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THE ULTRA SECRET:

SECURITY OF

THE BRITISH CODEBREAKING OPERATIONS

IN WORLD WAR II

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Acknowledgements

I must pay a special tribute to Mr Geoffrey Pidgeon and his wife Jane, who agreed to tell me about their war-time experience and answered my numerous questions so kindly. Mr Pidgeon used to work in the construction of wireless sets for Signals Liaison Units and was later sent abroad, particularly to SCU 11/12 in India, to work on the reception and distribution of Ultra. He is therefore very knowledgeable when it comes to the interception of enemy wireless communications and the dissemination of the Ultra traffic to Commanders in the field as well as many other issues. He is the author of the very well-documented *The Secret Wireless War*, among other works.

Special thanks should go to my supervisor, Dr. Sanderson, for her invaluable guidance and advice during all the stages of my work.

Finally, I want to express my love and gratitude to my grandparents, to my father, and to Lionel, for their unwavering help and support.

Contents

"BEDFORD

The king hath note of all that they intend,

By interception which they dream not of."

Henry V, Act II, Scene II, William Shakespeare.

Introduction

In 1974, the publication of a small book, *The Ultra Secret*, by F.W. Winterbotham, prompted a dramatic shift in the collective memory of World War Two when a whole new facet of the conflict was brought into the public eye. The author let out, for the first time, the real impact of intelligence on the war, and more specifically of the interception and breaking of the enemy codes and ciphers by the Allies, in particular of 'Ultra', the 'code-name used in World War II for the product of the decryption of the more important enemy ciphers'[1] (notably machine ciphers). Most of this work was carried out in a mansion called Bletchley Park, near Milton Keynes,[2] and in the surrounding huts.[3] On grounds of secrecy, the place was variedly known as BP, Station X, the Government Code and Cipher School – GC&CS – and GCHQ. A number of scholars, assisted by numerous civilians and servicemen and servicewomen, worked around the clock to solve the riddles that they were faced with. The ability of the Allies to intercept German signals allowed them not only to obtain reports of the state of enemy troops, but also to establish what their intentions were. The extent of the knowledge that the British had of the contents of the Axis signals was quite unprecedented, and is one of the features that make World War II a unique conflict. This vital asset greatly contributed to helping win the war. It was significantly shortened through the reading of the codes of the Axis, by two or three years according to a number of scholars and protagonists of World War II, particularly the famous author Michael Smith.[4]

A great wealth of literature is available regarding the contribution that this intelligence brought to the decision-making among the commanders-in-the-field and the victories, such as in the Battle of the Atlantic, that it brought with it (or at least the *débâcles* that were avoided thanks to it), beginning with *The Ultra Secret*, by F.W.

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[1] Hinsley, F.H. and Stripp, A. (eds), *Code Breakers: The Inside Story of Bletchley Park*, Oxford, Oxford University Press, 1993, p.2 (Introduction by F.H. Hinsley, who was a cryptanalyst and who was entrusted, among others, with the writing of the *Official History of British Intelligence in the Second World War*.)
[2] See appendix 1.
[3] See appendix 2 for a map of Bletchley Park.
[4] Michael Smith is the defence correspondent for the *Daily Telegraph*, and the author of *Station X* as well as the co-editor of *Action This Day*, on Bletchley Park, which he compiled in collaboration with Ralph Erskine. Interviewed in an episode of the BBC4 'What if' series, by Prof. Christopher Andrew, Thursday 24 April 2003, 8.00-8.30pm. Available at http://www.bbc.co.uk/radio4/history/whatif/what_if.shtml.

Winterbotham. These revelations dealt a blow to the historiography of the war up to that date, and this encourages us to reflect on the question of 'hindsight' in history, and the necessary partial account that can only be offered.

The study of such a confidential matter does not come without its innate difficulties. One of the most obvious obstacles is that all the material related to cryptanalysis was classified as 'secret' and a big portion of it was simply destroyed as soon as it no longer was of use, or when the war ended. Imposed restrictions prevented the writing of diaries, or the divulging of any information to un-indoctrinated persons. People were strictly bound to silence. Besides, many of the people involved were so well-trained in security cautions that they simply forgot what had happened. When the initial ban on any reference to Ultra was lifted in the 1970s, memories were more or less blurred, accounting for the inaccuracies than can be found in *The Ultra Secret,* to quote but one example. In addition, the archives related to the question were strictly monitored with regard to what could be released. This makes it all the more difficult to discover what exactly happened.

Given how great a part Ultra played in the war, it is a near-miracle that the German Chiefs of Staff never realized that their top ciphers were being read. On a few occasions they harboured suspicion, especially the commander of the submarines, Doenitz. However, despite several inquiries, German cryptologists never came to the conclusion that their code had been compromised.

Historians make it clear in their work that Ultra was at the core of the British tactics and strategy to the extent that its loss may have spelt the downfall of the Allies. Indeed, should any element have made the Germans suspicious as to the security of their top-ranking signals, they could have changed the coding devices they had recourse to: the mere addition of another wheel in one of the most famous machines, the Enigma, would have put codebreakers in the dark until they found another way of deciphering it again, however long this may have taken. It was possible that they would never be able to read the traffic ever again, thus being deprived of one of their main assets in the conduct of the war. The crucial part of the Ultra traffic in the conduct of the war is described at length by numerous authors: starting with F.W. Winterbotham, Ronald Lewin and the prolific Ralph Bennett, who dealt with the diverse theatres of operations, but also the acclaimed F.H. Hinsley, among many others. The activities of the codebreakers, the handling of German intercepts and the transmission of information to the Commanders in the field is depicted in great details in several works, in particular by people who were involved in the war-time

experience, above all Alan Stripp and Gordon Welchman, but also Doreen Luke and Gwendoline Page. The books by Michael Smith and Marion Hill are also well-documented, to quote but a few examples. Despite these innumerable volumes on intelligence during World War II, the means through which Ultra was kept a secret has scarcely been studied by historians. It is regularly alluded to, for example in *Delusions of Intelligence*, by R.A. Ratcliff, but the broad range of existing measures has not been depicted in detail.

A point must be made concerning the use of the terms 'codes' and 'ciphers'. A code "substitutes a symbol or a word for a word or a phrase",[5] while a cipher "substitutes a symbol or a letter for a letter",[6] as was the case for the Enigma. However, one word is often used in the literature for another, and I will do the same on practical grounds. Ultra is used to refer to the Enigma, but not only,[7] contrary to what Winterbotham almost affirms.[8] Other machines existed, such as the Lorenz, called 'Tunny' at BP, and caused at least as much of a problem to the cryptanalysts. For each machine very different types of model could be found.

The British were not the only ones involved in code cracking. The Poles, the French, and the Americans all took part in the process. The Polish contribution was particularly decisive with regard to the breaking of the Enigma. However, the Polish and French cryptanalysts had to quickly leave their occupied countries, thus impeding further success. The American unit, although it made a remarkable job of breaking Japanese signals, was, at least in the first stages of the European war, hardly involved in the cryptanalytic effort. German, Italian and Japanese codes were deciphered in England, but I chose to focus on the German ciphers, as the balance of power between England and Germany was for a long time particularly unclear, and the final outcome of the war relied highly on the breaking of German codes. On the contrary, Italian troops alone were never much of a threat to the British. In addition I can read German, which proved useful for my research.

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[5] Ratcliff, R.A., *Delusions of Intelligence. Enigma, Ultra, and the End of Secure Ciphers*, New York, Cambridge University Press, 2006, p.237.
[6] *Ibid*, p. 237.
[7] https://www.cia.gov/library/center-for-the-study-of-intelligence/kent-csi/docs/v19i3a05p_0001.htm, review by Louis W. Tordella of *The Ultra Secret*, by F.W. Winterbotham for the CIA Historical Review Program.
[8] Winterbotham, F.W., *The Ultra Secret*, London, Futura Publications, 1975, p 9. The book was first published in 1974 by Weidenfeld & Nicholson.

Though, off the record, attempts had regularly been made to break into the Enigma cipher, the troubled times just before the outset of the war triggered a much more sustained endeavour to try and read German codes. However, one event constituted a real turning point: August 1939 marked the actual beginning of the intelligence war, with the arrival of the first batch of cryptanalysts at Station X.[9] It was deliberately chosen to leave the former office in London, as the city could easily be targeted should the war break out. The head of MI6, Sir Hugh Sinclair, did not succeed in obtaining funds to buy the property at Bletchley, so that he decided to pay for it himself. This move was emblematic of the rising international tension. On September 30th, 1938, the Munich agreement had been conceded to the Germans, acknowledging the German annexation of the Sudetenland in order to preserve peace. But Britain had promised the Poles, that should they be attacked, they would assist them. Nevertheless, on August 31st, 1939, Hitler launched his invasion of Poland. The Nazis rejected the British ultimatum to withdraw from Poland, and on September 3rd, 1939, France and Britain declared war on Germany. Breaking the German ciphers then became a pressing matter, which accounts for the great many people who then flocked to Bletchley, and who gave a whole new scope to the British cryptanalytic activity. Through all the stages of the fighting, codebreaking was considered in the highest spheres and by Churchill particularly as a top priority in the conduct of the conflict – Churchill coincidentally became Prime Minister in 1940, which came shortly after the breaking of the first Enigma decrypts.[10] Through every phase of the battles, the effort for the acquisition of this data was at the forefront, as it could greatly influence the sequence of events. Cryptanalytic activity did not cease with the D-Day landings, but only with Victory in Europe Day on May 8, 1945. The figure of the staff at Bletchley had reached its peak, and such a significant workforce was no longer needed. Most of the personnel from the Services was posted elsewhere in Britain, often while waiting for demobilisation. The rest of the people were sometimes offered work on the main bulk of the effort, which shifted to the Japanese codes, until the Japanese surrender put an end to this. A few people were then tasked with removing all evidence of the activities that had taken place at Bletchley Park.

It is thus essential for us to focus on how the breaking of top-ranking German codes by the British remained a guarded secret between 1939 and 1945.

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[9] Smith, M., *Station X. The Codebreakers of Bletchley Park,* London, Channel 4 Books, 1998, pp.1-2.
[10] Andrew, C., "Bletchley Park in re-War Perspective" in Erskine, R. and Smith, M. (eds), *Action This Day,* London, Bantam Press, 2001, p. 11.

The security of Ultra was at the centre of Churchill's concerns and of those of all the people who were 'in the know'. In war, just about everything is secret. The enemy must be kept in the dark on all possible issues. This was all the more true in the intelligence war: the mere existence of Bletchley Park was kept a secret from everyone, including British officers. Of course the Germans must have imagined that the United Kingdom had a centre for cryptanalysis, but they never established its location, nor did they assess the formidable strength of Station X.

Concerning Bletchley particularly, around ten thousand people were involved in the process of breaking the ciphers, and even if most of them were not aware of the 'bigger picture', we now think that many had a hint of what was taking place. Furthermore, the intelligence that was transmitted to the generals was not confined to their private knowledge: it often had to be acted upon, either in an offensive or in a defensive way, to divert units from dangerous areas, or on the contrary, to find the weak sections of the enemy troops and take advantage of them.

The measures taken were both formal and informal. Many orders were issued as regards the security of Ultra, but not everything boiled down to orders, by far. There was also an innate sense of duty which prevented people from revealing whatever they knew, or from putting Ultra in danger. This was true both inside Bletchley Park and outside, in the War Cabinet Rooms and in the field. Everything was done so that people should remain silent, and in addition, complex scientific devices were relied on for the protection of communications. However, one single individual could compromise this elaborate system through mere careless chit-chat. Of the many factors explaining why this apparently never happened, thorough training and frequent reminders of the dangers that could result from the revelation of Ultra played a huge part in keeping it secret.

Two additional elements can help us grasp how it is possible that Ultra, the intelligence derived from the breaking of the German top ciphers, remained secret during the conflict. We must always keep in mind the fact that England was a nation at war, crippled by the German *Blitz*, and, at least in the first stages of the conflict, it seemed likely to be defeated and invaded. Furthermore, though to a lesser extent, the fact that England was fighting a Nazi regime did play a part in the motivation of the people involved.

There was a need for equilibrium between over-protecting Ultra, and divulging its cracking to the enemy. Abiding by orders was not as simple and straightforward as could be surmised. Too much care could simply prevent any use in the field, or any work at all

on the ciphers. It had to be of use, otherwise the opportunity that it provided, and all the energy that was expended to retrieve it, would simply have been wasted. But compromising Ultra could be fatal to the Allies. The balance found evolved slightly according to the holder of the secret and throughout the war-time years. Safeguarding Ultra almost always ranked first before actually using it. The measures that were implemented could prove to be inconveniences, or even real hindrances, in the intelligence war. This indicates how vital the information provided by means of code breaking was.

However, it is striking that the procedures installed to protect Ultra were not excessively tight. In other instances, much more draconian procedures were created, and interestingly enough, the secret was often less well-kept in these cases. Once again there seems to be a dilemma: rules have to be strict enough, but over-protective behaviour tends to be harmful as well. There is some common ground to all questions regarding the security of sources of intelligence, but we should never lose sight of the particular context of cryptology at war and in this particular context. What was the correct balance in the case of Ultra?

Conflicting positions have been adopted by historians of World War II. Some of them aver that security measures were extremely tight both in Bletchley Park, among officials and in the field. Winterbotham, who played a crucial part in designing the protocols for the transmission of Ultra, seems to endorse this opinion. However, many antithetical accounts of the conflict suggest that efficiency in the codebreaking process often came first, before a strict understanding of the 'need to know' principle. We can not fail to agree with the fact that this concept has a very shifting delineation. Despite all the aforementioned difficulties linked to this subject, it is necessary to have recourse to primary sources, as far as possible, in order to establish to what extent the security enforced by the British surrounding the German Ultra was tight, and how the secret can have remained guarded during World War II.

The most obvious risk to the security of Ultra was of course the great number of people involved in it, and who therefore witnessed the codebreaking process, whatever the scope of their knowledge. The vetting process and training were strongly codified to indoctrinate agents with a sense of the importance of security. The British were very concerned about the alleged disregard of their Allies, for instance their American counterparts, and reluctant to share information with them. No matter how successful the indoctrination of agents could be, further precaution was obviously required, to avoid as

far as possible one single person jeopardizing the entire codebreaking operation: no one was told more than he or she really needed to know to carry out his or her work efficiently, which leaves us to reflect on what was defined as 'necessary'. In addition to these human parameters, World War II witnessed a great improvement in the protection of communications, through teleprinter lines notably, and other guarantees, particularly through the use of other coding devices. The extent of the attention paid to science and technology paved the way for a drastic change in the conception of war. All these measures were aimed at allowing the intelligence derived from Ultra to be used in a secure manner. However, this use constituted a no lesser threat to the security of Enigma. Once more, there was a need for a balance, between the craving for an easy victory, and the long-term ambition of saving Ultra's secret for the rest of the war.

I   Who was 'in the know'? Security training

       To avail themselves of the information that could be derived from German signals, the Allies needed a competent and numerous cryptanalytic staff, and the story of Ultra was not limited to a few commanders and officials. Yet people who were Ultra-indoctrinated, whatever the extent of their knowledge, constituted a security risk. This was especially the case regarding the very place where German messages were decrypted – namely, Bletchley Park, but the hazard boiled down to the same questions, regardless of the place taken into consideration. The figures of the staff at Station X cannot fail to surprise when considering that no serious leak ever occurred. Barbara Abernethy, who worked in the Naval Section, recounts that when war broke out, "there weren't more than a hundred people in what we called the first wave".[11] To be more accurate, it seems that there were just over one hundred people working at GC&CS when it was moved to Bletchley Park in August 1939,[12] and not all of them were engaged in German ciphers. This figure rose dramatically to 3,293 by the end of 1942, including 1,727 civilians,[13] who were sometimes deemed less trustworthy. At the end of the war, around ten thousand people were employed at Station X,[14] to the exclusion of the agents working in intercepting stations. A careful selection and screening of the people who were recruited, as well as their strict security training, were of the essence, and not exclusively at BP. Furthermore, the cryptanalysis of German signals was not confined to Great Britain, and cooperation with the Allies was primordial in this respect. The question read as follows: who among the 'friends' could be trusted and should be made aware of the huge breaks made at Bletchley Park, to what extent should they be let in the know, and what should be the terms of this exchange. The context of the German occupation of Europe made collaboration with Poland and France particularly sensitive, but relations with the USA and the USSR were none the easier.

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[11] Smith, M., *op. cit.*, p 2.
[12] Jackson, J. (ed.) Birch, F., *The Official History of British Sigint 1914-1945*, Milton Keynes, Military Press, 2004, Vol. 1 page facing p. 67.
[13] Young, I., *Enigma Variations. Love, War and Bletchley Park*, Edinburgh, Mainstream, 2000, p.76.
[14] Erskine, R. and Smith, M. (eds), *op. cit.*, p.1.

A. Precautions surrounding the recruitment of staff

Selection through the 'old-boy' network and family connections

Any situation involving the keeping of a secret brings about the following question: who can be relied on? The case of Ultra did not deviate from the rule. Nonetheless, to be able to crack Germany's most secure ciphers, a great many workers were required. The staff of ninety that constituted GC&CS[15] before the war broke out was ridiculously small compared to the needs brought about by the declaration of war and the first breaks into enemy codes. Recruiting more people was imperative; choosing the right people was a huge responsibility – one traitor may compromise the entire operation. The solution brought to this issue at Bletchley Park – which constituted the main bulk of the recruitments – may seem quite idiosyncratic from a continental point of view, namely: relying on the 'old-boy' network. This had taken place in many other circumstances, but hardly ever to such a scale. This process was not confined to men but also included women.[16] Selecting personal acquaintances proved a very efficient way of making sure that the secret would be safe. As Derek Taunt, a former worker in the Control Room of Hut 8, puts it:

> [it] is far the best way of getting together a group of people who are utterly trustworthy, and who trust the person who gets them together, who know their talents and confidentiality and so on.[17]

This method accounts for the frequent recruitment of relatives, and also for the singular number of students, alumni, and teachers from Oxbridge. This is exemplified by the following words by Stephen Freer, who refers to his interviewers: "I'd first got in touch with them through a friend of a friend of mine".[18] The first series of enlistments was carried out by Denniston himself, and it involved mathematicians who had been "earmarked",[19] in Christopher Andrew's own words, as early as 1938, through academic relationships principally. Similarly Stuart Milner-Barry was recruited by Gordon Welchman, who knew him from Cambridge.[20] Later on, Milner-Barry himself was in charge of the enrolment of further employees. He recruited undergraduates, many of them

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[15] As evoked in the introduction this codename, Government Code and Cipher School, was a covername for the British codebreaking operations.
[16] Erskine, R. and Smith, M. (eds), *op.cit*, p. 81.
[17] Accounts gathered at Bletchley Park, *Other people's Stories*, vol. 4, 2002. Notes issued to all Other Rank and ATS posted to the Bletchley Park War Site-signed by Captain GS Seabrooke, May 25, 1942.
[18] *Ibid.*, vol. 3, 2001.
[19] Erskine, R. and Smith, M. (eds), *op. cit.,* pp. 8-9.
[20] Hinsley, F.H., and Stripp, A., *op. cit.,* p 89.

from Oxbridge. Dons were often tasked with ear-marking promising students, so much so that at Bedford College "there were a couple of professors who were actually given the nod to handpick students and sent them off".[21] When this source began to dry up, a very unusual option consisted in recruiting winners of competitions, such as crossword or chess contests.[22] This was all the more true at the beginning of the war,[23] as later on the demand for more personnel grew to such an extent that this means of selecting potential workers proved insufficient. The turning point seems to be the beginning and the middle of the year 1941, when the shortage of staff could no longer be solved through the recourse to the old-boy network.[24] Subsequently, more "usual channels"[25] – but also less secure ones – were resorted to, as Derek Taunt explains regarding his own recruitment. Oxford and Cambridge continued to provide a huge number of employees, but recruitment was now handled by more classic organizations, especially "the sort of government employment agency" that Taunt refers to, and which was headed by C.P. Snow when it came to brilliant academics. Other workers were now looked for in "secretarial colleges, Post Office, bank[s]" and even "John Lewis shops".[26]

The selection through personal acquaintances also applied to other locations in Britain that were associated with Ultra. One of the men who came to work at Whaddon (a place devoted to the dissemination of Ultra) had previously billeted two people, Bob Chennells and Wilf Lilburn, who claimed to work in a wireless station but actually were senior MI6 agents. Realizing that their host had some knowledge of wireless communications and that he could be trusted, they arranged for him to be interviewed in Broadway, Westminster, and he was then posted to Whaddon. While he was working there, he showed to his colleagues model battleships created by his son, Geoffrey Pidgeon. A Lieutenant-Commander, Percy Cooper, saw them and thought they showed mechanical skills, which led to him to recruit the sixteen-year-old boy.[27]

Of course, further guarantees were needed when it came to the security of Ultra, and thus regardless of the mode of recruitment, even in the case of the selection through the old-boy network. All potential employees had to undergo a series of vetting before being recruited.

