finest Cryptologists" together with Peter Freeman, the GCHQ Historian at that time (Erskine and Freeman 2003).

From 1999 to 2013 Ralph wrote seven article related to the Battle of the Atlantic, Naval Enigma, Admiralty cipher machine policy and HF direction finding (Erskine 1999a; Erskine 2002; Erskine 2004; Erskine 2008b; Erskine 2010; Erskine 2013; Erskine and Marks 2004). Of these, the article "Naval Enigma: Seahorse and Other Kriegsmarine Cipher Blunders" was written together with Philip Marks while "Shore High-Frequency Direction-Finding in the Battle of the Atlantic: An Undervalued Intelligence Asset" shows the diversity of Ralph's research. He was one of the very few historians who have been looking closely at such technical subjects as shore and shipborne HF direction finding (HF/DF). This is a highly technically subject that is not easy to understand for people without a good knowledge of electrical engineering. During his last days he was working on a very technical article on HF/DF with the tentative title "Allied Shipborne High-Frequency Direction-Finding in WWII." We hope to find an interested publisher such that his last article can be published posthumously.

In 2001 Ralph published the book "Action This Day" (Smith and Erskine 2001) together with Michael Smith. The book, which got favourable critics, was reissued in paperback in 2011 under the title "The Bletchley Park Codebreakers: How Ultra Shortened the War and led to the Birth of the Computer" (Erskine and Smith 2011). However, he also contributed chapters for several other books (Bauer, Erskine, and Herold 1997; Erskine 2000a; Erskine 2009a; Erskine, Burke, and Marks 2004; Erskine, Marks, and Weierud 2004). Of these, the afterword "Codebreaking in the Battle of the Atlantic" in the 2000 edition of Patrick Beesly's book "Very Special Intelligence" and the "Foreword to Dilly" in Mavis Batey's book "Dilly: The Man Who Broke Enigmas" are especially

worth mentioning.

During the same period Ralph wrote a few article on subjects ranging from US Bombes to William Friedman's BP diary (Erskine 2006b; Erskine 2007a; Erskine, Marks, and Weierud 2002). In the later years he wrote mainly book reviews. In addition to the reviews previously mentioned he wrote one each for Cryptologia (Erskine 2018) and The Journal of Military History (JMH) (Erskine 2009b) and four reviews for the Journal of Intelligence History (JIH) (Erskine 2003b; Erskine 2007b; Erskine 2008a; Erskine 2019). His last book review was published online in Cryptologia on 11 February 2021 (Erskine 2021).

His bibliography contains a total of 85 entries, but he also published letters and comments in several of the UK national newspapers that are not listed here. Not being an academic Ralph had no institutional support and all his archive research and publications had to be done in his spare time while juggling full time employment as a government lawyer. Seen in the light of this his achievements are nothing less than remarkable.

Acknowledgement

First of all, I should like to thank Philip Marks for his help and support while preparing this obituary. I also want to thank all the contributors for their very helpful assistance. Furthermore, the following people answered my many detailed questions and provided information about Ralph's education and his life in general; only their help made this work possible. Mrs. Leigh Crawford, Campbell College; Ann Andrews, Queen's University, Belfast; Archivist at Gray's Inn, London (indirectly through Paul Erskine); Natalie Pollard and Marcia Dunkley, Taylor & Francis Customer Services. Special thanks go to Michael Smith and Ralph's children, Diane and Paul, their help has been invaluable.

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