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[21] Accounts gathered at Bletchley Park, *Other people's stories*, vol. 5, 2002.
[22] Hill, M., *Bletchley Park People: Churchill's Geese That Never Cackled*, Stroud, Sutton, 2004, p. 14.
[23] Young, I, *op. cit.*, p.73.
[24] Accounts gathered at Bletchley Park, *Other people's Stories*, vol. 4, 2002.
[25] Erskine, R. and Smith, M. (eds), *op. cit.*, p.81.
[26] Hill, M., *op. cit.*, p. 16.
[27] Interview with Geoffrey Pidgeon in Richmond, June 3rd, 2009.

Investigation and screening before recruitment

Hardly any historian has mentioned the complex proceedings resorted to in order to verify the reliability of future recruits. This can be related to the fact that the people who carried out this procedure were aware of the risk that revealing their methods entailed (and the end of the war did not loosen tongues), and that the people being vetted more often than not had no idea that data was collected about them, or how much. The museum at Bletchley Park indicates that the men who operated the Bombes were "gentlemen of either technical background or able to keep a secret". No further detail is given regarding the latter criterion, and it can pique one's curiosity with regard to the men "of technical background", who must have somehow been vetted.

When applying, employees had to fill in a form specifying in particular the names and addresses of their parents and partners, along with their nationalities, where they had studied and their successive positions.[28] Some recruits had to bring proof of their eligibility for the position (often three references). Thus one woman later relates that she

> had to produce three references saying whether I'd be suitable for something that was secret… One of those was a friend of my father, an Admiral. He said, I don't know what your daughter is going to do but is it alright if I saw her bank statement.[29]

In this case, the requirements from Bletchley Park seem to be a good way of finding out who could be relied on for the work, but this depended on who could vouch for the candidates. Guarantors were often former employers, hence people who were less likely to be complacent about the potential recruit than family or close friends. They either had to answer a series of no less than fourteen questions regarding the person and his or her personality, along with whether he or she was up to the job. In other instances, a simple letter of recommendation was asked for, in the following terms:

> How long you have known him and whether you consider him to be discreet and reliable and generally, by character and upbringing, fitted for employment in a department where a large proportion of the work is of a confidential nature.
> I should also be glad to know whether you consider his health to be normal.[30]

In addition to all this, investigations were carried out, by MI5 particularly, to ensure the reliability of newcomers. They confirmed that "nothing [had been] recorded against"

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[28] See appendix 3.
[29] Accounts gathered at Bletchley Park, *Other people's Stories*, vol. 5, 2002.
[30] Letter from R.L. Been, Staff Officer, to Mr. F.W. Moore, dated January 8th, 1943. From The National Archives, Kew (hereafter NA) / HW 64/29.

this person.[31] This was also the case for agents working in SLUs who were in charge of the dissemination of Ultra in the field.

Interviews were another good means of selecting adequate people. An ATS, Marie LeBlond, "was grilled by officers about her life and work".[32] Another common way of making sure that trustworthy persons only were recruited was through their vetting before they joined Bletchley Park, if they were service-men or -women, or even just after their arrival at the Park, before allotting them any assignment. Thus Doreen G. Spencer remembers being in Leighton Buzzard as a WAAF, and describes that period as "an initiation, a preparation, and a trial period for her next move: Bletchley Park".[33] Don Smith describes how his abilities were tested through "sub-assembly work" before being let in on the secret of the Bombes.[34]

Despite these security measures, one can wonder how it is possible that some people should have been able to work at such a crucial centre as Station X. One of the most blatant examples is the presence of German nationals at Bletchley Park, or of very eccentric characters, who often proved excellent cryptanalysts.

The case of foreigners

A particular circumstance requires special attention, namely the question of the presence of foreigners at Bletchley Park or among the acquaintances of any of the employees. We need to keep in mind that the war in Europe had led to many persecutions, as well as to the presence in England of citizens of occupied countries. They raised a security issue, insofar as it was extremely complex to make sure that they were not spies - or that their potential careless talk would not go unheard. There did not seem to be one single position in this regard during the entire war.

Many applications on the part of 'aliens', as they were called, were rejected on the grounds of their origin. Instances abound, such as Alexander Lieven,[35] a Latvian, or the Norwegian Lieutenant Scheie,[36] in spite of their references.[37] Nonetheless these gave rise

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[31] Background check on JC. Brook by MI5 dated March 25th, 1941. In NA / HW 64/29. See appendix 4.
[32] *The Mirror*, August 22, 2001, in the accounts gathered at Bletchley Park, *Other people's Stories*, vol. 4, 2002.
[33] Luke, D., *My Road to Bletchley Park*, Cleobury Mortimer, M and Baldwin M., 2003, p. 26.
[34] Accounts gathered at Bletchley Park, *Other people's Stories*, vol. 3, 2001.
[35] Letter from Nigel de Grey to Colonel J.R. Vernham (MI 8) dated March 13th, 1944. Nigel de Grey had been the head of the research section in Hut 3 and became deptuy director at BP. In NA / HW 64 / 34.
[36] Note dated December 24th, 1943 and signed A.D.(A) to M. Kenworthy. In NA / HW 64 / 34.
[37] Their nationalities were sufficient grounds to make their employment by the Secret Services simply impossible.

to debates among the most prominent characters at BP, as the plentiful correspondence reveals. Earlier, in March 1941, a guideline headed "Relaxation of Nationality Rule Applied to Temporary Civil Servants" made it easier to recruit foreigners, on certain conditions. Quite interestingly, they were under threat of internment exactly like their fellow citizens. Their superiors tried to protect them from this, however they adopted a rather careful stance, asking for more details.[38]

Likewise marriages with 'aliens' were not advisable, as they often inevitably led to being cast out from Station X. Here again there were polemics at Bletchley Park. Some people simply believed that any employee should be vetted again on marrying. Others suggest that only unions with foreigners should lead to such measures.[39] The former indeed warn of the potential dangers of politically involved partners. This is particularly revealing when we think that employees were supposed not to reveal anything concerning the nature of their work to their next-of-kin. It seems that further precautions were also enforced. On 2nd September 1942, the following drastic note was issued:

> The Director wishes to remind all members of the staff, no matter what position or grade they hold, that in future marriage with any foreigner is considered a bar to further employment in G.C.&C.S.
> Each case is open to examination, but the principle remains.
> In general, close and continued association with foreigners, except on duty, will make members of staff concerned liable to transfer to another post.[40]

A marriage to an American (or other Allied nationality) also led to exclusion from Bletchley Park. This is intriguing, given that there were American agents at Bletchley Park. However these people were selected, and warned of the importance of keeping Ultra secret, while the new 'alien' spouses were not necessarily. This accounts for the astonishment of a young lady who did not expect that her marrying an American, whom she did not consider as a 'foreigner', would bar her from staying further at BP.[41]

Any connection with foreigners, however remote, was treated very suspiciously. It was soon forbidden for any officer "having access to official secrets" to keep a servant who was a foreigner, according to a circular dated May 30, 1940.[42] This must have applied to senior civil servants in London in particular. Another less drastic circular prohibited the

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[38] DCSS Order 16/41 dated Dec 2nd, 1941. In NA / HW 64/34.
[39] Notes on "Security: Personnel, Vetting, Breaches, Official Secrets Act". In NA / HW 50/22.
[40] D.D (S.) Serial Order No. 47. In NA / HW 64/34.
[41] Letter to Commander Travis, dated 26 July 1943. In NA / HW 62/8.
During World War II, many people working at Bletchley Park referred to it as "BP". I will do so accordingly.
[42] Memo by the Foreign Office, dated 15 July 1940, in NA / HW 64/34.

employment of only German, Czech and Austrian citizens by War Office workers.[43] For them, all the agents at BP had to state whether they had servants or guests who were non-natives, after an order issued by A. Denniston, the head of Bletchley Park, on June 21st, 1940. In addition, they had to inform Commander Bradshaw should any of their next-of-kin be in contact with 'aliens'. Instructions were issued to that effect on several occasions, but particularly in June 1940. Details had to be provided with regard to the identity of these strangers: in a number of cases, these people had escaped pogroms and Nazism, which reassured British officials regarding their reliability.

The mystery surrounding Bletchley Park during the interviews and until recruits reached the Mansion

Paradoxically, these controls could attract attention to the activities of GC&CS. Quite naturally, the interviews did not take place in Bletchley, but in the universities where the future codebreakers and assistants came from,[44] especially Oxford and Cambridge, or in London. In some cases however the last series of interviews were carried out at Bletchley, after a first selection, as was the case for Don Smith.[45] Logically, even though this could in a way hinder the work of recruiters, nothing was revealed during the interviews on the nature of the work that had to be carried out. This could arouse the inquisitiveness of the interviewees, but they often left with no idea as to what the work consisted of. They generally were only told of the "secret nature" of the work they would have to do and the "fundamental need for its concealment".[46] But there were exceptions to this rule. Thus Marion Hill quotes a former employee who recalls her interview:

> an elderly (…) civilian told me his name was Pratt. He talked in a hectoring way about GCHQ, BP and Station X. All this meant nothing to me. It finally dawned on me that they must be one and the same place.[47]

Even though the agent for Bletchley Park only mentioned the codenames of Bletchley and not the actual name and location of the place, this conduct was risky, as it allowed the person to infer from his words that these terms all referred to one single centralized

[43] Minute sheet dated July 19th, 1940. Unsigned. In NA / HW 64/34.
[44] Accounts gathered at Bletchley Park, *Other people's Stories*, vol. 1.
[45] *Ibid.*
[46] Hill, M., *op. cit.*, p. 19.
[47] *Ibid.,* p. 19.

headquarter, and to suspect how crucial it was to the conduct of the war, and eventually its role.

Recruits were often kept in the dark regarding where they were appointed until very late, so that they could not divulge to their relatives what their work would consist of. Those who needed training before being posted to Bletchley Park were often confounded by all their studying and wondered what it was intended for. Doreen Luke, a former WAAF, voiced her amazement: "what sort of place was going to need girls with all this training?" and adds "no one ever gave us an inkling".[48] One of them was sent to Bletchley Park without even being told that she was in fact sent to the position she had been trained for: "I was told I was coming to BP on a Gas Course - poison gas that is - a subterfuge to retain the secrecy of the work being done at Bletchley".[49] Many testimonies of such adventures have been related by the former workers of Bletchley. Some of them knew the name of the town, but not what they would find there. Thus Irene Young received the following instruction:

> You should attend for duty at Bletchley Park, Bletchley on Monday 21st September. On arrival at Bletchley Station you should telephone from the post office to the station yard to Bletchley 320, extension 309, and ask the Transport Officer for instructions.[50]

She adds "I had never heard of the place". In her book, Irene Young describes the case of Harold Fletcher, who in similar circumstances, yet at an even shorter notice, " reported to an officer in London and was told that he was just in time to catch the 3.06 p.m. train to Bletchley were he would be met by someone".[51] An even more extreme case is depicted in *Bletchley Park People*:

> On arrival at Euston, we had no clue as to our journey, so we enquired from the engine driver where he was going. He replied with a broad grin and informed us that "the Wrens get out at Bletchley.[52]

This is yet another instance when it is hard to establish to what extent secrecy surrounded Bletchley. Indeed, people who had been appointed to Bletchley did not even know where they were heading for when they set off for their final destination. It is difficult to establish whether or not the driver was indoctrinated with warnings about

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[48] Luke, D., *op. cit.*, p 25.
[49] Hill, M., *op. cit.*, p. 23.
[50] Young, I., *op. cit.*, p. 15.
[51] *Ibid.*, p. 93.
[52] Hill, M., *op. cit.*, p. 19.

security. However, there is no doubt that he was aware that Bletchley played a crucial part in the national war effort.

B. Security training of the agents: being aware of the importance of keeping secrets

Legal binding imposed on all who were 'in the know'

Before being told what the position would consist of and being let in on the secret of Ultra, new recruits were formally escorted and made to sign the Official Secrets Act. This compelled them to remain silent with regard to whatever activity they would perform, a legal binding which extended until their death. A note written by one of the people in charge of the security trainings gave details regarding the situation when the employment came to an end:

> Every person on ceasing to be employed at GC&CS must in future sign statement that they understand the terms of the Official Secrets Act continue to apply them after the termination of their employment at GC&CS.[53]

The sanctions they incurred in the case of their breaching of this rule went from being "court-martial[ed]"[54] to jail penalties, or even to being executed, particularly hanged or shot, "for any indiscretion".[55] A former Wren recounts: "we were told in no uncertain terms that this was a very important thing and we would go to the Tower [i.e. be imprisoned] if we breathed a word to anyone".[56] Diana Payne, a Wren operating the Bombes, recalls that "any breach" of the secrecy could result in two years in prison.[57] The women working on these machines had been warned that if they as much as "mentioned" their work, "they would be shot".[58] The warning remained very vivid in their memories.

Apparently no one was shot on grounds of treason, and so the warnings seem to have sufficed. However, there were some sanctions of various importance against suspect or simply thoughtless behaviour. Thus a missive from Station X to the outstation read: "Sergeant S is in the habit of talking foolishly (…) in front of his billeters and others (…). If I might suggest it, a talking to would do him no harm".[59] A man, Lieutenant Skalak, who

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[53] HW 50/22. Notes on "Security: Personnel, Vetting, Breaches, Official Secrets Act".
[54] Hill, M., *op. cit.*, p. 130.
[55] *Ibid.*, p. 130.
[56] Accounts gathered at Bletchley Park, *Other people's Stories*, vol. 3, 2001.
[57] Hinsley, F.H., and Stripp, A., *op. cit.*, p. 133.
[58] Ratcliff, R.A., *op. cit.*, p. 108.
[59] Hill, M., *op. cit.*, p. 130.

was talking dangerously, was to be given "as big a fright as possible".[60] Another instance had a much more serious outcome. An Austrian girl was suspected of being a spy. It had been reported that she had got drunk at a party and had sung the German anthem. She quite simply "disappeared"[61] after that episode; she was probably arrested or removed to another position where she could be closely watched.

These instances of carelessness or even suspicious behaviour were always treated with great precaution. High-ranking soldiers or civilians did not leave these matters unheeded, but coped with the question themselves. In the case of the Lieutenant Skalak, V. Vivian and Nigel de Grey, who had become deputy director of Bletchley, were in close contact with C, the head of the British Secret Service. There was indeed a risk that in handling the issue, they should reveal sensible information to un-indoctrinated personnel.[62] So much so that when people who were not privy to the secret of Bletchley Park were caught "revealing" the nature of the work carried out while they were apparently only guessing or imagining it, it was often thought better to "let sleeping dogs lie".[63]

Nonetheless, we have to keep in mind that many former employees of Bletchley do not recall signing the Official Secrets Act. It is to be wondered whether this is due to the intense brainwashing that made them forget a lot of what took place at BP, or because they did not actually sign the document.

Constant stress put on the importance of keeping the secret

In addition to these punitive measures, a profound sense of the responsibility that they had been confided with was instilled in the workers. Newcomers were lectured extensively, and in the course of their time at BP they were often told of the lives that any inconsequent behaviour could put at stake. The lectures covered the issues of inquisitive parents or friends, as well as matters such as gossip and drunkenness.[64] Irene Young recalls in very vivid terms these indoctrinations:

> Nigel de Grey gave us a lecture on security which was psychologically scarifying. (…) Never, as long as we lived, he said, were we to mention to anyone, not our next-of-kin, not even those in other sections of the station what was the nature of our work.[65]

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[60] Letter from V. Vivian to Nigel de Grey, dated March 22nd, 1943. In HW 62/8.
[61] Hill, M., *op. cit.*, p. 130.
[62] Letter from V. Vivian to Nigel de Grey, dated March 22nd, 1943. In HW 62/8.
[63] *Ibid.*
[64] Notes "Security of Source". Undated. No indication regarding the author of the document. In NA / HW. 50/22
[65] Young, I., *op. cit.* p. 78.

This happened on a regular basis. Numerous instances of this can be found, but the memo to all members of staffs tackling the dangers of "careless talk", dated May 1942, is particularly revealing.[66] Each employee was careful about his own words or acts, as well as those of others. Notwithstanding, very interestingly, legal bindings were not as prominent as could be inferred from the signing of the Official Secrets Act. The vital nature of the work that they were involved in, as well as the dramatic consequences of any leak, were impressed upon the souls of the workers at Station X, and a guarded attitude became second nature. Irene Young reflects on this phenomenon, stating that it was "so oppressive at first that she felt like the Barber in the Greek myth who had to dig a hole in the ground and whisper Midas has asses' ears!" but these precautions soon came to be "so engrained that she lost all temptation to enquire".[67]

However, as in the case of the Official Secrets Act, though many people recall lengthy sermons about the crucial need for secrecy, a few former people from BP are positive that they never underwent such sessions. Thus the following dialogue took place between a former worker at GC&CS and a volunteer from Bletchley Park, long after the end of the war:

> Where you often lectured on the need to be quiet, the need to know?
> Never. When we came in they trusted us. We all came from the same kind of background, it was all done by trust.
> When you left, were you given another lecture then?
> I can't remember, I think it was taken from [in the text] granted, we'd signed the Official Secrets Act and that was it. I don't remember anyone being reprimanded or anyone being sent out. I think everybody was extremely good.[68]

It is not certain that this can be dismissed on the grounds of the time lapse between the events and the account, as this concurs with the narrative of other contemporaries, though significantly this person remembers signing the Official Secrets Act.

In fact, these regulations brought about a number of awkward circumstances. To quote but one example, a couple was working at Station X in different departments. Therefore, they were not allowed to discuss their work. They put forward the influence of the rules: "It's absolutely true that because off the Official Secrets Act we were not allowed to discuss our work with each other, and we never did".[69] When King George IV enquired from one of the women working on the Bombes what her work was, she

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[66] Hill, M. *op. cit.*, p. 129.
[67] Young, I., *op. cit.* p. 78.
[68] Accounts gathered at Bletchley Park, *Other people's Stories*, vol. 1.
[69] Hill, M., *op. cit.*, p.20.

answered "I can't tell you sir".[70] On a parallel note, when Commander Edward Travis, the head of Bletchley[71], was knighted for the role that he played during the war, his wife inquired: "What for?".[72]

However, secrecy was a burden for anyone to carry, and it was difficult for the agents not to be able to tell anything to their families, even to their parents or partners. And this lasted until the middle of the 1970s at the earliest, when successive bans on any reference to the war-time activities related to Ultra were lifted. Their responsibility proved too heavy for certain people; thus many suffered from nightmares. In some extreme cases, people became ill because they could no longer stand the risk that one single mistake may constitute a risk to security.[73] At least one person became mad and had to be sent to an asylum, partly on the grounds of the fear that the danger had aroused in her.[74]

This did not end with the German surrender, by far. BP veterans even compelled themselves to forget. As Doreen Luke beautifully puts it, "[they] had to forget to remember".[75] This accounts for the lacunary memories of most of the people involved in the operations at Bletchley Park. Time alone did not erase so many details from their memories. Long after 1945, a former Wren who was to undergo a very serious operation was afraid that she might reveal secret elements; she brought a friend with her to the operation.[76]

However, again, very contrasting testimonies can be found. A former WAAF teleprinter operator, Mavis Cannon, nee Moore, avows that on visiting Bletchley Park much later:

> Those of us on the teleprinters used to chat to each other when were linked up together, but having heard the talks here today and what they said about people not talking to each other about what they did at work, our chatting now seems all wrong to me now (…).[77]

We can here venture the hypothesis that there were indeed very diverse circumstances, according to the period of the recruitment and the department concerned.

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[70] Ratcliff, R.A., *op. cit.*, p. 109.
[71] He was at first Denniston's deputy, but replaced him in 1942.
[72] *Ibid.*, p.108.
[73] Accounts gathered at Bletchley Park, *Other people's Stories*, vol. 1.
[74] Hill, M., *op. cit.*, p.131.
[75] Luke, D., *op. cit.*, p.3.
[76] Large, C., *Hijacking Enigma. The Insider's Tale*, Chichester, Wiley, 2003, p. 95.
[77] Accounts gathered at Bletchley Park, *Other people's stories*, vol. 4, 2002.

Bletchley locals

Because of the sheer number of employees at the Park, it was impossible for all of them to live at the mansion or in the property itself. There were camps for a part of the servicemen and women, but much of the personnel working in Bletchley Park was billeted in the surroundings of Bletchley Park, with families. However, they could not fail to arouse attention in a town of only 3,000, given that they numbered more than ten thousand people by the end of the war.[78]

Even before the war broke out, when the first codebreakers moved to Bletchley, their presence could not fail to arouse suspicion. They had arrived in the disguise of a "shooting party", but their cover was really thin. They arrived in the wrong season and did not bother to go hunting. One of the members of the team, Barbara Abernethy, now Eachus, recalls "(…) it was a ridiculous cover. Whoever would have believed in a shooting party of which I was a member, all youthful spirits and high heels?".[79] As for Whaddon, it was "made into a military looking post", but its occupiers were "not very military looking".[80]

Billets could be found up to twenty miles from the Mansion, thus involving a great number of families in the war effort, who often had an inkling of what was happening. This scattering caused great amazement among the Americans on their first visit to Bletchley; they suggested that building one single camp would have made more sense.[81] To make things worse, it often happened that workers from BP lived in several successive billets during the war. Diana Payne tells of her billet, in Crawley Grange.[82] She was then transferred to Wavendon, and finally to Stanmore.[83]

The workers of BP could not tell their billeters what their work was about, which occasionally gave rise to tensions. The entire country was involved in the war effort, and the population of the surroundings of Bletchley had in addition to board people whom they assumed were doing next to nothing. Many of the staff at BP shared this same experience: "We could not defend ourselves, having to pretend that our work was of little account".[84]

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[78] Accounts gathered at Bletchley Park, *Other people's Stories*, vol. 5, 2002.
[79] Large, C., *op. cit.*, p.192.
[80] Interview with Jane Pidgeon in Richmond, June 3rd, 2009.
[81] Exhibition in Bletchey Park's museum.
[82] Hinsley, F.H., and Stripp, A., *op. cit.*, p. 133.
[83] *Ibid.,* p. 136.
[84] Young, I., *op. cit.*, p. 87.

In a few cases, lodgers came to complain about the "do-nothings" at Bletchley.[85] All the same, despite the careful behaviour of agents not to reveal what they were really working on, locals could not fail to have suspicions about the activities carried out at Bletchley Park. Many contemporaries assert that the population in the surroundings must have had a hint of what was going on. It was often assumed that it must have been a "government communication base",[86] but "people left it to that. They knew not to ask and anyhow, you realised that letting the cat out of the bag could very easily put at risk someone you know".[87] Ratcliff claims that the inhabitants in the neighbourhood knew even more, and imagined that it had to do with secret intelligence work. But their behaviour is described similarly, that is to say they "held their tongues".[88]

C. Letting the Allies into the secret of Ultra?

We should always keep in mind that Britain was a nation at war that had to safeguard one of its main assets: Ultra. This accounts for the strict screening and vetting of employees, as well as the strict regulations they were subjected to. One single mistake on the part of any of the agents, let alone the presence of a spy, could have indicated to the Germans that their top ciphers were being read, and compromised the entire codebreaking operation.

The exact same issues were raised when it came to sharing this information with the Allies. Its strategic use was absolutely central in the conduct of the war for the British troops, as it was on the other theatres of operations where any of the Allies waged war. But it was essential to make sure the recipients of the intelligence would not betray the existence of Ultra, and so the extent of the information they were given had to be carefully defined.

Suspicion of the French and the Poles

Many common points come to our attention when considering the cryptanalytic co-operation that took place between Britain and France on the one hand, and Britain and Poland on the other hand. The reason for this is quite straightforward: the invasion of Poland contrived the Allies to extract the codebreakers from the occupied territory. They

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[85] *Ibid*, p.87.
[86] Large, C., *op. cit.*, p.192.
[87] *Ibid.*, p.193.
[88] Ratcliff, R.A., *op. cit.*, p.113.

had to flee from their country, and from then onwards they worked alongside the French codebreakers in France.

The Poles were the ones who achieved the first breaks into the Enigma machine, most notably Marian Rejewski and Henryk Zygalski of the *Bureau Szyfrow*, BP's Polish counterpart. They exchanged this cryptologic knowledge with the British (represented by Dilly Knox) and the French at a memorable conference in July 1939 (shortly before they had to leave their country), and other meetings took place in the weeks that followed. Most of all, the Poles gave Gustave Bertrand, a senior French intelligence officer, two Enigmas, one of which he was in charge of handing over to Colonel Stewart Menzies, who was still at the time the Vice-Chief of SIS.[89] Regarding the Poles, some of the British cryptanalysts were rather prone to impart their knowledge to them given the crucial help they had offered in the first place. "Dilly Knox had promised to give them the results of any research based on their findings and was threatening to resign if he was not allowed to keep his word."[90] The French codebreakers were equally eager to break this encryption device in such a tense political context. At the beginning of the conflict, British codebreakers were sent to France as liaison officers, and some French agents were posted to Bletchley under the same label.[91]

But an event was about to undermine these exchanges. Germany invaded France, and the rout was such that an armistice was signed in June 1940. From then on, the co-operation that had existed between Britain and France never reached its pre-armistice levels again. When they joined in the cryptanalytic war effort, the Americans shared the same concern as the British with regard to their Allies. The reasons for this are quite straightforward. As evoked, when the war started, the Polish codebreakers settled in the outskirts of Paris and worked with the French.[92] But after June 1940, the team of cryptanalysts under General Bertrand working in cooperation with Britain had to do this in the utmost secret. Seeing the turn that the events took, Bertrand had the entire team sent to Oran, in Algeria, before bringing it back to France, in Château des Fouzes, close to Montpellier, to the great worry of the British, especially Denniston.[93] They were at all times under threat of being captured and questioned by German troops, and the more they knew, the bigger hazard they constituted to the security of Ultra. The same was true of the

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[89] Smith, M., *op. cit.*, pp. 25-27.
[90] *Ibid.*, p. 43.
[91] *Ibid.*, p. 37.
[92] *Ibid.*, p. 37.
[93] Sebag-Montefiore, H., *Enigma, the Battle for the Code*, London, Weidenfeld & Nicholson, p. 88.

Poles present in France. This fear came true when the unoccupied part of France was invaded in November 1942: some of the Poles did not succeed in escaping, particularly the unit of a prominent codebreaker called Langer, and a Pole called Palluth, in February and March 1943.[94] After the occupation of Vichy France, Bertrand remained in the country and played a prominent role in the Resistance, to the great anxiety of the British. Thanks to an administrative quagmire, the Germans, who were looking for Palluth, never realized that he and prisoner Number 64661, of the concentration camp of Sachsenhausen-Oranienburg, near Berlin, were one and the same person.[95] As for Langer, he was a prisoner at Schloss Eisenberg in the Sudetenland. German authorities had somehow discovered his connection with the Polish cryptanalytical operations, and there was no denying his implication in these activities, but he had to avoid giving away the successes of the Allies at all costs. Later he recalled how he responded:

> I decided that I had to use the following strategy, given that I was dealing with experts, who knew who I was. I mixed truth with lies, and tried to present my lies in such a way that they had the veneer of truth. I then said that since I was dealing with experts, and since Major Ciężki knew more about the subject than I did, it was better that I did not try to go into details in case there was a conflict. That is why I asked the panel to summon Ciężki. They agreed, and Ciężki managed to convince them that the changes made before the war made decryption during the war impossible. I think they believed us, because although they were supposed to see us again, they never came.[96]

No matter the means used by the inquisitors, no one breathed a word about the successes that had been achieved.

The second grounds for the reluctance of the British in sharing their knowledge with the French was that they saw the Free French Forces as "leaky", and with good reason. Thus, in 1943, General Giraud declared in front of a large audience that a secret message from the German Kesselring had come to his attention. This gave rise to an enquiry at BP, the conclusion of which being that if there had indeed been a leak, it did not originate there[97] - luckily this accident could not be definite proof to the Germans that their Enigma had been broken.

To make things worse, the French had unreliable ciphers which were regularly read by the Germans until the 1940 surrender.[98] After that date, France was supposed to give the details of their codes and ciphers to the occupier, but Bertrand did not. As for the ciphers

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[94] *Ibid.*, p. 243 and p. 257.
[95] *Ibid.*, p. 243 and p. 271.
[96] *Ibid.*, p. 274.
[97] Ratcliff, R.A., *op. cit.*, p. 111.
[98] *Ibid.*, p. 111.

of the Free French Forces (they used "B-211" machines), it seemed likely that they were being read by the Germans or Vichy France,[99] and the French had to use American machines.

The cooperation between Britain (and the United States), France and Poland (the Polish cryptanalysts shared the statues of their French colleagues since the outbreak of the war) was a very guarded one. The official agreement (among the secret services, that is) was that a "close technical co-operation between U.S. and French Sigint organisations" while actually, as R.A. Ratcliff underlines: "Bletchley would never pass the French identifiable Ultra".[100]

Bertrand and Denniston argued severely from June to December 1941, on the grounds that the French wanted to be given "the Air Force and Army Enigma settings worked out by the British codebreakers". Denniston wrote the following letter on June 15th, 1941, to one of his subordinates regarding this query by Bertand:

> If he wishes to have the decoded texts of these telegrams we should not consider this on account of the ultimate risk of compromise. We send him the keys and he can decode such material as he has intercepted. It is true we have sent him no keys since the 23rd May and it is obviously objectionable that the current keys should be sent to him. I would suggest replying that we are meeting increased difficulties in obtaining solution for the following reasons (…).

This line of conduct was apparently adopted, which is illustrated by the answer made by Bertand to Denniston's claim in December 1941: "Are you really having no success with Enigma or don't you want to give it to use?... We are working in complete safety here, trust me."[101]

Indeed, this stance on the part of the British was not consistent: it would certainly avoid the presence of a huge number of compromising documents should Chateau de Fouzes be invaded, but there was still enough evidence for the Gestapo to suspect the activities carried out and interrogate the codebreakers, who could compromise the operation by their mere presence in France.

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[99] *Ibid.*, p. 111.
[100] *Ibid.*, p. 111.
[101] Sebag-Montefiore, H., *op. cit.*, p. 183.

An ambiguous stance towards the Russians

In the first stage of the war, the Russians had struck a non-aggression pact with the Nazi leaders to get control over Europe, which contained a secret clause regarding the partition of Poland between the two-countries. Quite naturally, there was no sharing of intelligence with the USSR, for the Allies. Yet after Operation Barbarossa was launched on June 22th, 1941, and the Nazi troops began to march on Russia, an alliance was forged between the former enemies, Britain and the USSR. However, the relation between the British and the Russians always remained a very complex one, so that Whitehall was always very guarded when it came to exchanging knowledge with its former enemy – which was not made easier by the social unrest and political tensions the Soviets had fuelled in Britain before the war.

The first occasion when British officials chose to impart information to the USSR was when they discovered the existence of the plans for Operation Barbarossa, and decided to warn Russia that its current ally would soon turn against it. Churchill weighed at length the pros and the cons of such a revelation, and consulted Menzies, the head of SIS, before taking any measure.

Illustration 1: The head of MI6 from 1939to 1952, Major-General Sir Stewart Graham Menzies[102]

Of course it was impossible for Britain to talk about Ultra to a country that was still an enemy. The extent of the details Stalin was to be given was a crucial issue. The British only told him that according to a very reliable "agent", Russia was to become a target very soon. But Stalin decided not to trust Churchill, as he was "suspicious of [his] motives". In

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[102] Pidgeon, G., *The Secret Wireless War. The Story of MI 6 Communications 1939-1945*, London, UPSO, 2003, p. 9.

Winterbotham's words: "Stalin did not reply".[103] Most importantly, he did not take any preventive action.[104]

As the course of the war unfolded, British officials continuously refused to trust the Russians with their intelligence, as they still remained a "riddle" likely to give away Ultra. However, they needed to pass details resulting from Ultra on to them if they wanted to thwart Nazi Germany. But this intelligence was always presented in a "thorough disguise".[105] Naturally, the text of decrypts was not transmitted to them, but only a digest, and solely the bits dealing specifically with what was of crucial nature to the Russians. As always, the 'need-to-know' was the rule. The British Ambassador in Russia was usually in charge of conveying these messages to Stalin. [106] It is interesting to see that, as of July 1942, because the relationships between Britain and the USRR had taken a turn for the worse, the Allies made less information available to the Russians.[107] And the need to hide this source became all the more true at the end of the war in the context of the wake of the Cold War. Churchill's prime concern was that the USSR should not know of the Ultra Story.[108]

It became evident as war drew to a close that the Russians knew more about Ultra than they had claimed to. Despite the careful selection and screening of employees at Bletchley, at least two spies had been taken in and divulged information to the Russians. They were the KGB agent John Cairncross, who worked in Hut 3 on Air intelligence, and Kim Philby, a respected member of the British intelligence community. As a matter of fact, they were not Russians but partisans of the Russian regime. Their identity remained secret for a very long time; yet GCHQ must have quickly discovered that there had been leaks of the successes of Bletchley to the Russians: at the end of the war the Soviets captured Enigma machines, which they started to use. GCHQ immediately sought to break these ciphers. But they did not succeed in doing so, because the Russians had known of Ultra and had therefore made the ciphering machine more complex, and in the precise ways that made them impossible for GCHQ to break: which lead Roy Jenkins[109] to state the

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[103] Winterbotham, F.W., *op. cit.*, p. 94.
[104] Churchill's Museum.
[105] Ratcliff, R.A., *op.cit.*, p. 112.
[106] Lewin, R., *Ultra Goes to War*, London, Hutchinson, 1978, p. 192.
[107] Mulligan, T.P., "Spies, Ciphers and 'Zitadelle': Intelligence and the Battle of Kursk 1943", *Journal of Contemporary History*, Vol. 22, No. 2, 1987, Sage Publications, p. 241.
[108] Butters, L., *Bletchley Park. Home of Station X* , Andover, Pitkin Unichrome, 2000, p. 113.
[109] He was a codebreaker and later became Chancellor of the Exchequer.

following: "The Russians knew pretty well what we were doing at Bletchley."[110] It was very fortunate for the British that the only spies that revealed the Ultra secret to foreign organizations were Allies. But on a few instances, the Russians, who had no such strict regulations as the British when using this intelligence, almost gave away Churchill's "most secret source".[111]

Difficult agreements with the Americans

The collaboration between Britain and the United States was clearly the most developed type of cooperation – but it did not go without concern on the part of Whitehall regarding the ability of the Americans to safeguard the secret of Ultra.

The alliance dated back to as early as December 1940, which is one year *before* the attack on Pearl Harbour, when the first agreement was reached between the two countries, establishing that cryptanalytic intelligence would be communicated to the other part. In this and all future negotiations between the two countries, the discussion regarding the exchange of knowledge was in no way confined to German encryption devices, but also included Japanese and Italian codes and ciphers.[112] A good instance of this collaboration is that Eisenhower, who was in charge of the Torch landings in North Africa starting in November 1942, was given on a regular basis titbits of information coming from Bletchley.[113] However, in February 1941, the Americans offered a Japanese 'Purple' encrypting machine to the officials of GC&CQ, but were given almost nothing in return.[114] The reason for this is that, as a rule, officials at Bletchley were rather reluctant to impart knowledge on their American counterparts whom they were not sure could be trusted with respect to the security of Ultra.

The cooperation did not always run smoothly. At the beginning of 1942, the Americans complained that they were no longer given sufficient naval information by Bletchley. Furthermore, American intelligence officers had been sent over from the United States to gather information in Bletchley, but they had been given nothing except for

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[110] Smith, M., *op. cit.*, p. 205.

[111] Ratcliff, R.A., *op. cit.*, p. 120.

[112] http://cipherweb.open.ac.uk/cgi-bin/cipher-demo/mobile/sms_categories_xml.py?phoneno=555&id=185&concepts=(JOHN-TILTMAN)&heading=Activities%20of%20John%20Tiltman%20(15). Accessed June 8th, 2009.

[113] Ambrose, S.E., "Eisenhower and the Intelligence Community", *Journal of Contemporary History*, Vol. 16, No. 1, The Second World War, Part 1, Jan. 1981, p. 154.

[114] Smith, B.F., *The Ultra-Magic Deals and the Most Secret Relationship*, 1949-1946, Novato, Presidio Press, 1993, p. 56.

lapidary explanations when they expressly asked questions. They had no choice but to threaten to try and break Enigma by themselves, to the dismay of the British.[115] In April 1942, Colonel John Tiltman, a senior codebreaker who was to play a prominent part in the cooperation between the two countries, found a solution to the issue: he convinced the Americans to leave the British an exclusivity when it came to the Enigma, on one condition, as explained in the following note that he sent to Commander Edward Travis who had replaced Denniston as the head of Bletchley:

> …b. In view of the fact that they are now at war and have a vital interest in submarine traffic, they are entitled to results or a detailed statement as to why this traffic cannot be read at present and what are the prospects for the future. c. Unless a rapid and satisfactory solution is found to (b), the high command will insist on their Naval cryptanalysts attempting to duplicate our work on "E".[116]

The overall reluctance to cooperate accounts for the cold reception that Edward Travis received on visiting the American Navy intelligence, OP-20-G, in September 1942.[117] However, a deal was sealed, named the 'Travis-Wenger agreement', on October 1st, 1942, which revolved essential around the U-Boat traffic in the context of the battle of the Atlantic. The terms were as follows:

> The British agree in principle to full collaboration upon the German submarine and naval cryptanalysis problems, including exchange of intercepted traffic, keys, menus, cribs, and such other pertinent technical information as may be necessary.[118]

It is worth noting that Travis had obtained that his fears regarding potential careless behaviour on the part of the Americans be taken into consideration, as the latter part of the agreement illustrates:

> The primary concern of the British over U.S. entry into the German field is the question of security. The British treat German material on a far higher plane than any other which they handle. (…) Before going into the work, the U.S. must be prepared to accept their standards of security and do everything within its power to ensure compliance therewith. Not only will the safety of the British empire be at stake but, as U.S. efforts in the European theatre become more active, the future of the U.S. may also be at stake.[119]

This statement was invaluable, mostly because it paved the way for the BRUSA agreement of 1943.

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[115] Sebag-Montefiore, H., *op. cit.*, p. 215.
[116] *Ibid.*, pp. 215-216.
[117] http://cipherweb.open.ac.uk/cgi-bin/cipher-demo/mobile/sms_categories_xml.py?phoneno=555&id=290&concepts=(JOHN-TILTMAN)&heading=Activities%20of%20John%20Tiltman%20(15) Accessed June 8th, 2009.
[118] http://www.mariner.org/atlantic/travis_wenger.pdf. Accessed June 8th, 2009.
[119]*Ibid.*

In the first half of 1943, Travis confessed that GCHQ had to build a machine (one of the successive models of the 'Bombe') in order to be able to break the traffic of the U-Boats again, and claimed that it would not be long before this happened. He still did not tell the Americans all the details about Enigma. The Americans decided that they could not wait any longer and, despite the objections of Edward Hastings, who represented GC&CS in Washington, they started to try and build their own 'Bombes'.[120] In May 1943, the BRUSA agreement was reached: it constituted a landmark in the cooperation between Britain and the United States.[121] It "provided for complete interchange between the UK and the US of all information concerning signal intelligence" - generally speaking, the British would focus on German and Italian codes, while the Americans would aim at cracking Japanese messages. One of the clauses consisted in dispatching liaison officers to Bletchley, where they could choose what information they wanted to forward to G2, the Deputy Chief of Staff of the Intelligence Service.[122] Other "liaison officers" were sent to mediate intelligence to commanders in the field, called Special Security Officers or Representatives and make sure the secret remained safeguarded.[123] A number of Americans, including officers, were commissioned to BP in 1943, in Huts 3 and 6, among others. Despite a slight reluctance on the part of the agents who already worked there and feared that the Americans would betray the secret, employees from the two countries mixed rather well.[124]

Eventually the matter was settled and the British and the Americans succeeded in exchanging information more freely, with the odd conflict. However, the British were slightly wary of the lack of security of the Americans, and wanted them to abide by the strict British regulations when it came to Ultra. One of the most reliable ways of doing so was to send future recipients alongside indoctrinated British agents, so that they should learn how to protect this source thanks to the 'sitting with Nellie' method.[125] A blatant example of this was that the American intelligence officers in charge of transmitting Ultra to the commanders during the planned landings in Normandy were sent to the

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[120] Sebag-Montefiore, H., *op. cit.*, pp. 215-216.
[121] Butters, L., *op. cit.*, p. 11.
[122] Jackson, J., *The Secret War of Hut 3, the First Full Story of How Intelligence from Enigma Signals Decoded at Bletchley Park Was Used During World War Two*, Milton Keynes, Military Press, 2002, p. 104.
[123] Powell, L. F., with an introduction and an essay by D.T. Putney, *ULTRA and the Army Air Forces in World War II*, Washington, Office of Air Force History, 1987.
pp. XII-XIII.
[124] Hinsley, FH and Stripp, A. (eds), *op. cit.*, pp. 71-73.
[125] It consists in sitting next to a more experienced member of staff to observe him or her and learn the required skills – and the importance of security.

Mediterranean commands at the end of 1943 and beginning of 1944.[126] The Americans seem to have generally complied with the British regulations, which were stricter, but they also obtained the rules to be made more lax when they were too stifling.

The success of this alliance was such that, after World War II came to a close, on September 12th, 1945, President Harry Truman wrote a memorandum evoking the "profitable collaboration" between the two countries and hoping for its existence to endure "in view of the disturbed conditions of the world and the necessity of keeping informed of the technical developments and possible hostile intentions of foreign armies".[127] This was achieved during the UKUSA agreement of 1947 between the UK, Canada, Australia, and New Zealand, in the context of the looming Cold War.[128] The cooperation that existed during the Second World War, especially in terms of sharing intelligence, was one of the pillars of the 'special relationship' that would come into being.

<div align="center">✳✳✳</div>

The German Chiefs of Staff could easily have demanded that new models be developed for their ciphering machines, in order to make them safer, as is illustrated by the addition of new wheels and 'plugs' to the Enigma. If they carried out all modifications at once, and had been very strict regarding how employees should use them, there were high chances that the Allies should never have been able to read the enemy traffic again. This would have had dramatic consequences on the battlefield. It was therefore crucial that nothing should lead them to doubt the safety of their ciphers. All people who were associated with Ultra were selected with much precaution, and screened before they were taken in. High-ranking officials, whether they were civilians or servicemen, had often been appointed through personal acquaintance, and could therefore be relied on more easily. A sense of the importance of their work and of the crucial nature of the secrecy surrounding it was instilled in them. The same applied to Allied countries: the British were very reluctant to impart their knowledge as it could easily compromise their source. All the more since they were aware that one single person suffices to jeopardize the entire operation, and put an end to the existence of their "most secret source".

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[126] Bennett, R., *Behind the Battle: Intelligence in the War with Germany*, 1939-45, London, Sinclair-Stevenson, 1994, footnote, p. 121.
[127] Stripp, A., *op. cit.*, p. 18.
[128] Hoare, O., *Enigma: Code-Breaking and the Second World War: the True Story Through Contemporary Documents*, Richmond, Public Record Office, 2002, p. 6.

II The 'need-to-know principle': the fragmentation of information

The strict selection and vetting of employees on their recruitment may have been carried out very carefully, but when we take into account that more than ten thousand people worked at Bletchley during the war, it was almost impossible to be absolutely sure of each and everyone of them.

There was therefore a need for a further precaution as regards all the other members of staff. The 'need-to-know' was the rule. At all stages of the cryptanalytic operation and of the handling of Ultra, each person was only told what they absolutely needed to know to carry out their work. A principle of compartmentalization ruled: labour was divided into very specialized tasks, so that each person was but a cog in the wheel and did not need to be privy to the overall picture.

A. Inside Bletchley Park

Division of labour

There were two main priorities regarding the work at Bletchley Park: security, above all, and efficiency. The keys used to encipher the messages were changed on a regular basis, nonetheless four thousand German "high-grade" messages were decoded and read every day by the end of 1942,[129] proof as it was of the competent organization at BP. Fortunately, these two goals could be merged by having recourse to fragmentation. Taylorism, i.e. the scheme designed by F.W. Taylor which advocates the division of labour in order to counter any hindrance to efficiency, is renowned for its alleged better output. But a further asset is that workers are lesser threats to security if they are not aware of the bigger picture, but only know what they really need to in the "assembly line".

Station X was divided in 'huts' according to the type of military force considered (for example Air Force and Army in Huts 3 and 6, Navy in Huts 4 and 8), and hence to the type of keys used in the ciphers, but also, and above all, relying on the nature of the cryptanalytic task: from the interception of German messages to their transmission to

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[129] Hinsley, F.H., and Stripp, A., *op. cit.*, p. 1.

Allied commanders, through their decryption and their translation and elucidation, among others. Hut 6 was in charge of breaking the ciphers of the *Luftwaffe* and *Heer*, while Hut 3 had to prepare the raw decrypts, particularly translate them, amend them and assess their importance, before they were passed on to the relevant officials and commanders. A similar division existed for codes of the *Kriegsmarine*, between Huts 8 and 4. In a recent video on display at Bletchley Park's museum, a former employee, Sheila Lawn, underlines how everything was "compartmentalized", and that "each did [their] bit". Not all people involved in the process were learned cryptanalysts, 'boffins', as they were dubbed. The staff were numerous, with no particular training in the field, and they were assigned very specific tasks which they often learnt on the job. This greatly relieved cryptanalysts who could focus on finding new ways into the codes. For instance, in 1945, just under two thousand people operated the Bombes used to break Enigma, either in Bletchley or in "outstations", three quarters of them being Wrens,[130] trying 'menus' designed by the said cryptanalysts, which did not require specific skills. As men were often at the frontline, more hands were required, and it became clear that a female workforce was the only solution to the staff shortage. But, because of the stereotypes regarding the 'lesser abilities' of women, they were less likely to be cryptanalysts and were often confined to repetitive tasks, with a few notable exceptions.

In the accounts of their time at Bletchley, former agents often describe the very specific occupations that they were allotted. Peggy Erskine-Tulloch relates that she "never knew exactly what [she] was doing during each watch at Bletchley Park but it seemed to consist of feeding punched cards into a pipe-like machine". She is still unaware of the specificity of her occupation.[131] Barbara Cook offers a similar account: "I don't know what happened to the work that was produced from my machine, it was a tape. Somebody else took the tape and fed it through a machine, when the tape was finished I used to take it to Winnie. She dealt with it what happened to it then I don't know."[132]

On a similar note, many did not learn anything from the material they handled. This precaution was achieved through various means. Thus, Joan Tollett, now Marr, explains that they "couldn't understand a word of it, because it was all, well you know, just letters

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[130] Smith, M., *op. cit.*, p 76.
[131] Page, G. (ed.), *We Kept the Secret: Now it Can Be Told. Some Memories of Pembroke V Wrens*, Wymondham, G.R. Reeve, 2002, p. 5.
[132] Accounts gathered at Bletchley Park, *Other People's Stories*, vol. 1.

or numbers".[133] Likewise, people in contact with German text often could not speak the language.[134]

The contents of the decrypts in particular was kept as secret as possible from the people working on it. Hence, as soon as the beginning of an attempted decrypt appeared in correct German, the message was taken away from people working on deciphering machines.[135] Messages were not decrypted in the place where the "menus" suggested by cryptanalysts were tried, so that the people working in this section never knew what the text said.[136] Even codebreakers, who found how to break the codes, were not allowed to read the decrypts, nor did they try to. They only occasionally saw decrypts when they themselves broke a coded message entirely. Otherwise, they only offered suggestions, menus, that were then tried elsewhere. Charles Cunningham's account illustrates this perfectly:

> When you're an individual cryptanalyst just working on the intercepts of the day before, you don't have any real overall picture. You only see the bits of paper in front of you and try to break the cipher and having broken it you pass it on to someone else who does the decoding. The business of the cryptanalyst is simply to get the key. When he's done that, he goes on to another batch.[137]

Peter Twinn concurs: "I don't recall ever having decoded a message from start to finish to see what it said. I was much more interested in the methodology for getting German out of a coded message."[138] Their liaison officer or "Watch" told them which codes were most useful.[139] Similarly, a section with very few people, 3L, told Hut 6 where to put the bulk of the effort.[140]

More generally, the transmission of material between different sections was very strictly codified, and no one was supposed to know more than his or her job required. People working in a section called the Auto-Room did not know who they were dealing with.[141] Betty Mayall recounts how she was in charge of transferring information from her hut to various places. She was trusted with sealed envelopes, and she ignored the identity of the recipient and even sometimes the location where she was sent.[142] "What went on

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[133] *Ibid.*
[134] Margaret Rowe, nee Day, in Page, G. (ed.), *op. cit.*, p. 37.
[135] Daphne Child., nee Baldwin, in *ibid.*, p. 22.
[136] Cynthia Waterhouse, nee Kidd, in *ibid.*, p. 10.
[137] Smith, M., *op. cit.*, p. 84.
[138] *Ibid.*, p. 74.
[139] Ratcliff, R.A., *op. cit.*, p. 92.
[140] Erskine, R. and Smith, M. (eds), *op.cit*, p. 77.
[141] Luke, D., *op. cit.*, p. 35.
[142] Betty Mayall in Page, G. (ed.), *op. cit.*, p. 14.

next door" was a mystery, reinforced by the huge number of people working and the diversity of the tasks they were assigned.[143] For instance, and this is but an example, Hut 3 was denied access to Hut 6.[144] In this respect, the appellations of the different huts, either numbers or letters, were useful as they were in a way "covernames" for the activities carried out in the location. No matter if "Hut 3" was moved to another location in the course of the war, it was still referred to as "Hut 3".[145]

Fragmentation was of the essence in the organization of Bletchley Park, both on efficiency and on security grounds. This led some to compare Bletchley to a honeycomb where groups worked as if in sealed-off cells.[146]

Discussion of work only with colleagues working in the same room

Compartmentalization of work was one thing, but Bletchley Park was swarming with people who could not fail to cross paths, all the more given that several people were often billeted in one location – above all servicemen and women – and given the numerous leisure organizations that could be found at Bletchley. The benefit of compartmentalization would have undoubtedly been threatened should employees at BP have discussed their assignments with people who did not carry out the same work. For one thing, "Ultra" was never referred to outside the huts by those who knew about it.[147] Silence did not only apply to people outside Bletchley, but also to other workers of Station X.

There was therefore a rule that work should not be discussed outside a strictly occupational context, and only within the closest working environment – for instance, with colleagues from the same sub-section. Dialogue was limited to a given number of people, with the exception of any person who was not specifically authorized. No piece of information was to be disclosed to any other person, even from the same hut, except if the work specifically required it. Significantly, in a few sections some did not even reveal their name to their colleagues, and only used initials or codenames, as in some parts of Hut 3.[148] This accounts for the fact that nowadays many former employees do not have the slightest

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[143] Hinsley, F.H., and Stripp, A., *op. cit.*, p. 3.
[144] Jackson, J. (ed), Birch, F., *op. cit.*, 2004.
[145] Hinsley, F.H., and Stripp, A., *op. cit.*, p. 19.
[146] Young, I., *op. cit.*, p. 78.
[147] Ratcliff, R.A., *op. cit.*, p. 108.
[148] Accounts gathered at Bletchley Park, *Other People's Stories*, vol. 5, 2002.

idea of the number of employees that could be found in their own section, or are very mistaken about it, owing to the existence of shifts particularly, but not only.[149]

Many former employees recall that they had no clue as to the nature of the work of their friends, and that it did not come to anyone's mind to ask.[150] Catherine Caughei, nee Harvey, mentions how even the place where they had lunch was somehow codified, as there were different canteens, along with eating facilities run by the NAAFI, in charge of providing services to servicemen and women, thus excluding civilians. Even during their breaks, there was no "mix[ing] with people from other sections" and anyway they "DID NOT discuss [their] work".[151] Moreover, it was often ill-perceived to be to close to someone who did not belong to one's "immediate working environment".[152]

Ignorance of the "bigger picture"

There was a direct consequence to this intentional compartmentalization of work, and to the restricted discussion of it. As Professor Michael Howard puts it, "most of [workers at Bletchley Park] only had the haziest idea of what was going on in the place and how [their] work fitted in the big picture, indeed, what the big picture was."[153]

Tunnel vision seems to have characterised many of the people who worked at Bletchley, as it was imposed on them by the people who hired and trained them. Regarding their own work, the range of their knowledge varied significantly, but was often very small, particularly at the beginning of the war. When they first arrived at BP to operate the Bombes, in March 1941,[154] Wrens "were not trusted with any details of what they were doing", and Morag Maclennan confessed that it made their work a "boring, frustrating task"[155].

The accounts by people formerly working at BP diverge, but many confess that they hardly had any idea of what was taking place. Few people knew about the work at Bletchley outside their own occupation, and they did not try to do so. As Nigel de Grey points out:

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[149] Jackson, J. (ed.), *The Secret Work of Hut 3*, Milton Keynes, Military Press, 2002. Page II, introduction by Peter Calvocoressi.
[150] Louise Barrie, nee Gabriel in Page, G. (ed.), *op. cit.*, p. 12.
[151] Page, G. (ed.), *op. cit.*, p. 53. In capital letters in the text.
[152] Enever, T., *Britain's Best Kept Secret*, Stroud, Sutton, 1994, p. 78.
[153] Accounts gathered at Bletchley Park, *Other people's Stories*, vol. 1.
[154] Hinsley, F.H., and Stripp, A., *op. cit.*, p. 75.
[155] Smith, M., *op. cit.*, p. 76.

> None of the new arrivals had any idea of the general organisation or indeed of what other sections existed beside the one to which they had been appointed and it was no one's business to explain. (…) This was not like reservists rejoining the colours, it was more like the prim first day at a public school.[156]

Significantly, many only remember the building where they worked, but have forgotten that anything surrounded it. Some believe that there was only one hut, the one where they worked.[157] Doreen Luke, in the narrative of her time at Station X, evokes her visit to the place several decades after the end of the conflict: "BP was a series of buildings as I learnt years later, but at the time I only knew of our Block – the Auto Room."[158] She was only aware of the existence of two other sections, which she must have been in interaction with. Should this be put down to a deficient memory after all these years and to the mental blockage that has arisen from all the secrecy and silence that was required? The number of occurrences of such situations in the accounts seems to contradict such a position. Even those who remember how crowded BP was had no idea what other sections could be found. As Jack Good puts it,

> people who were not at the top did not know much about matters that were not directly of their concern, and the people who were at the top were not fully aware of what was going on (…) because of the complexity of the work, the advanced technology, the ingenuity, the mathematical ideas, and the variety of cliquish technical jargon.[159]

The organization of BP was set up in such a manner that the tasks were not so much divided in a vertical hierarchical order as according to a horizontal sequence, the chain of cryptanalytic operations. So that even in high-ranking positions, many officials did not know the full story. For instance, many were totally unaware of the technical details of cryptanalysis, or did not really know the contents of the decrypts. A few fully-indoctrinated people sufficed to make sure that the entire system worked. Of course, Heads of Departments discussed their work with each other when efficiency required it.[160] For instance, high ranking officials had to establish who would use the Bombes when these were not numerous enough and had to be shared between Huts 6 and 8, between codes of the *Luftwaffe* and *Heer*, or of the *Kriegsmarine*, and more specifically on which ciphers to focus in the broad range used by each formation. This required knowledge of the degree of

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[156]*Ibid.*, p. 3.
[157] Butters, L., *op. cit.*, p. 6.
[158] Luke, D., *op. cit.*, p.30.
[159] West, N., *GCHQ. The Secret Wireless War*, Sevenoaks, Coronet, 1987, pp.20-21.
[160] Erskine, R. and Smith, M. (eds), *op.cit*, p. 84.

importance of the different codes, and therefore of the contents of many of the decrypts, along with their relevance to the development of the war.[161]

Arguments ensued between top codebreakers and officials, between those who favoured a strict definition of the 'need-to-know' principle and those who did not. At the end of 1941, 'Dilly' Knox, one of the most famous cryptanalysts, sent the following letter to Denniston, the head of Bletchley Park.

> As a scholar, for of all Bletchley Park I am by breeding, education, profession and general recognition almost the foremost scholar, to concede your monstrous theory of collecting materials for others is impossible. By profession and in all his contracts a scholar is bound to see his research through from the raw material to the final text.
> From 1920 to 1936, I was always able to proceed as a scholar. I simply cannot understand, nor I imagine can the many other scholars at BP understand, your grocer's theories of 'window dressing'. Had these been applied to art scholarship, science, and philosophy, had the inventor no right to the development and publication of his discourses, we should still be in the Dark Ages.[162]

The answer he received epitomized the polite yet firm determination of Denniston that the division of labour and compartmentalization of work should be the rule. Thus: "If you do design a superb Rolls-Royce, that is no reason why you should yourself drive the thing up the house of a possible buyer, more especially if you are not a very good driver. Do you want to be the inventor *and* the car driver?". He added that the "exigencies of war" were to be blamed for the necessity of such a fragmentation, but that he had to be inflexible.[163] However, it is most revealing that Knox's position should have diverged when it came to recruits that were not – yet – prominent codebreakers. A debate was raging between Knox and Welchman regarding the Ultra-indoctrination that should potentially be given to new employees. Welchman wanted to initiate newcomers to the workings of the Enigma, while Knox opposed the idea, presumably both out of elitism and security.

The goal of limited indoctrination was quite obvious: only telling people what they absolutely needed to know prevented them from being too much of a threat to secrecy. No one knew in detail what was taking place, the "bigger picture",[164] i.e. that codes and ciphers were broken, their origin, their contents and how crucial they were, except for a little number of carefully selected high-ranking agents. It was essential that people should ignore the relevance and crucial nature of the work carried out. Thus the visits of Winston Churchill to Bletchley Park, proof as they were of the central part of Station X in the war

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[161] Hinsley, F.H., and Stripp, A., *op. cit.*, p. 96.

[162] Smith, M., *op. cit.*, pp. 126-7.

[163] *Ibid.,* p. 126.

[164] Kozaczuk, W., *Enigma. How the German Machine Cipher Was Broken, and How it Was Read by the Allies in World War Two*, London, Arms and Armours, 1984, p. 240, note 3.

effort, were not revealed to most of the employees.[165] Similarly, the origins of the decrypts were kept secret from most people, so that Doreen Luke can affirm, regarding Enigma, that they "knew nothing about it or any other of these vital pieces of equipment".[166]

Work at Station X was compartmentalized, on the grounds of efficiency, but above all of secrecy, which accounts for the very limited exchanges outside the closest working environment. It was a rather consensual rule not to ask questions that were not directly related to one's work. People were generally not let in the 'bigger picture', which was a way of lessening the incidence of a potential leak.

But there was more to Ultra than Bletchley only. The interception of German radio signals and above all the distribution of decodes to generals presented yet another threat to the confidentiality of Station X's operations. We need to establish how the principle of compartmentalization applied to these cases.

B. Outside Bletchley Park

Intercept stations unaware of what they were working on, and of their purpose

The existence of outstations for Bletchley epitomizes the compartmentalization of the British cryptanalytic operation. The German radio traffic was intercepted in different listening posts throughout Britain, before being passed to Bletchley for decoding. Beaumanor, near Leicester, and Chicksands, between Bletchley and Cambridge, rank amongst the most famous of these "Y Stations" (also called RAF or Army Y). Occasionally these stations carried out some traffic analysis to determine the geographical situation of the transmitters, and proceeded to the codebreaking of the simplest codes and ciphers, but as a rule the bulk of the traffic was transmitted to Bletchley Park through diverse secure means, notably reliable dispatch riders, or even underwater cables when the intercept stations were not on mainland England.[167] However, the spreading out of the outstations singularly contrasted with the concentration of the cryptanalytic activity at Bletchley Park and its security grounds.

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[165] Luke, D., *op. cit.*, p. 45.
[166] *Ibid.,* p. 40.
[167] Exhibition in Bletchey Park's museum.

Illustration 2: Beaumanor Hall[168]

Employees were often kept in the dark regarding even the work they carried out, so that it has been reported that ""most people did believe that Bletchley Park was a head office for our own secret transmissions."[169] That is, of course, when they knew about Bletchley Park. In a number of instances, it is obvious that the staff did not know where precisely their orders originated. After the war, Doreen Luke came into contact with one of these former wireless operators. She recalls their interview: "He had been one who had spent hours just listening to the airwaves and picking out messages and identifying call signs, these he passed on to where? Bletchley Park. He had never heard of it until just recently!".[170] Similarly, Joan Nicholls recounts that they only had been told about a certain "Station X": "We didn't know that Station X was Bletchley Park. We never knew where it was: you were only told what you needed to know and we just needed to know that Station X was controlling what we actually monitored."[171] Daphne Lyne, quoted by Doreen Luke, experienced a similar situation.[172]

Numerous employees resented being denied any explanation as to the relevance of their work in the context of the war. This is exemplified by a letter circulated in the first issue of the bulletin *Dots and Dashes* of the Sandridge radio listening posts.[173] "Doc" voices the demands that ensued from this situation among the staff of the station:

> My personal opinion is that we are not kept sufficiently informed about the character of the work. It is obviously boring to sit on a quiet frequency for hours, but if we could be told in confidence a little bit more about the chaps we are intercepting and the class of work we are dealing with it would go a long way.

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[168]http://www.leicestershire.gov.uk/index/education/community_activities/community_residential_services/beaumanorpark/beaumanor_park_y_station.htm. Accessed 20/04/2009.
[169] Large, C., *op. cit.*, p. 194.
[170] Luke, D., *op. cit.*, p. 47.
[171] Smith, M., *op. cit.*, p. 41.
[172] Luke, D., *op. cit.*, p. 51.
[173] "Extracts from the Journal of the Sandridge Radio Station of the Wireless Branch of the U.P.W. attached to a note from H.C. Kenworthy to Commander Travis (then deputy director of Bletchley Park), dated September 19th, 1941. In NA / HW 14/19.

He adds: "surely we could be told occasionally if we have done a good job of work."[174] To which another member of staff answered in the following issue that giving them more insight into the nature of the work they were trusted with would not only contribute to keep up their morale but would also pay off in terms of efficiency. Another employee suggested that decrypts be shown to them: "what about allowing us to see what a few messages look like <u>after</u> they have been decoded. If it is not possible to show us the real thing, no doubt the people at BP could construct some for us" and advanced that delegates could be nominated to visit "BP" and potentially come across "those mysterious figures, Mr. Welchman, Mr. De Grey, Mr. Shiner, etc. and dear old 'Hut 5' ".[175] The last letter is signed "Veteran Temp". All these excerpts from *Dots and Dashes* were attached to a reference sheet from H.C. Kenworthy to Commander Travis, Denniston's deputy, dated September 19, 1941. Kenworthy was outraged at this, and commented that a definite ruling has been made to the effect that such information could not be given to operating personnel. In addition, he voiced his concern that such newsletters containing "direct reference" to the details of their work and to BP be circulated, even if it was claimed that their diffusion was confined to Sandridge. The publication of the bulletin most probably came to a sudden end after the exchange between Travis and Kenworthy.

Significantly, hardly anyone knew about the now famous Enigma. In Whaddon, which was not a Y station but the location where the decrypts to the commanders were sent from, most recruits never heard of this machine. One of the agents who used to work there, Geoffrey Pidgeon, explains that he knew they "were in a secret job", but not necessarily that they were "listening to the enemy". He states the following:

> I never heard the word [Enigma] during all my time with Section VIII. I knew we were intercepting German traffic but I did not know that our knowledge was so complete - nor that we were deciphering German Army, Abwehr and Gestapo messages so exactly and from the Enigma machine. I must admit I thought it was coming from our agents in Europe.[176]

Only a restricted number of generals were Ultra-indoctrinated

In 1927, in a context of acute social unrest, the Baldwin government had revealed to the public that the Russians were fuelling these tensions in Britain: they disclosed the decrypt of a Russian coded message, thus betraying that they could read their codes. The

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[174] *Ibid.*
[175] *Ibid.*
[176] Interview with Geoffrey Pidgeon in Richmond, June 3rd, 2009 and e-mail dated June 6th, 2009.

ciphers were immediately changed for more secure ones that the British could no longer crack. Churchill, then a member of the government, never forgot that episode, which prompted him to require the utmost precaution to safeguard Ultra when he learnt of the first breaks into Enigma. He was conscious that the biggest hazard did not necessarily rest in Bletchley, but rather in Whitehall, and his fears were quite grounded.[177]

Group Captain F.W. Winterbotham drafted a plan for a completely overhauled organization for the spreading of the information. He depicts how his priority was to keep the number of authorized recipients of Ultra to a minimum, despite a few intrigues by high-ranking officers to be let into the bigger picture when they suspected that something was being hidden from them. "By order of the Director, G.C.&C.S., knowledge was to be denied to all but the essential minimum of outside parties",[178] and it was established that no-one could be indoctrinated without Winterbotham's consent. Top officers only received an Ultra indoctrination if the good handling of their mandate required, and even then they were only told what was necessary for them to know. Recipients of Ultra included "the Cabinet, the Chiefs of Staff, and certain commanders",[179] and Eisenhower in the later stage of the war.[180] Winterbotham provides details:

> The list was restricted to four or five people at each main headquarters, which themselves were restricted to supreme headquarters, army groups, principally army and Air commands operating both in the European and South-East Asian theatres of war, and the British and United States air force commands operating from Britain.[181]

So that April 1940, only thirty officers were Ultra-indoctrinated outside GC&CS and the Secret Intelligence Service, whether in Britain or overseas.[182]

Once indoctrinated, commanders were no longer authorized to go to the frontline, lest they should be captured and interrogated, which could have compromised the entire Allied cryptanalytic operation. This was much to the annoyance of some of them, notably Major-General George Patton, and Major-General Jimmy Doolittle,[183] but they complied. Only one incident happened when an indoctrinated officer of the Air Force was shot down in an air raid over France, which he probably should not have taken part in. He was luckily

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177 Episode of the BBC4 'What if' series, by Prof. Christopher Andrew, *op. cit.*
178 Jackson, J. (ed), Birch, F., *op. cit.*, p.760.
179 Young, I., *op. cit.*, p. 74.
180 Winterbotham, F.W., *op. cit.*, p. 9.
181 *Ibid*, p. 114.
182 Jackson, J. (ed), Birch, F., *op. cit.*, p.760.
183 Winterbotham, F.W., *op. cit.*, p. 115.

rescued by French resisters, but his careless behaviour might have had tragic consequences.[184]

Commanders were often faced with a very uneasy situation. They were provided with the "essence" of the Ultra decrypts, but they had to justify their decision-making without giving away their true sources, even to their second-in-command.[185] Thus when they gave orders to their subordinates they could not explain the reason for them. In most cases, soldiers simply obeyed the instructions they were given without asking, but this led to a few complex situations.

Most soldiers were totally unaware of Ultra, whatever their rank. On a few instances this was contrary to efficiency. The account by Edward Thomas of his time in the Navy, before becoming a Naval Officer at Bletchley, in Hut 3, is meaningful:

> In Iceland I had been interrogating the survivors of the many merchant sips sunk in the, at first, highly successful offensive against the Atlantic convoys launched by the U-boats in March 1941. I had spent many hours trying to analyse their strength and tactics. I could have spared my pains. For I now discovered that all this, and everything else about the U-boats, was known with precision by those privy to the Enigma decrypts.[186]

The strict regulation regarding the secrecy of Ultra led to some discontent among employees, and at some points hindered the efficiency of the Allied effort. However, this was the price to pay for keeping Ultra secret.

C. Yet a large number of people were 'in the know'

No matter the rather strict compartmentalization of work and the limited information provided to the people involved in the cryptanalytic operation, it appears that they knew maybe more than has been previously apprised, whether through their initial training, or simply because they could infer much from what they were working on and what they witnessed.

Many people were made aware of the bigger picture because of the need for efficiency

Similarly, on joining Bletchley or outstations, new recruits were often told more than had been previously assessed. R.A. Ratcliff provides an explanation for this. She underlines how all elements of signal intelligence, "Sigint", were "part and parcel of each

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[184] *Ibid*, p. 115.
[185] Enever, T., *op. cit.,* p. 4.
[186] Hinsley, F.H., and Stripp, A., *op. cit.,* p. 42.

other",[187] so that as a rule whatever material was required to carry out a specific task was provided to the person considered. This aimed at as much efficiency as possible in the context of the war. In addition, it appears that there were discussions of the part that Bletchley played in the war, as the following quotation underlines: "D.D.(S) expressed his anxiety to see the Assembly Hall used for Lectures connected with the War, for the purpose of improving the knowledge of the personnel of B.P., and increasing their interest in their work".[188]

Very contrasting accounts can be found regarding the extent of the communication between the different services at BP, according to the tasks taken into consideration. Thus Alan Stripp openly questions the claim that no exchange took place between departments. In his words: "I cannot believe that was 100 per cent true, but nothing leaked out as a result."[189] He continues: "some of the Hut 3, 6 and 8 Enigma experts who had worked together before coming to Bletchley did pool their wits", and, most interestingly, so did some of the women working on the Bombes, according to him. Thus, conversations were not limited to the most qualified codebreakers only. This is confirmed by Christine Large who asserts that, despite the compartmentalization of the tasks, there was more discussion inside Hut 6[190] than was generally been assessed by historians.

Many people, whatever the task they were allotted, were quite conscious of the part they played in the war, whether they were only a cog in the wheel or had a prominent part in the cryptanalytic process. Cynthia Waterhouse, nee Kidd, tells how "To keep up our morale we were told that Winston Churchill was constantly on the line and that our work was vital."[191] Some had a very clear vision of the general situation and direct access to top secret material. Thus Gwendoline Page, nee Alason, recounts how she worked on the indexing of signals. This consisted in storing all decrypts after cross-referencing them, so that decodes could be resorted to a later date, offering insight on specific subjects to elucidate new messages. The texts were therefore in English, hence understandable by all.[192] Some knew the direct incidence of messages as regarded the conflict in the field. Diana Neale is thus very lucid regarding the connection between the scraps of paper she

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[187] Ratcliff, R.A, *op. cit.*, p. 107.
[188] Notes on B.P. Meeting held on Saturday, 9th October, 1943. October 10th, 1943. In NA / HW 3/166.
[189] Stripp, A., *Codebreakers in the Far East*, Oxford, Oxford University Press, 1995, p.20.
[190] Large, C., *op. cit.*, p. 194.
[191] Cynthia Waterhouse, nee Kidd, in Page, G. (ed.), *op. cit.*, p. 10.
[192] Gwendoline Page, nee Alason in *ibid.*, p. 30.

handled and the course of the war. She explains: "We were always reading messages sent by U-Boat Commanders saying they had sighted a convoy and were about to attack."[193]

Occasional feedback on the impact of their work

Hence, workers were occasionally provided with details regarding the repercussion of their work. Thus Cynthia Waterhouse, nee Kidd, tells how she and her colleagues were sometimes given "news of [their] past achievements".[194] This was all the more advisable regarding recruits operating the Bombes, a very monotonous task which offered little insight of its impact in the war effort. In some cases this practice seems to have become almost institutionalized, and this feedback was offered on a regular basis. Dorothy Du Boisson recalls how "once a month" they were told what successes their work had brought about.[195] In some cases, this did not go without a reminder that keeping the secret was a constant priority, and even of a mention of the careless behaviour that had been notified.[196]

The reports that were offered to workers covered both cryptanalytic successes and their potential repercussions in the field. Morag Maclennan, a Wren who operated the Bombes, recounts how the codes she dealt with

> weren't necessarily operational, but they were building up the picture of exactly what Air Force squadrons and tank units were where, or where ships were and what they were doing. But when we were breaking the U-boat ones in particular, we were told about the U-boat sinkings and convoy protection, so we felt good about that.[197]

An episode is particularly vivid in the memories of many former BP agents: the visit of Admiral Cunningham to thank them for their contribution to his victory at the battle of Matapan. Not all workers were unaware of the work they were doing, by far.

However, it is noteworthy that this feedback was very strictly monitored, and the authorities were adamant that only selected pieces of information be disclosed. Thus careless revelations, even by prominent codebreakers or leaders, were very harshly reprimanded. Hut 6 provides a meaningful example of such instances. The cryptanalysts had started issuing a "weekly broadsheet", which was presumably confined to the Hut. However, as Bob Baker recalls, "it was full of top-secret tidbits and quite insufferable".[198] It contained details of the different successes in attacking enemy codes. Agents from the

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[193] Diana Neale, nee Spence in *ibid.*, p.57.
[194] *Ibid.*, p. 10.
[195] *Ibid.*, p. 60.
[196] *Ibid.*, p. 95.
[197] Smith, M., *op. cit.*, p. 76.
[198] Large, C., *op. cit.*, p. 195.

Control Room retaliated by publishing their own newsletter, but the authorities at Bletchley got wind of this careless behaviour, and the periodical suddenly stopped.

The knowledge of the part Bletchley played and its direct incidence on the conduct of the war was in a way part of the security measures surrounding Ultra: someone who knew just how crucial GC&CS was would be less likely to adopt careless behaviour and thus cause security leaks. As mentioned earlier, Britain was above all a nation at war, and the war effort created a bond that overcame most of the previous tensions. Many had relatives in the forces, and knew that a leak would deprive the troops of the manna that Ultra constituted, with tragic consequences.

The key to a successful fragmentation of information: adapting constantly

It appears that the strict delimitation of the allowed recipients of secret pieces of information was not always rigorously respected. Thus, the minutes of the heads-of-section meeting dated March 20th, 1943, report, on the matter of a confidential daily summary, how "whereas the circulation of the summary is limited to 5-6 people it is in fact seen by about 50".[199] Heads of Sections argued during the meeting that the people who had been granted access to these details needed them in order to carry out their work successfully. Efficiency was at stake, and Heads of Sections had thought that it fell "to their discretion" to decide who could be trusted. The minutes of the meeting provide a very interesting insight into decision-making at Bletchley as regards security. It was first typed that from then on the decision would be "the responsibility of Heads of Sections". However, this passage was crossed out and replaced by the following manuscript text, apparently after it was sent for approval to "C.S.S.", i.e. Stewart Menzies, the head of SIS: "limited to the officers now named by each section. If any section wished to extend the circulation to other officers it should be notified to AD(S)".[200] It was established that each Head of Section would draft a list of people accredited to see the document, but that no unauthorized person should be able to read the summary from then on. This shows that lapses from the security rules did occur, but that they were generally rapidly tackled. Goals of efficiency were still taken into account, but strict regulations were established. Authorities tried to make sure that they were not too draconian. A week later the issue was raised again during the Heads of Sections meeting. A bone of contention arose, namely on

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[199] "Heads of Sections Meeting", March 20th, 1943. In NA / HW 3/166. See appendix 5.
[200] *Ibid.*

the question of members of staff who needed to be given information only occasionally. Edward Travis, then Deputy Director of the military sections, was present, which shows the importance of security issues at Bletchley. He pointed out that the divulgence of extracts from the daily summary to any member of staff was allowed if his or her work required it. But it was the responsibility of the Intelligence Exchange reader to decide who needed these pieces of information.[201]

<center>✳✳✳</center>

One of the main priorities of the head of SIS, Stewart Menzies, but also of the Prime Minister, Winston Churchill, was to keep secret the monitoring of the German top ciphers by the Allies. Compartmentalization, the main feature of the work at both Bletchley and its outstations, served that purpose. However, the need for efficiency and the stress put on it seems to have countered to a large extent the necessary flaws of compartmentalization. Many more people knew, or at least had a hint of the existence of Ultra, than has often been claimed. In her account of her time at Bletchley Park, Doreen Luke states the following: "We knew so much and so little";[202] as a matter of fact, Ultra was such a sensitive subject that even those who did not exactly know what was taking place could compromise the entire operation. One of the most striking aspects regarding the experience of the workers involved in the establishment of Ultra is without any doubt the great range of situations that they went through in terms of degree of security: reactivity and adaptability were probably the keys that allowed the success of the codebreakers to remain secret. But, at the end of the day, it seems that the high sense of duty shared by all protagonists best accounts for the veil that shrouded the activities of Station X.

However, we should always keep in mind that there was more to Ultra than the mere interception and decryptment of coded messages: this intelligence had to be acted upon, and therefore required a frame to convey the information safely to commanders in the theatres of operation. Once again, the aim was two-fold: efficiency, but above all security prevailed. As we will see, there are strong parallels between the compartmentalization and the assignment of clear-cut roles in Bletchley, and the scheme drawn to for the dissemination of Ultra. A few measures to ensure the physical security of

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[201] "Heads of Sections Meeting", March 28th, 1943. In NA / HW 3/166.
[202] Luke, D., *op. cit.*, p. 31.

the premises were also required, as their absence could have scuppered the endeavour of a rigorous selection of employees and the systematic limitation of their knowledge.

III <u>The safety of Ultra-related premises</u>

<u>and of the distribution of intelligence</u>

A. 'Special Liaison Units'

As the first breaks into Enigma and other top secret Nazi ciphers took place, the extensive use that could be made of them really dawned on high-ranking officials, together with the need to pass the information to commanders in the field without revealing to the enemy that its codes were being cracked.

The structure that had prevailed until then could no longer provide sufficient security. As a rule, such crucial intelligence was transmitted to the Directors of Intelligence of the three service ministries. The diffusion of it was then left to their discretion.[203] However, the great extent of the knowledge that would be gathered should Enigma and Lorenz ciphers be broken did not allow for such dissemination. There was a risk of sending a same message, the decrypted enemy signals, through three different channels. This was considered as one of the greatest hazards in terms of cryptography.

The spreading of the Allied troops throughout the world made it necessary to have recourse to wireless communications in order to transmit the details of the Enigma decrypts to senior officers on the battleground. However, British leaders were very wary: from their own breaks into Ultra they knew how easily radio waves could be intercepted.

The potential scope of the Ultra traffic, and the sheer number of messages required a completely revised organization. Persisting in using this system would have been no more than a waste of time and would have required far too many employees. Not to mention the fact that the sudden surge of traffic as the first breaks occurred, or the volume of the radio communications, could alarm the enemy.[204]

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[203] Winterbotham, F.W., *op. cit.*, p. 38.
[204] *Ibid.*, p. 36.

"The plan"

In 1939, Wing Captain F.W. Winterbotham[205] was the senior Air Staff representative in the Secret Intelligence Service.[206] Appreciating the crucial nature of the issue, he established a protocol for relaying the content of these decodes to the commanders in the field.

Illustration 3: F.W. Winterbotham[207]

In his 1974 book, *The Ultra Secret*, Winterbotham exposes "The Plan" that he submitted for approval to Stewart Menzies, who had become 'C', the chief of the Secret Service, on Sinclair's death in 1939. There were two main facets to his plan. The first offered suggestions to make the handling of codes consistent, so that one text should no longer be translated by each of the three services, which was a great hindrance to efficiency. But above all, Winterbotham reflected on an organization that would permit the quick distribution of numerous decrypts to a very small number of highly-placed officials, military or other, throughout the globe, without revealing to the enemy that its ciphers were being monitored.

> Kozaczuk provides details regarding the identity and limited number of addressees:
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> The list of recipients was to be limited to four or five persons at each of the following main headquarters: supreme headquarters, army groups, principal army and air commands in

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[205] He later became Group Captain. Cf. Ratcliff, R.A., *op. cit.*, p. 119.
[206] Winterbotham, F.W., *op. cit.*, p. 13 (Foreword by Marshal of the Royal Air Force Sir John Slessor, GCB, DSO, MC, DL).
[207] Picture taken from the French edition of Anthony Cave Brown's *Bodyguard of Lies*: Cave-Brown, A., *La guerre secrète*, Pygmalion, Paris, 1981.

Europe and Southeast Asia, and British and U.S. air force commands operating from Britain.[208]

Winterbotham's permission was required to add any name to this list. In this regard, he acted on behalf of Colonel Stewart Menzies, the head of SIS.[209] A memo dated April 1943 stressed the need for these selected few to sign a document stating that they understood the regulations surrounding the Ultra-indoctrination. In addition, if, for any reason, someone was no longer to be a recipient, he was not to divulge anything on the matter.[210] Even the people who became indoctrinated were provided information according to a 'need-to-know' principle only:

> Nothing must be (…) sent to a recipient which did not directly concern him - the criterion was his 'need to know' its content, which must be of 'value not interest' to him – and various groups of recipients had to be kept informed on an all-or-none basis lest consultation between them be frustrated.[211]

F.W. Winterbotham advised to create small teams to accompany each commander that was a recipient of Ultra on the field. He intended to:

> […] form small units of trained cipher and radio personnel and attach these to commands in question, with the double purpose of providing an immediate link for the information and having an officer on the spot charged with seeing that all the necessary precautions were carried out for its security.[212]

In the first stage of the war, these units were called Special Signals Units, and then renamed Special Liaison Units,[213] a change that Winterbotham omits. We have to keep in mind that as the archives were not yet open in 1974, he wrote his book from memory, which accounts for a few mistakes in this landmark work.

These Special Liaison Units were the only means for sending this intelligence to the commanders. No other channel was authorized. This was equally true when government departments which received the details of decrypts wanted to forward the information to the field.[214] Inversely, only Ultra material would be distributed through this means, which was the best way of protecting its source.

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[208] Kozaczuk, W., *op. cit.*, p. 100.
[209] *Ibid.*, p. 100.
[210] BP History: Chapter X, Story of the Special Liaison Units (SLUs); original draft with manuscript amendments. These regulations are dated April 1943, but certainly applied before. NA/ HW 3/165. p. 5.
[211] Calvocoressi, P., *Top Secret Ultra*, London, Cassell, 1980, p. 29.
[212] Winterbotham, F.W., *op. cit.*, p. 39.
[213] Smith, M., *op. cit.* p. 107.
[214] Winterbotham, F.W., *op. cit.*, p. 39.

A further point was necessary if this plan was to be met with the agreement of top officials:

> Copies of all signals would, of course, still be sent to the directors of Intelligence whose responsibility it would be to keep their chiefs of staff fully informed and to co-ordinate the logistical information of the various enemy units, which we call the order of battle.[215]

Stewart Menzies did not oppose this plan, but he told Winterbotham that he had to obtain the agreement of the directors of Intelligence before he could set up this new organization, which he eventually did. The Navy could not adopt the SLU system, as it was impossible to set up each of these units in every battleship, but it occasionally shared these sections with the Army or the RAF when land bases were used.[216] Finally, a name was allotted to this crucial intelligence, indicating its very secret nature, "Ultra", as we know.

The concept designed by Winterbotham, the "SLUs", aimed at achieving the two main priorities regarding Ultra, as the author underlines: "the scheme did allow for expansion and, above all, for security".[217]

An outline of the system of transmission

This scheme involved a new organization, which, though quite straightforward, required many precautions to make sure that its goal of security was achieved at all times.

Decrypts were sent out from a location in the surroundings of Bletchley, called Whaddon. It housed Section VIII of MI 6, i.e. SIS Communications. A wireless station was set up there which went under the name of "Windy Ridge".[218] All messages meant for the commanders were sent from this location before being received through the SLUs.

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[215] *Ibid.*, p. 40.
[216] *Ibid.*, p. 40-42.
[217] *Ibid.*, p. 40.
[218] Bletchley's Museum.

Illustration 4: Location of Whaddon in the neighbourhood of Bletchley[219]

As evoked, the Special Liaison Units (SLUs) were initially called Special Signals Units (SSUs). This name had to be changed quickly as "the abbreviation SSU and the presence of Intelligence Corps officers in the unit had led to it being jokingly described as 'the Secret Service Unit'"[220] by unindoctrinated servicemen. Moreover, the initials 'SS' evoked the infamous German organization. To be more accurate, there were actually two components in this system: the Special Communications Units, SCUs, often from the Royal Corps of Signals, which dealt with the signalling part of the operation; and the Special Liaison Units, in charge of decrypting messages sent from Station X or Whitehall and of delivering them to the generals. Of course these two entities were strongly intertwined.[221] So each SLU was composed of "one fully Ultra-indoctrinated intelligence officer who supervised several cipher sergeants and signallers (the latter were not necessarily indoctrinated)".[222] Once the decrypts had reached the SLUs, the procedure was very codified, as any slip could provoke a leakage likely to jeopardize the entire operation.

The SCU operator, on receiving the decrypt from Windy Ridge, would write down the series of letters sent by radio. He then passed them on to the SLU which decrypted the message. The Signals Liaison Officer (SLO) then brought it *directly* to the commander in

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[219] Map taken from Google Maps. Accessed May 18th, 2009.
[220] Smith, M., *op. cit.*, p. 107.
[221] Ratcliff, R.A., *op. cit.*, p. 119.
[222] *Ibid.*, p. 119.

the field, remained with him while he read the message, which he then took back and destroyed.[223] Any "queries" on the part of commanders regarding Ultra could be sent to Hut 3 through the SLU.[224]

As the system grew in size, Winterbotham was ordered by Menzies to visit all the SLUs in order to make sure that these units followed regulations to the letter. If necessary, he could enforce his authority by saying that not only did he work on behalf of Menzies, but that he also had Winston Churchill's backing. As Winterbotham underlines, "This was a clear indication of the Prime Minister's view of the place this information occupied in the war effort".[225] It was also Winterbotham's responsibility to establish whether the demands for additional SLUs were legitimate or not. The usual policy was to keep the number of Ultra- indoctrinated agents to a minimum, and their spreading over was seen as a very dangerous threat. So that to take the right decision he often chose to visit the army troops considered before taking any action, as was the case in Tunisia.[226]

The first SSU was founded in Cairo in the first half of 1941, but the number of SLUs rose dramatically, to over forty units in Europe and in the Middle East.[227] Cairo is a good example of the extent of the communication that travelled through that channel:

> In the first nine months of the Special Signals Units to the Middle East, between March and November 1941, Hut 3 had sent just over 2000 signals to Cairo. Between November 1941 and July 1942, it had sent five times that figure.[228]

The security of the transmissions by SLUs is confirmed by the fact that it was used by Churchill himself to convey his most secret messages, as did Eisenhower, the Supreme Commander of the Allied Forces in Western Europe, and at the latter stage of the war, Truman.[229]

B. The disguise and physical security of the facilities

Quite naturally, the complex screening and vetting of the personnel and the compartmentalization of the information, as well as the strict definition of the different people in charge of distributing Ultra, could not exist without the enforcement of security measures in order to protect both the people on the Ultra list and Ultra itself – together

[223] Museum at Bletchley Park.
[224] Smith, M., *op. cit.*, p. 108.
[225] Winterbotham, F.W., *op. cit.*, p. 113.
[226] *Ibid.*, p. 124.
[227] Ratcliff, R.A., *op. cit.*, p.119.
[228] Smith, M., *op. cit.*, p. 110.
[229] Winterbotham, F.W., *op. cit.*, p. 141.

with the establishment of a 'camouflage' for each of the locations concerned. Not drawing attention was often the most secure way to protect the premises.

Protection of the perimeters

There were many common points with regard to the safety of this precious intelligence, whether in the Y stations, at Bletchley Park, in Whaddon, or in the SLUs – the only discrepancies can often be put down the various sizes of the facilities taken into account. One could not transpose rules applying to units comprising a couple of members to the ten-thousand-strong Bletchley.

Throngs of people came and went in Bletchley, and in many of the Y stations as well as in Whaddon, so that it was necessary to control the identities of people when they entered the properties. Given the top secret nature of the work carried out, and the fact that one single person could compromise the entire operation, the establishment of a satisfactory security protocol was crucial. Thus, a former Scotland Yard agent was recruited to devise regulations to protect the perimeters of Bletchley Park. He set up a system relying on the three following components: "guards, gates, and passes".[230]

The first breaks into Enigma were a turning point that brought with it a whole set of restrictions. Thus Michael Smith evokes how "Hut 6 and Dilly Knox's Enigma Research Section became 'barred zones' for anyone who was not working there, as did Hut 3".[231] The same can be imagined regarding all the other sections involved in confidential matters – that is, presumably all but very few of them.

Marion Hill quotes the following statement regarding the first impression of a new recruit on joining Bletchley: "the entire perimeter was surrounded by a security fence of upright metal laths, bent over at the top and surmounted by several layers of barbed wires".[232] Kozaczuk reports how guards were posted to the entrances of Bletchley Park "day and night", and were apparently from the RAF[233] or the Military Police.[234] In the outstation of Eastcote, which housed the well-known Bombes, authorities had endeavoured to install high blast proof walls.[235]

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[230] Ratcliff, R.A., *op. cit.*, p. 102.
[231] Smith, M., op. cit., p. 44.
[232] Hill, M., *op. cit.*, p. 28.
[233] Kozaczkuk, W, *op. cit.*, p. 159.
[234] Accounts gathered at Bletchley Park, *Other people's Stories*, vol. 4, 2002. 'Notes' issued to all Other Ranks and ATS posted to the Bletchley Park War Site. Signed by Captain G.S. Seabrooke, May 25, 1942.
[235] Ruth Bourne, nee Henry, in Page, W., *op. cit.*, p. 99.

As for the last of the set of measures, the use of passes, its importance was impressed on the new recruits as soon as they set foot on the ground.[236] It was explained to them that they would need a pass in order to gain access to the propriety, and their not presenting it to the people in charge would result in their not getting in. Thus Audrey Wind, who was stationed at Eastcote, remembers that if she did not show her pass with her photograph she was denied access, no matter that the guard knew her.[237] They were warned of the sentence they would face should they lose their passes. In such instances, the security officer had to be notified as soon as possible. Not only would one have to pay 2/6 d., but they were warned that "a very serious view is taken of such losses".[238] One of the agents found herself in this situation, and was severely punished and reprimanded by a P.O., who advised her that, had she been a sailor, she "could be put in irons for losing [her] liberty pass".[239] On leaving BP for another station, personnel had to return the pass and to sign off in Hut 9A.[240]

However, all these guarantees could have easily been reduced to nothing. Indeed, Alan Stripp, who was a cryptanalyst at Bletchley Park for a time, underlines that the presence of guards and a fence did not suffice given that "when the civilians in the Home Guard took on the military in a friendly exercises, they breached the wire in a few minutes by tunnelling under it".[241] This sheds new light on the following statement by Alan Stripp: "What mattered was not that no unauthorized person could know the whole story, but that Bletchley Park was not identified as the British codebreaking centre".[242]

Chatham's Y station, "too exposed", was moved to Beaumanor.[243] The same principle of precaution seems to account for the dispersion of Bombes in outstations, most notably in Eastcote and Wavendon, in order to avoid bombings[244] in the case of Bletchley's being identified as the codebreaking unit in Britain (and maybe so that the noise would not raise a breath of suspicion about the activities of Bletchley because of the racket made by the machines). Similar worries were voiced by Montgomery to account for

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[236] Betty Mayall, in *ibid.*, p. 13.
[237] Audrey Wind, in *ibid.*, p. 13.
[238] Accounts gathered at Bletchley Park, *Other people's Stories*, vol. 4, 2002. 'Notes' issued to all Other Ranks and ATS posted to the Bletchley Park War Site. Signed by Captain G.S. Seabrooke, May 25, 1942.
[239] Margaret E. Francis, in Page, W., *op. cit.*, pp. 81-82.
[240] Accounts gathered at Bletchley Park, *Other people's Stories*, vol. 4, 2002. 'Notes' issued to all Other Ranks and ATS posted to the Bletchley Park War Site. Signed by Captain G.S. Seabrooke, May 25, 1942.
[241] Stripp, A., *op. cit.*, p. 20.
[242] *Ibid.*, p. 20.
[243] Welchman, G., *The Hut Six Story: Breaking the Enigma Codes*, Harmondsworth, Penguin, 1984, p. 149.
[244] Page, G., *op. cit.*, p. 99.

the isolation of SLUs in a very remote location. He claimed that the radio-traffic emitted by SLUs may enable the enemy to triangulate the position of the troops. This was unfounded, because the use of very short-wave signals and "the acknowledgment signals from the SLU (…) equally short and at different times each day", along with the disinterest of the enemy in locating SLUs, proved that they did not constitute a risk to the troops, and were not under threat of being compromised, but were simply an excuse for more personal motives.[245]

Some SLUs were occasionally very heavily armed, when they were very near to the frontline. They were sometimes provided with an impressive artillery. Thus,

> Personal weapons carried were the Lee-Enfield .303 rifle and bayonet, the British Webley or US Smith and Wesson .38 calibre revolver and a 9 mm Sten machine carbine. For all round unit protection, the jeeps were fitted with a mixture of Potts 20 mm cannon, .303 Vickers 'K' machine guns on twin mountings and, in some cases, captured German MG 42 'Spandau' machine guns with their ammunition.[246]

It appears that one of the main priorities with regard to safeguarding the secret, especially in the light of a potential invasion of England by Nazi troops, was to be able, in the event of an attack, to destroy all evidence pointing to the breaking of Enigma and other top ciphers. Y stations in particular were fitted with axes and revolvers in order to be able to resist enemy attacks and to sabotage all lines before invasion troops reached the premises.[247] Even more significantly, "self-destruction explosive devices were fitted to both sensitive equipments and vehicles".[248] Similarly, all compromising documents were disposed of once and for all as soon as they were no longer of use. Thus signals and their decoding keys were "incinerated after use in a special high-temperature chamber" that was provided to each SLU.[249] On a similar note, one of their biggest fears was that the decrypt printed out from the Typex machine should stick to the sole of their shoes when they left the SLU to transmit the message to the commanders.[250]

Restrictions imposed on the employees

It was crucial that, despite the large number of employees, Bletchley and its outstations should not be identified as the heart of the codebreaking operations in England.

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[245] Winterbotham, F.W., *op. cit.*, p. 173.
[246] Pidgeon, G., *op. cit.*, p.73.
[247] Rosemary Lyster, in Page, *op. cit.*, p. 112.
[248] Pidgeon, G., *op. cit*., p.73.
[249] *Ibid.*, p.74.
[250] Lewin, R., *op. cit.*, p. 140.

Therefore, regulations were very strictly established. Needless to say, bringing a camera inside Bletchley was forbidden.

Personnel from 'Other Ranks' and ATS were reminded that for mail inside the country, the address of the billeters could be divulged to relatives, but if the letters were meant for people overseas, whether they were foreigners or not, neither Bletchley nor surroundings locations could be mentioned. This also applied for Northern Ireland, and naturally Ireland. Another box address was then resorted to: C/o P.O. Box 222, S.W.D.C., Howick Place, London, S.W.1.

In this case, all the mail was gathered at Station X and posted from London. Any mail sent to this address was carried from London by dispatch rider and made available to the employees in their section. The same rule concerning overseas traffic applied to telegrams, which could be received at the following address: Bonzo, Sowest, London.[251] The same anxiety not to pinpoint Bletchley and its outstations as central locations in the war effort transpires from these measures.

As evoked earlier, the compartmentalization of the information had direct consequences on the behaviour of employees with members of other sections. The SLUs and SCUs in the field were no exception. They were not authorized to mix with the rest of the troops. In Geoffrey Pidgeon's words:

> Life in the SLUs was almost monastic. Fraternisation with other units, especially signals, was strictly forbidden, for obvious reasons. Encampments both temporary and semi-permanent, always had to be at a distance, hence the field telephone and exchange equipments [to communicate with the army officers].[252]

One of the agents of the SLUs, Sergeant Reynolds, was almost killed when conveying a message to Air Vice-Marshall Slessor, as an American sentry unaware of who he actually was tried to snatch the message from him and almost killed him.[253] In addition, they did not refer to the officers of the troop they were accompanying, this independence being crucial to the safeguarding of the secret.

Normally one day off was granted to employees once a week. They had to state where they were bound to if they did not remain in their billet. Needless to say, once taken in at Bletchley or in outstations, it was almost impossible to leave, except to go to other

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[251] Accounts gathered at Bletchley Park, *Other People's Stories*, vol. 4, 2002. Memo n°25 by Bradshaw, A.D.(A) dated April 17, 1942.
[252] Pidgeon, G., *op. cit.*, p. 74.
[253] Lewin, R., *op. cit.*, p. 144.

posts also dealing with Ultra. 'Once in, never out' was the rule.[254] Thus Bletchley's officials could obtain deferment for those men called to service provided they confirmed that they were strongly involved in the war effort.[255] The reasons for this were two-fold. The cracking of Ultra signals required numerous employees, and there was an almost constant shortage of staff available. But above all, security reasons accounted for this 'preferential' treatment. However, a few men were removed from the reserve list… in September 1945, after VE Day.[256] Additional rules were enforced at critical points of the conflict, for example before the landings in Normandy. For several months before this landmark took place, the staff at BP was forbidden to travel outside a 20-mile radius around Station X, to quote but one restriction they were faced with.[257]

Camouflage and the 'Secret Limeys'

Bletchley and the other locations associated with Ultra were bustling with activity in rather quiet neighbourhoods. Numerous measures were thus taken in order not to draw too much attention among people living in the surroundings. This was particularly true when it came to the transportation of employees, messages and goods, in and out of BP. Sarah Baring recalls that when she first went to Station X, she was taken into a camouflaged car. On a similar note, Geoffrey Pidgeon describes how the cars resorted to at Whaddon and in SLUs, rather luxury vehicles, had to be disguised:

> The Packards were later sent to Tickford's factory, now the Aston Martin factory, in Newport Pagnell, about ten miles from Whaddon. At Tickford's they were stripped down and repainted in camouflaged colours. (…) During my service at Whaddon, he [Geoffrey Pidgeon's father] described them to me as arriving in a wonderful selection of colours. (…) the Packards were a 'drab lot' when they returned to the unit from Tickfords. [258]

As a precaution, army vehicles began to prevail later on, and army vehicles such as the QL4*4, British Guy 15 cwt or Dodge ambulances were more commonly resorted to.[259]

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[254] Stripp, A. *op. cit.*, p. 20.
[255] Letter from the Ministry of Labour and National Service to Commander Travis dated December 1942 in NA / HW 64/31.
[256] Letter to Miss Dodd, Ministry of Labour and National Service, September 21st, 1945 in NA / HW 64/31.
[257] Hill, M., *op. cit.*, p. 132.
[258] Pidgeon, G., *op. cit.*, pp. 125-126.
[259] *Ibid.*, pp. 127-128.

Illustration 5 One of the vehicles used by SCU/SLUs, a Guy 15 cwt[260]

But of course, residents in the surroundings of Bletchley Park, but also of all the other locations involved in the reading of Ultra, necessarily had an inkling of what was taking place. They knew that it had to do with the war effort, but they often estimated that these were centres for government communications, as the name GCHQ, Government Communications Headquarters, led them to believe in the case of Bletchley. The phrasing of the name of passes: 'Government Communications Pass' had the same purpose.[261]

It was crucial for the SLUs to remain unnoticed from the rest of the military camp. This proved rather complex as they had to do their work "all without other formations knowing what [they] were up to".[262] This was all the more complicated for mobile SLUs. In order not to attract attention, most SLOs were rather young and not particularly high in rank.[263] They had however been strictly selected and vetted, handpicked, before being assigned to these positions. *Ultra Goes to War*, by Ronald Lewin, provides a good illustration of the cover used. He quotes an US Air Officer, Lewis Powell: "There was this little truck hidden among the trees, with people occasionally going to and fro. It thought it was a Direction-Finding Unit".[264] Indeed, trees were useful as they allowed the hiding of the antennae that were of the essence to all radio transmissions. This explains why the SLU was dubbed 'secret Limey' in Normandy in 1944, as it was set up among apple trees.[265] They often claimed to be "independent cypher unit[s], handling very personal and very

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[260] Pidgeon, G., *op. cit.*, p 73.
[261] Accounts gathered at Bletchley Park, *Other people's Stories*, vol. 4, 2002.
[262] Lewin, R., *op. cit.*, p.141.
[263] Collections of the Imperial War Museum, 78/74/1. Private papers of S F Burley, Squadron Leader. Account by him and his colleagues of the work of the SLUs.
[264] Lewin, R., *op. cit.*, p.140.
[265] *Ibid.*, p.140.

secret messages necessitating rapid transmission, for certain high-up officers who were specially authorised to use [these] links."[266]

One incident almost gave away the true activity of the SLUs. The staff of the section at Constantine had gathered from the content of Ultra that their station was about to undergo bombings, which led all members of the unit to wear helmets. The coincidence of this precaution and the air attack did not escape the attention of the rest of the military camps, therefore orders were issued that in the case of a further warning regarding a potential raid, no hat was to be worn.[267] Such trivial careless behaviour, however natural, could have tragic consequences.

C. The transmission of Ultra

Physical security[268]

As evoked earlier, senior intelligence officers in Britain were all too mindful of the risks entailed by radio-communications. They sought to avoid using them, as far as possible, for the dissemination of messages. The first rather secure means that can be underlined was of course transmission by hand, and indeed numerous motorcycle dispatch riders came and went from Bletchley Park, "in a continuous stream".[269] In the first stage of the war, Churchill received the titbits of Ultra information in this manner, in a red box, at No. 10 Downing Street, and then in the War Room during the Battle of Britain. The same applied regarding MI6 : "the reports had been bagged up at the end of the day and sent down by van to MI6 headquarters in Broadway, from where they were passed on to the War Office, Air Ministry and the Admiralty".[270] However, riders had to be carefully cleared for security, and as the number of intercepts reaching Bletchley and the output in terms of decrypts rose dramatically, another channel proved necessary. Moreover, this proved a rather slow mode of exchanging intelligence, and the telephone had sometimes to be resorted to.[271] However, telephone lines were not secure means of communication, especially when no scrambler was used. This was underlined in posters[272] and in a memo

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[266] BP History: Chapter X, Story of the Special Liaison Units (SLUs); original draft with manuscript amendments. p. 6. NA HW 3/165.
[267] Lewin, R., *op. cit.*, p. 144.
[268] The two headings of this part and the following one are taken from the names of two sub-sections in the inspiring *Delusions of Intelligence*, by Ratcliff, R.A., *op. cit.*
[269] Bletchley Park's Museum.
[270] Smith, M., *op. cit.*, p. 47.
[271] Winterbotham, F.W., *op. cit.*, p. 58.
[272] See appendix 6.

dated October 29th 1942, stressing the fact that Post Office employees could be listening to the calls and that all precautions had to be taken when resorting to this means.[273] A very reliable means for transmitting information without the enemy knowing was to use what was called a 'teleprinter', a form of telephone. Indeed, telephone lines could never be tapped to a great extent, and teleprinter lines were particularly secure ones. As of 1943, almost all traffic was transmitted through teleprinter, and no longer via dispatch riders. By the summer of 1940, Winterbotham received messages by teleprinter and no longer by telephone – which was not secure enough – or dispatch rider,[274] and so did MI6.[275] Apparently there even existed some underwater cables to convey the all-important series of letters from Y Stations to Bletchley Park.[276] The teleprinters were first installed in the Ballroom in the Mansion, and then moved to Block E in March 1943 following the increase in the traffic.[277] Throughout the war, virtually all decodes sent to Winston Churchill and 'indoctrinated' officials in Britain were conveyed by either hand or teleprinter.[278] The exchanges of information with the Allies (France and Poland) also took place via teleprinter, as was agreed at a joint conference on January 9th, 1939.[279]

As a further security, at a point of the war, probably at the beginning when messages were carried by dispatch rider, Churchill was to return all Ultra-related material daily to GC & CS,[280] or to destroy it, as can be read in a return note to Menzies: "Himmler telegram kept and destroyed by me".[281]

However, these two media proved irrelevant when it came to communicating with troops outside mainland Britain. There was no choice but to use radio transmissions. An efficient protection was to use short-wave signals, which were harder for the enemy to intercept. Above all, no message was ever sent 'in clear', all were coded using powerful ciphering devices. In the summer of 1940, the Germans were reading some of the codes used by the Navy,[282] which emphasized the need for a secure cipher. Two main types could be found. It appears that in the first stages of the war, one-time pads codes were heavily

[273] Note "Telephone" to all sections, dated October 29th, 1942 in NA/ HW 64/10.
[274] Winterbotham, F.W., *op. cit.*, p. 58.
[275] Smith, M., *op. cit.*, p. 47.
[276] Museum at Bletchley Park.
[277] Museum at Bletchley Park.
[278] Ratcliff, R.A., *op. cit.*, p. 118.
[279] West, N, *op. cit.*, p. 196.
[280] Cantwell, J.D., *The Second World War. A Guide to Documents in the Public Record Office*, Kew, Public Record Office, 1998, p. 7.
[281] Answer from Winston Churchill to Stewart Menzies, the head of the Secret Intelligence Service. Dated August 1944. In NA/ HW 1/3196.
[282] Sebag-Montefiore, H., *op. cit.*, p. 86.

relied on. These were at the time regarded as the safest existing ciphers. Winterbotham was a strong advocate of their use, as "It was at this time, as far as I knew, the only absolutely safe cypher in existence, although the Germans obviously thought otherwise".[283] Both senders and receivers knew the details of a "key" which was used to encipher the message, the advantage being that even if the enemy got hold of some of the keys, this should not help him with the breaking of other ciphers, as all keys were normally unrelated.[284] However, their use brought about problems regarding the distribution of the keys to both senders and recipients. Therefore, encrypting machines were gradually resorted to. The British used a ciphering device called Typex:[285] it had numerous common points with the German Enigma, but its designers "developed it with all the knowledge of [the] success against the German Enigma"[286] in order to create a machine that was secure enough. It was considered as offering "reasonable security".[287]

Illustration 6: A Typex[288]

The Americans had recourse to a similar machine named Sigaba. Later on, a hybrid between an Enigma and a Sigaba was created and named CCM, and could also be used. Nonetheless the British and the Americans were very worried lest the Germans should break these codes, but they never did. Indeed had they done so, they would necessarily have discovered that Ultra was being monitored, and would have made their ciphers more

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[283] Winterbotham, F.W., *op. cit.*, p. 39.
[284] Copeland, B.J. (ed.), *Colossus. The Secrets of Bletchley Park's Code-Breaking Computers,* Oxford, Oxford University Press, 2006, p. 173-174.
[285] Winterbotham, F.W., *op. cit.*, p. 39.
[286] *Ibid.*, p. 39.
[287] Ratcliff, R.A., *op. cit.*, p. 120.
[288] Bletchley Park's Museum.

complex, which they could have done quite easily, had they not been so convinced that their communications were absolutely secure.

The Admiralty proved to be a problem, as given the numbers of its units at sea, they could not all be provided with a SLU. Therefore, they used their own ciphers, generally one-time pads. As Winterbotham explains:

> (…) For all their instructions based on Ultra information, they used their own cyphers which worked much of the same principle as the tear-off, once-used pad, except that it was in book form and the pages of random figure groups were therefore used over and over again.[289]

And thus: "They required both sender and receiver have an identical pad of tear-off sheets. The sender indicates the relevant sheet to the receiver and the sheets are destroyed after use."[290] Obviously this was done with the utmost precaution.

The account of the transmission from Bletchley to the SLUs provided at Bletchley's Museum exemplifies what gradually became the norm, namely the combination of all these secure channels:

> (…) the coded text [the decrypt re-enciphered using a Typex in this case] was typed into a teleprinter connected by dedicated telephone line to the SCU at Windy Ridge. The message was printed on the receiving teleprinter as groups of letters on a roll of paper, which was then passed to the wireless operator. He then sent it in morse codes to the SLU in the field.[291]

Teleprinter and dispatch riders were seen as the best means for conveying pieces of information safely. But when the recourse to them was not possible, the usefulness of radio signals was not ignored. Even fixed SLUS in the UK often had backup wireless equipments, should the teleprinter break down.[292] The transmission of details through this channel was however strictly regulated, and only the safest ciphers were resorted to. Security was so crucial that should a message not match the security requirements, it was simply not transmitted to the senior Allied commanders.[293]

Cryptologic security

As opposed to the Germans, British senior officials were very wary of the risk that their cyphers were faced with, considering the different breaks into the Enigma and Lorenz

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[289] Winterbotham, F.W., *op. cit.*, p.109.
[290] Pidgeon, G., *op. cit.*, p. XXVI.
[291] Bletchley Park's Museum.
[292] Pidgeon, G., *op. cit.*, p. V.
[293] Ratcliff, R.A., *op. cit.*, p. 116.

machines, that were both reputedly 'unbreakable'. Therefore, they were constantly careful when using coding devices, especially when it came to conveying Ultra material safely.

It is most revealing that the Allies should have had units devoted to cracking their own cyphers, in order to see whether it was possible for enemy cryptographers to do so. And they used all their knowledge derived from the attacks on German cyphers to list the flaws that their own codes were not to have. To quote but one example, one of the main weaknesses of the Enigma machine was that an "A", for instance, in the original text, could never produce an "A" in the coded message. Developers of the Typex took this into account and made sure that Typex codes were double-enciphered, to remedy this flaw.[294] Significantly, one of the top German cyphers, Double Playfair, was originally a British code, Playfair, that the Germans had managed to break before the outbreak of the war. But they adapted it to make it more secure, and used it for their own communications. Needless to say, Double Playfair was broken and added to the crucial content of Ultra.

But above all, a few principles of cryptologic security ruled: no decrypt could be sent out without being first paraphrased, except when transmitted by teleprinter[295] or by "true one-time-pad ciphers".[296] Thus "heading on cipher telegrams" offered the following warning: "This message will not be distributed outside British or U.S. government departments or Headquarters or retransmitted even in cipher without being paraphrased".[297] Simple rephrasing, such as the use of indirect speech, often proved sufficient to avoid giving away 'cribs' to the enemy, i.e. tools to break British codes. Common rewording read as follows: "reliable source informs us" or "reliable information indicates",[298] but we can imagine that these formulas took numerous forms in order not to compromise the security of the cyphers. On a similar note, the indications regarding the identity of the sender and the addressee were not placed at the beginning or end of the message, but "buried in the main body of the text", so that these wordings would not provide 'cribs', as in Axis codes. In addition, the same message was on no condition to be sent to two different recipients using two different encryption devices, which was one of

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[294] Bletchley Park's Museum.
[295] Letter dated March 24th, 1939: "Handling of Teleprinter Messages out of Normal Working Hours Pre Precautionary Period". NA HW 2/76.
[296] Ratcliff, R.A., *op. cit.*, p. 117.
[297] *Ibid.*, p. 117.
[298] Bletchley Park's Museum.

the greatest cryptologic dangers,[299] as was the repetition of a text in the main body of the message.

As evoked, decrypts of top German cyphers were granted the highest grade of secrecy, 'Ultra', and travelled through their own channels, to the exclusion of lower-ranking information.[300] This was one of the best ways of ensuring that their cracking would remain secret. As R.A. Ratcliff points out: "The Allies were never complacent about the most complex high-grade electromechanical cipher systems, nor did they relax their vigilance over lower-grade systems".[301]

<p style="text-align:center">✳✳✳</p>

The British production and distribution of Ultra revolved around two goals, namely efficiency and security. Strict regulations were drawn to ensure that the Germans should never realize the extent of the intelligence that the Allies had collated. Quite naturally, it was also essential not to draw attention to the work that was carried out at Bletchley Park and in all buildings or facilities linked to Ultra. However, the lengths gone to in order to crack the Germans ciphers and the instances when they were used had direct consequences in the field, and thus constituted one further threat to this intelligence.

At the beginning of the war, officials in London and Bletchley were desperate to make headway in their breaking of top German ciphers. But in order to do so, brains did not suffice, given how complex encryption devices such as the Enigma and the Lorenz were, and soon it appeared that cipher material had to be retrieved from Germany if any substantial progress was to be made. But witnesses to such operations were real threat to Ultra, and the disappearance of an enemy unit which had no strategic value but for its Enigma or other ciphers may arouse the suspicion of the enemy. In addition, one of the most hazardous facets of the whole Ultra operation was the use that commanders in the field made of it. Indeed, they were almost left to themselves and often privileged short-term benefits to the long-term protection of Ultra. Thus on transmitting intelligence to them, Bletchley and the diverse institutions in London had to impress on them the absolute necessity to protect the source of this information by all means. But this was no easy task.

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299 Winterbotham, F.W., *op. cit.*, p. 36.
300 Ratcliff, R.A., *op. cit.*, p. 118.
301 *Ibid.*, p. 164.

IV A dilemma: using the information, while protecting its source for further use

Contrary to what could be inferred from the previous chapters, decrypted messages were not simply transmitted from Bletchley Park to the commanders in the field, in an exclusively one-way process. Codebreaking should not be perceived as a chain of events, but rather as constant interaction between the battlefield and the mansion at GCHQ.

Code cracking started during operations in the battlefield. Crucial materials in this regard were collected in the course of critical military operations. And the knowledge derived from the decoded signals entailed difficult choices in the conduct of the war.

This is a most engrossing aspect of the subject, given that it presents us with a dilemma: the British wanted to make the most of Ultra, yet they always had to keep in mind to be careful not to blow its cover. Indeed they wanted to be able to use it as long as possible without arousing the suspicion of the enemy.

A. The careful gathering of Ultra-related German material (codebooks, etc.): the example of the war at sea

The breaking of Ultra was not confined to the premises of Bletchley Park, far from it. Even though the codebreakers at Station X did their best to crack cipher machines such as Enigma with their brains only, the complexity of these devices made it sometimes impossible for them to decode messages. But this did not mean that there was no hope left, far from it. Indeed, there existed another means of gathering clues to help the codebreakers. Cipher machines were used by German troops in order to communicate with the commanders. Each unit possessed one of these devices. Therefore, when it was not possible to decipher the intercepted signal, one could go to the other end of the chain, namely the place these signals had been sent from in the first place, to examine or collect ciphering devices, codebooks, and other documents of great cryptanalytic value. This was

particularly the case in the war at sea, on several grounds. One of the main ones was naturally that no teleprinter line could link the vessels to the Admiralty, as could be the case on solid ground, so that ciphering machines were required. Furthermore, the hasty fleeing from allegedly-sinking vessels often led to the crew forgetting to destroy materials, which anyway they assumed would sink with everything else. The radio operators of the Kriegsmarine were more disciplined with regard to the rules regarding the use of ciphering machines than the agents of the other German troops, thus depriving the codebreakers of many tricks used to crack the ciphers. Operations were launched in order to gather materials from enemy ships or U-Boats. But, as in every other stage of the handling of Ultra material, care was of the essence. Users of this intelligence had to make sure that this information would still be available at a later stage of the war.

A targeted attack in order to retrieve material should not make the enemy suspicious

Since the veil was first lifted on the Ultra secret in 1974, heroic attempts to retrieve Ultra material have become famous. The 2007 film U-571 contributed to making these attempts famous. Two different scenarii exist, but they actually boil down to the same thing. Either the attack on the enemy vessel was planned, because it had a tactical reason, in addition to retrieving material from Ultra, or the attack was a counter-attack. But at times, German units were assailed merely on the grounds of their intelligence aspect. In both cases, the procedure did not change – a boarding party was sent to collect material from the ship, with a variable knowledge of what it was looking for. Often there was at least one Ultra-indoctrinated agent, but not always. Indeed, these soldiers were more often than not able to recognize codebooks, and they are told to look for something looking like a typewriter.

A number of boarding parties thus captured intelligence material of various consequence during the war. Attacks on U-110 on May 9th 1941 by HMS Bulldog and HMS Aubretia, and on U-559 on October 30th 1942, by HMS Petard, significantly contributed to the success of Bletchley Park. Other attacks on Polaris, Krebs, München, Lauenberg, and U 205 also played a crucial role in the intelligence war. But the Allies had to be careful not to arouse suspicion because of the moves of their troops.

Dealing with witnesses

The task of boarding an enemy boat or submarine is always hazardous, but the context of the intelligence war made it a double-edged sword. The security of Ultra was at risk again, in that there inevitably were witnesses and people in the know. These boil down to four major groups – the boarding party, the other Allied sailors present on the field, the potential prisoners of war, and Axis vessels that were potentially present in the surroundings.

The extent of the awareness of the boarding parties with respect to the object of their assignment diverged significantly according to the operation. It can come as a surprise that they most often knew very little. Thus, Lieutenant Commander De Balme only received the order to "seize all books and anything that looked important".[302] Similarly, the number of people taking part in the retrieving of material varied. The original party leaving for U-110 only consisted of nine people, including their leader Sub-Lieutenant D.E. Balme R.N.[303] They were later joined by two other parties.[304]

Exchanges between the members of boarding parties and the rest of the crew could bring about leaks, yet they could not be avoided. Allied vessels were often numerous in the course of these actions, and were likely to witness the sailors sneaking onto the boat. The counter-attack on U-110 is revealing. In addition to Bulldog, at least two ships were closely engaged in the actions on U-110. The *Broadway* and the *Corvette* were in charge of the protection of the boarding party against potential enemy attacks.[305] However, the search of U-110 was not as conspicuous as could be imagined. Indeed, the *Broadway* and the *Corvette* did not only ensure the safety of the mission, they also contributed to hiding the expedition from the rest of the convoy. Besides, due to rather adverse weather conditions the visibility was quite poor, and none of the other boats on the field could witness the gathering of cipher materials; it was therefore believed that they must have put the numerous shots that they heard down to the mere sinking of the U-boat, and not its

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[302] Note "Capture of U 110" from the Senior Officer, 3rd. Escort Group, HMS Bulldog to the Captain (D) Greenock, dated 10th May 1941, in NA/ ADM/11133.
[303] Report "Boarding Primrose" by Sub Lieutenant D.E. Balme dated 11th May, 194 in NA/ ADM 1/11133.
[304] *Ibid.*
[305] Collections of the Imperial War Museum, 12742 04/2/1, Private Papers of C.J. Fairrie.

capture.[306] Similarly, no less that three ships were involved in the attacks aimed at U-559: *HMS Dulverton*, *HMS Petard*, and *HMS Hurworth*.[307]

When an enemy boat or submarine was sunk, its occupants took refuge in Allied boats. It was feared that these prisoners of war should see the boarding party climbing on board the vessel, or should see them coming back carrying with them precious documents. When the *Corvette* rescued German survivors from U-110, they were brought into contact with people rescued from a merchant-ship,[308] thus increasing the number of people aware of the onslaught on U-110 who could surmise its outcome. It should be remembered that even the mere sinking of U-110 was supposed to remain secret. The ever-increasing number of prisoners of war quite naturally constituted a security risk. Twenty-two prisoners were taken from the *Lauenberg,*[309] while between fifteen and twenty sailors from U-110 were recovered on the starboard side of *HMS Aubretia*,[310] and the rest were hauled over on the port side; thirty-five men from U-205 were rescued by a motor cutter.[311]   In addition, when an offensive involved several enemy boats, there was a risk that one of the enemy should see the boarding party and report it to the Admiralty. This was especially the case when German troops were gathered, such as in 'wolf packs'.[312] So much so that when rescuing German sailors or submariners, British crews were careful to prevent them from watching the gathering of documents: "Immense pains were taken to ensure that the prisoners saw no evidence of a 'pinch'".[313] The prisoners of war who had been rescued from U-110 were immediately led inside the *Aubretia.* The result is manifest: it is clear from the interrogations of the four officers and the first lieutenant that they were convinced that U-110 had sunk very quickly after they abandoned it.[314]

But there was more to it than that. The return of the boarding party did not imply that there was no longer a security risk. Once a boat or a submarine was captured, it was, if its condition allowed it, towed back to one of the British posts, instead of being merely

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[306]Note from the Senior Officer, 3rd. Escort Group, HMS Bulldog to the Captain (D) Greenock, dated 10th May 1941. In NA/ ADM 1/11133.

[307]Folder by the Commander in Chief Mediterranean, dated 9th December, 1942. In NA/ ADM 1/14256.

[308]Collections of the Imperial War Museum, 12742 04/2/1, Private Papers of C.J. Fairrie.

[309] Sebag-Montefiore, H., *op. cit.*, p 148.

[310] Account by Newman, dated May 11th, 1941. In NA/ ADM 1/11133.

[311]Account of the rescue of sailors from U-205, undated, unsigned. In NA/ ADM 1/14342.

[312] This term is commonly used by historians to refer to the German strategy of gathering units in the Battle of the Atlantic.

[313] Collections of the Imperial War Museum, Private Papers of Lieutenant Commander D.E. Balme, 11874/02/2/1, p. 13.

[314] Note "Interrogation of Prisoners from U 110" from the Commander (D) 3rd Escort Group to the Captain D. Greenock, dated 13th May 1941. In NA/ ADM 1/11133.

destroyed. But this exposed it to many dangers, which explains why the *Lauenberg* was simply sunk.[315] Indeed other U-boats could once again be spying, as was feared regarding U-205.[316] A U-boat could be lurking, ready to attack. An earlier case had made much of an impact on the careful attitude of the Admiralty; namely the time when *Bulldog*, with an Enigma on board, towed U-110 before it sunk, it was escorted by *Broadway* which was heavily damaged – the groups proceeded slowly, at the speed of five knots;[317] back-up was not expected to arrive very soon. The crew was very worried about a potential attack, and the consequent revelation that U-110 had been captured, with its Enigma discovered and on its way to Bletchley Park. The arrival at the dockyard constituted a danger as well, as additional people were bound to witness the captured vessels, and to divulge compromising information. *Polaris* was towed back to the busiest zone of Scapa Flow, where the British fleet was stationed. This was a major security breach. This mistake was not repeated when another ship, *München* was brought to the British base: it was led to a very isolated spot.[318]

Secrecy in communications

This vigilant attitude regarding secrecy was instilled through the training and the instructions given to the boarding party and to everyone 'in the know', whatever the extent of their knowledge. Photographs of *Polaris* were taken, and orders were given to ensure that none of them left 'REPULSE' "until further instructions"- especially until decision was made whether the capture of the trawler should be made the object of an announcement or not.[319] Admiral Burrough's command concerning the capture of Lauenberg speaks for itself: "The utmost secrecy must be observed with regard to the operation we have completed. If questioned, ratings should not commit themselves beyond saying that an armed German trawler was met and sunk, the crew being taken prisoner".[320] In their reports, the crew of the boats and the Admiralty were non-committal. No matter if their messages were only conveyed in codes or ciphers and were always classified as at least 'secret' messages. The narrative submitted by U-110's boarding party states that they

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[315] Kahn, D., *Seizing the Enigma*. Souvenir, London, 1991, p.181.
[316] Sebag-Montefiore, H., *op. cit.*, p.230.
[317] Collections of the Imperial War Museum, 12742 04/2/1 Private Papers of C.J. Fairrie.
[318] Sebag-Montefiore, H., *op. cit.*, p. 129-130.
[319] Tel 2359/28 dated April 28th, 1940. In NA/ ADM 1/10603. Also see appendix 7.
[320] Sebag-Montefiore, H., *op. cit.*, p. 148.

had gathered "books, charts, and documents".[321] Significantly, no ciphering machine is mentioned. The boarding of U-559 was intended in order "to obtain information".[322] The fact that U-110 had at first not been sunk, and above all that she had been captured,[323] were kept strictly secret, as the orders from the admiralty illustrate;[324] the signal sent to the Admiralty only read "Primrose in tow, considers petals to be of great value",[325] 'Primrose' being the codename for the operation on U-110.

C.J. Fairrie's diary is revealing. To a first text present in his notebook he later (most likely after the war) added that the signal was of course coded, a further indication regarding all the safety measures surrounding the gathering of Ultra-related material. No further signal was sent to avoid the ship's position's being detected through wireless traffic analysis, so much so that when he was trusted with the task of writing down the official naval history, Captain Roskilll simply could not find any mention of the capture of U-110.[326] The recommendations for decoration were particularly sensitive – indeed a "description of the services in respect of which recommendation is made" was required – but no compromising detail could be divulged. As a further precaution, documents regarding decoration were labelled as secret. The forms for Fasson and Grazier, who lost their lives while searching U-559, only mention the gathering of "books and instruments" for the first, and for the second, praise his "eagerness to get vital information".[327]

It can seem unlikely that a boat or U-boat's capture should possibly be kept secret from the German headquarters. Indeed, as soon as a vessel was located or came under attack, the German units – and any unit from any other country – tried to signal back to their commanders to make them aware of the threat they were facing. However, these signals could themselves constitute a menace if their origin could be triangulated through traffic analysis. Sometimes the attack or the fear that the vessel was bound to sink was so sudden or so strong that the signal operators did not have time to send a message. The operator of Lauenberg, in the course of his interrogation, acknowledged that he had tried to send a message stating that he was being attacked, but that he received no confirmation of

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[321] Note from the Senior Officer, 3rd. Escort Group, HMS Bulldog to the Captain (D) Greenock, dated 10th May 1941. In NA/ ADM 1/ 11133

[322] Recommendations for decorations. In NA/ ADM 1/ 14256.

[323] See appendix 8.

[324] Collections of the Imperial War Museum, Private Papers of V. Funge-Smith, 4663 81/49/1. See appendix.

[325] Collections of the Imperial War Museum, 12742 04/2/1, Private Papers of C.J. Fairrie.

[326] Collections of the Imperial War Museum, Private Papers of Lieutenant Commander D.E. Balme, 11874/02/2/1, p.7.

[327] Fasson's and Grazier's "Recommendation for Decoration or Mention in Despatches", both dated November 5th, 1942. In NA/ ADM 1/14526

his message getting though.[328] In other cases, such as in the onslaught on *München*, the boarding party itself stopped the radio operator from sending a signal relating that it was being boarded, therefore he never had the chance to send the message that he was typing.

As a matter of fact, it was not that uncommon for the German admiralty to lose contact with its units and to ignore what had become of one of them: whether it had been captured, sunk, what had become of the crew, and what intelligence the enemy had potentially collected. Radio units were often damaged during battles. All these elements cast a veil on the knowledge that the enemy had of the fate of his troops, and on the possible intelligence gathered by the Allies. When the first revelations were made, in the middle of the 1970s, Dönitz never believed that U-110 had been captured, and that Enigma traffic was being read by the enemy – and no one could ever convince him until he died.[329]

B. Required conditions for using Ultra

A brief outline

By no means could the Allies betray to the Germans that their master codes were being monitored. However, if the elaborate system designed to produce Ultra was to be pertinent, this intelligence had to be acted upon; it could influence the balance of power in the war, and a successful outcome for the British was at stake. The use of these pieces of information required utmost precautions, so that rules were laid down to ensure that no slip would occur.

Wing Commander F.W. Winterbotham once again played a central part in drafting these regulations, due to his involvement in the establishment of the Special Liaison Units, the organ for distributing this knowledge to the senior officers. In addition to the physical and cryptologic safety of the details of the enemy's situation and plans, no information could be used if there was no secondary source that could account for its origin. There was therefore a need for a notional source to be associated with every piece of intelligence that was resorted to.

There were two different cases giving rise to the invention of secondary sources, which are often confused in history books on the subject. First of all, because one of the top priorities when it came to Ultra was to keep the number of officers to a minimum,

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[328] Sebag-Montefiore, *op. cit.*, p 148.
[329] Collections of the Imperial War Museum, Private Papers of Lieutenant Commander D.E. Balme, 11874/02/2/1, p. 9.

many prominent army leaders could not be told of the existence of Ultra. However, they needed to be given some details of the situation and plans of enemy troops. So that, at Bletchley, 'watchkeepers' were in charge of attaching a notional source to each of the pieces of information which would be transmitted to unindoctrinated officers.[330] Secondly, "notional sources" were created to deceive the Germans regarding the origin of the Allied information. However, in a few instances, the notional source 'leaked' for the 'benefice' of the enemy was the same as that communicated to the generals.

'Boniface' or the need for a notional source

Something had to account for the success of Allied troops, particularly for their stunning ability to locate enemy units, but also to identify their weaknesses and establish brilliant strategies that allowed them to resist or even defeat hostile sections even when outnumbered.

It was often claimed that precious titbits of information had been carelessly thrown in the waste bin by the enemy and collected by Allied agents. Fictitious spies were also very much favoured, whether they were said to be moles among the Axis or Allied operatives. British officials were very partial to "Boniface", allegedly a high-ranking German traitor working in the highest spheres of the German command.[331] This is best exemplified by the note attached to intelligence Colonel Strong sent to Mockler-Ferryman from the Home Forces: "This information is from Boniface".[332] So much so that 'Boniface' became a codename for Ultra among a few indoctrinated people, notably Churchill. Reference to it was however discontinued at the time of the Torch landings, i.e. the Allied landings on the Western coast of North Africa, in late 1942, even if some continued to use it afterwards.[333] Other common cover stories ranged from the interrogation of prisoners of war[334] to information provided by "a secret German left-wing organization".[335] All these cover stories were at the origin of the aliases used even in secure locations, such as BP, to refer to Ultra. Thus Winterbotham in a number of memos evokes Agent OL (Orange Leonard) when discussing Ultra with colleagues.[336]

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[330] Hinsley, F.H., Stripp, A., *op. cit.*, p. 21.
[331] Ratcliff, R.A., *op. cit.*, p. 4.
[332] Lewin, R., *op. cit.*, p. 92.
[333] Ratcliff, R.A., *op. cit.*, pp.113-114.
[334] Lewin, R., *op. cit.*, p. 64.
[335] Ratcliff, R.A., *op. cit.*, p. 112.
[336] See, for example, NA HW 14/18 HW14/18, Memo dated August 8th, 1931.

This was made all the more possible by Hitler's acute paranoia that he was surrounded by traitors. Furthermore, R.A Ratcliff relates the word of an U.S. intelligence officer accounting for the credulity of the Germans: "there is no limit to what people will believe about the Secret Service and… even high officials read spy stories".[337] In addition, technologies were often presented as the means through which the Allies knew the whereabouts of enemy troops, most notably direction finding (D/F) but also radar and sonar.[338]

However, if these sources were to have any usefulness in covering the actual origin of the Allied intelligence, references to them had to 'accidentally' fall into the hands of the enemy, often by the recourse to low-grade ciphers known to be cracked by the German B-Dienst (Station X's counterpart). But this was not always possible.

One of the most common ways of providing a secondary source which would explain suspicious Allied moves and successes was therefore to organize for air reconnaissance patrols to take place in the vicinity of the place where the unit was expected, thanks to Ultra signals. R.A. Ratcliff provides further details on the subject: it was crucial that the sudden appearance of these planes should not give the enemy to think that it could not be mere coincidence, which would render the use of air reconnaissance purposeless. Therefore, routine air patrols were organized in the days preceding the expected presence of the unit, so that its sighting should not seem suspicious when it eventually took place. It was then crucial that the aircraft should have a visual image of the troop that was about to come under attack, but also, and above all, that the unit should spot the plane as well, which would account for the onslaught that was about to befall them. This procedure was common in North Africa in particular, but not only.[339] This most notably took place shortly before the battle of Matapan, with a flying boat carrying out air reconnaissance, and inducing the Italians to change their plans, which served the troops of Admiral Cunningham better in the wake of the famous victory of Matapan.[340] On several occasions, pilots went on what can only be described as 'suicide missions' to provide the precious secondary source for the attack of crucial units, when they were fully aware that they were bound to be shot down should they take up their reconnaissance mission.

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[337] Ratcliff, R.A., *op. cit.*, p. 114.
[338] *Ibid.*, p. 115.
[339] *Ibid.*, p. 116.
[340] Winterbotham, F.W., *op. cit.*, p. 84.

For the same reasons, spies were kept in their positions, even if the information they provided was always eyed with more suspicion than the intelligence derived from intercepts. Their absence, even if they were supposed to remain in disguise and unnoticed, could have intrigued the enemy. In addition, they could also occasionally help in drawing the bigger picture of the plans of the enemy. In 1941-1942, Rommel noticed that all convoys were being intercepted by the British, to the almost exact exception of those conveying food (they had less strategic value to the Allies). This observation made him suspicious. This anxiety was perceptible in Ultra decrypts, and pushed Bletchley agents to send a message to an imaginary agent in Lisbon in a low-grade code they knew the Germans could read, thanking him for his reports and granting him a pay rise.[341]

C. The limits of Ultra

The security of Ultra before everything

Even if it was necessary to provide a secondary source for all Ultra intelligence, the systematic exploitation of the information, even with a notional source attached to it, would sooner or later have exposed the breaking of Ultra to the Germans. This problem was all the more vivid given that machine ciphers, especially the Enigma, were never broken once and for all: every day the order of the wheels and various other settings were changed, requiring time before the signals could be read again, if indeed they were. But above all, the introduction of a new wheel, or other substantial changes, could bring down the losses among enemy units, and obviously indicate to the Germans that there codes were being read.

As evoked, the aim of Special Liaison Units was two-fold and closely linked to the wish to keep Ultra secret: first, these handpicked sections were in charge of the secure transmission of titbits of information to the commanders, but mostly they had to ensure that careful use was made of the intelligence. No matter that the SLO was usually a very young and junior officer, he was allowed to 'override' a commander who was determined to use the information without enough precaution.[342] As S.F. Burley explains: "there was no room for mistakes either in the physical handling of the material or personal handling of

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[341] Enever, T, *op. cit.*, p. 27.
[342] Ratcliff, R.A., *op. cit*., p. 122.

the generals, and more especially the few more junior officers who made up the generals's Intelligence staff".[343]

The instructions of the SLUs were the following:

Momentary tactical advantage is not sufficient ground for taking any risk or compromising the source. No action may be taken against specific sea or land targets revealed by Ultra unless appropriate air reconnaissance or other suitable camouflage measures have also been taken. If (…) the enemy were given cause to believe that his communications are not adequately safe-guarded against interception, he would effect changes which would deprive us of knowledge of his operations on all fronts.[344]

Any failure on the part of Ultra recipients to abide by these rules was notified to officials in Britain.[345]

First and foremost, "the SLU's primary responsibility was not the goals or operations of local commands but the security of Ultra intelligence".[346] The units did not come under the authority of the generals to which they were attached but under that of the SIS in London, and this allowed them to carry out their mission fully.

The myth of Coventry and the limitations of safeguarding Ultra

The decision not to reveal to some generals the Ultra secret to keep the number of indoctrinated people to a minimum had natural consequences. The stunningly unhindered success of Germany against France and Belgium in the early stage of the war exemplifies this problem. Among other reasons, the appropriate Commander-in-Chief was not trusted with the contents of all decrypts, and he was not told that the information he was given was absolutely reliable. He did not know the existence of Ultra.[347]

A parallel can be drawn with the defeat in Crete in May 1941, on which occasion Freyberg, who was in charge of the armed forces, did not realize how trustworthy the intelligence he received was,[348] and therefore did not take all necessary measures.[349] Similar cases abound. Welchman, who played a prominent role in Bletchley and is the author of *The Hut 6 Story*, reports a rumour to the effect that an RAF duty officer was receiving almost every day details of the upcoming enemy plans, but did not know who his

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[343] Burley S. F. Photocopied typescript account (251pp) written by himself and others concerning the work of the Special Liaison Units, p. 2. Imperial War Museum Collection.
[344] Smith, M., *op. cit.*, p. 85
[345] Ratcliff, R.A., *op. cit.*, p. 122.
[346] *Ibid.*, p. 122.
[347] Sebag-Montefiore, H., *op. cit.*, p. 82.
[348] Interview with Professor Sabin of King's College. He is in charge of a course entitled: World War II in Europe.
[349] Welchman, G., *op. cit.*, p. 279.

mysterious phone informer was, and he was astonished at his accuracy. Welchman concludes: "Evidently, no one had thought of telling the duty officer that he could trust, and act on, these reports".[350]

The rules defining what Ultra could be used, led on numerous occasions to defer or even to preclude any action based on it. Thus, during the *Blitz* in Britain, on the instances when Ultra specified which cities or locations would be targeted, no countermeasure (i.e. enforcement of Air Raid Precautions) was allowed before the radio beams guiding the German aircraft came into operation, thus providing a source accounting for steps taken by the Allies. This also led to activating defences in other cities that were "along the line of the … beams", even when it was known that they would remain untouched.[351] Similarly, despite all the intelligence that the Navy possessed, it could not take advantage of it recklessly and systematically to destroy U-Boats and other warships, as the sudden surge in losses would not fail to arouse the suspicion of the enemy.

Beyond these two pragmatic limits to the use that Ultra could be put, we need to be aware that these were no simple decisions for Whitehall and the Chiefs of Staff to make: delaying the setting up of the defence forces, or even the attack of hostile units, was often bound to result in the loss of numerous lives.

This is best exemplified by the myth, as it is often referred to, surrounding the sacrifice of Coventry on the night of 14-15th November 1940. Many protagonists and historians, among whom the renowned F.W. Winterbotham and Anthony Cave-Brown, claim that Churchill knew that severe bombings were going to strike the city of Coventry, but that he had no choice but to remain passive in order not to give away the fact that Germany's highest ciphers were being read. The names of the cities at threat were usually in codenames. However, Winterbotham asserts that Coventry was an exception:

> (…) at about 3 p.m. on November the fourteenth someone must have made a slip-up and instead of a city with a code name, Coventry was spelt out (…) I had little doubt there would be reference back to the Prime Minister for a decision as to what to do and it would be an agonizing decision to have to make. There were perhaps, four or five hours before the attack would arrive. (…) if, for any reason, the raid was postponed by weather or for some other reason, we should have put the source of our information at risk to no purpose. (…)In the end, it was decided only to alert the services (…)[352]

Furthermore, a wave of panic was to be feared. Had the information been acted upon, steps would have had to be taken to conceal the origin of the information. Winterbotham

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[350] *Ibid.*, p. 290.
[351] Ratcliff, R.A., *op. cit.*, p. 113.
[352] F.W. Winterbotham, *op. cit.*, p. 83.

indicates that according to official history, a few people in the Navy even had "two days' notice of this raid". He claims the situation was similar regarding the fire of London in December 1940, even though he suggests that less counter-measures could have been taken, and that the city was better prepared, as it had faced numerous air raids before Hitler decided to extend the operation to other British cities.

No longer than four years after the publication of *The Ultra Secret* in 1974, Ronald Lewin published *Ultra Goes to War*, in which he directly challenged such assertions that Coventry had been sacrificed. The Chiefs of Staff knew that massive raids were scheduled, codenamed 'Moonlight Sonata'. They however ignored the exact location of the targets, and the codename used, 'Korn' did not give any clue to intelligence officials. Prisoners of war had revealed that Coventry was threatened, but no heed was paid to them. According to the author, neither Professor Jones nor Churchill – this was confirmed by his Private Secretary John Martin[353] – knew where the attack was going to take place. Churchill assumed London was targeted, which led him to head back to the city in order to suffer through the Blitz along with his fellow citizens and to disperse his secretariat away from Whitehall which was supposedly exposed. Claims were voiced on the 17th stating that the Air Staff knew that 'Korn' was Coventry. They are dismissed as "hindsight", and so is Winterbotham's theory. This standpoint was backed by Ralph Bennett, in 1994, who maintains that this is nothing but a myth, as they only knew that the raid was aimed at cities in "the Midlands".[354] For Lewin, the city was "twice crucified", once during the bombings and, because the "allegation [of a sacrifice] is totally untrue, it mocks those who died or suffered".[355]

Mistakes in the use of Ultra

Against all odds, one of the most prejudicial recourses to Ultra was made by a fervent advocate of careful use of this intelligence, namely Winston Churchill himself. In August 1941, decrypts related exterminations carried out by the SS on the Eastern front, especially on Jews, and the Prime Minister was appalled by the information that he received daily on the issue. So much so that, despite the advice of intelligence officials, he gave a speech on the BBC on August 24th, 1941, during which he disclosed these Nazi crimes. His words read as follows: "scores of thousands, literally scores of thousands of

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[353] Lewin, R., *op. cit.*, p. 102.
[354] Bennett, R., *op. cit.,* note pp. 62-63.
[355] Lewin, R., *op. cit.*, pp. 99-103.

executions in cold blood are being perpetrated by the German police groups upon the Russian patriots who defend their native soil".[356] The inevitable happened. On hearing Churchill's speech, the people in charge of the police signals estimated that the key to the said codes must have been broken, and decided that police signals should no longer be radioed but sent by courier.[357] Fortunately, these were hand-ciphers, and rather simple ones, so that the breaking of the Enigma or Lorenz ciphering machines was not compromised, and neither was their breathtaking output. Nonetheless, after that episode, the Allies were no longer able to read these revealing messages. Given their importance, these decrypts were part of the Ultra intelligence, and this was precisely the type of accident that the British officials wanted to avoid at all costs. Furthermore, details regarding these massacres had also been sent via the SS Enigma, so that Churchill's revelations might have had even wider consequences.[358] (Churchill had dangerously but rightly gambled on the fact that the Germans would incriminate the police handciphers and not the machine ones, which were much more complex.)

A similar instance of a hazardous communication of this intelligence happened when Ultra revealed that Rommel had become ill. Among the few Ultra-indoctrinated agents this accident was considered as very trivial and launched a rumour in Britain. This could have had unfortunate consequences, and so the diffusion of such "gossipy" items was thereafter limited to specially trained recipients.

Admiral Cunningham was always very careful in his use of Ultra, and always sent reconnaissance troops, which provided a secondary source, before attacking an enemy troop out of the blue. The same was true of Air Vice Marshal Sir Keith Park, who was the Air Officer commanding Malta. They always made sure that the vehicles involved in air reconnaissance were seen by the enemy before launching an attack. However, on one occasion, there was a very dense fog which made it impossible for an aircraft to spot and be spotted by an enemy.[359] Nonetheless, it was very important that the convoys should be sunk, which they were. This raised Kesselring's suspicion, but Winterbotham had a message sent to a notional agent, thanking him for providing this crucial intelligence and granting him a promotion.

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[356] Statement made by Churchill on August 24th, 1941. Quoted in an episode of the BBC4 'What if' series, by Prof. Christopher Andrew, *op. cit.*
[357] *Ibid.* A few additional details are provided in Michael Smith's book: Smith, M., *op. cit.*, pp. 81-82.
[358] *Ibid.*
[359] Winterbotham, F.W., *op. cit.*, p. 104-105.

The SLUs were the best way of ensuring that only a careful use of Ultra should take place. But at the end of the day it appears that, ironically enough, the complexity of the codes and the delay in breaking ciphers often proved useful as far as the safeguarding of Ultra was concerned.

<p style="text-align:center">✱✱✱</p>

The achievements at Bletchley Park should not lead us to forget that it was also closely linked with all too real situations in the battlefield, and that if this source of knowledge should disappear, dramatic consequences were to be expected.[360] The actual use made of Ultra was no exception to the golden rule than its existence was under no circumstances to be leaked to the enemy. Very strict regulations were drawn and precaution was of the essence. As in the case of the production and distribution of this intelligence, it was not to be acted upon if this could entail the slightest threat to the continuous availability of this information. However, few breaches of the protocol defining how to resort to Ultra took place. Again, it appears that reactivity proved an asset in countering any potentially damaging action, and the crucial part of Ultra in the Allied war strategy made its long-term availability an end that could justify almost any means – and the result was blatant: Hitler never suspected that his top ciphers, those of the Enigma machines in particular, were being monitored.

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[360] See appendix 9 for the British poster campaign against careless talks.

<u>Conclusion</u>

On May 25th, 1945, at Winston Churchill's behest, F.W. Winterbotham sent a message to the Allied commanders telling them "not to divulge the nature or the source of the information they had received from it [Ultra], in order that there might be neither damage to the future operations of the Secret Service nor any cause for our enemies to blame it for their defeat".[361] Similar instructions were issued to the rest of the personnel which had been associated with Ultra.

A few people were left in Bletchley, and all the other crucial locations in Britain, and they were tasked with removing evidence of the work that had been carried out. This involved disposing of all documents pointing to the war-time activities of Bletchley, most of which were simply burnt in boiling rooms. Some of the files were sent to Eastcote, a wartime 'Bombe' section where GCHQ was relocated at the end of the war. Except for a few deciphering machines such as Colossus computers and 'Bombes' that were removed to Eastcote, and allegedly to the new location of GCHQ in Cheltenham in 1951, all machines were destroyed, with meticulousness. Thus:

> I remember having to dismantle the Bombers bit by bit, wire by wire, screw by screw. We sat at tables with screwdrivers taking out all the wire contact brushes. It had been a sin to drop a drum but now we were allowed to roll one down the floor of the hut.[362]

The reasons for this are several-fold. The end of the Second World War did not bring with it world peace. Rising tensions could be felt, in particular with regard to the USSR, which would evolve into the Cold War. Whitehall and the Chiefs of Staff did not want the users of the Enigma machine or Enigma-based ciphering devices to realize that the breaks had mainly been possible because of carelessness on the part of the operators that provided 'cribs' to the codebreakers. At the end of the war, Enigma machines had been given to countries the British were suspicious of, and in the last 1970s, several hundreds of them were still in use.[363] Moreover, many commanders in the field were concerned that revelations that they had been in possession of so many details of the enemy plans would in a way tarnish their reputation. Finally, the revelations that the Allies had read the German ciphers during a great part of the war could have been used by the former enemies to account for their defeat.

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[361] F.W. Winterbotham, *op. cit.*, p. 17.
[362] Paterson, M., *Voices of the Codebreakers*, Newton Abbot, David & Charles, 2008, p. 285.
[363] West, N., *op. cit.*, pp.20-21.

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In 1967, W. Kozaczuk published a small booklet, *Bitwa o tajemnice*, presenting the first breaks by the Poles in the early 1930s. It is revealing that it was only perceived as "science fiction" by the West. In 1972, the first disclosure regarding the existence of Ultra took place, in the form of a book published by Gustave Bertrand, a senior French intelligence officer, and entitled *Enigma ou la plus grande énigme de la guerre 1939-1945* (*Enigma or the Biggest Enigma of the War*). However, the book was not translated into English, and the information that it contained was not publicized in England. Besides, the book dealt above all with the Polish and the French contribution to the breaking of German ciphers. It was only in 1974 that the story of Ultra and the extent of its role in the conduct of the war were brought to public attention through *The Ultra Secre*t by F.W. Winterbotham, the very man who had seen to the security of Ultra during the war and had urged all people to keep the secret at the end of the war. GCHQ was reassured when it saw that no technical or cryptanalytic detail was included – which is why the publication was possible. From then on, tongues started to loosen regarding the existence of Ultra during the war, with bans lifted starting from 1975. On January 12th, 1978, David Owen, the then Foreign Secretary, announced that people who had been involved with the "Enigma material" during World War II were now allowed to acknowledge that they had done so. For the first time, they could reveal to their family what they had been doing during the war.

However, no matter if it was now allowed to evoke the activities at Bletchley and in its outstations, many still felt reluctant to describe the works they had carried out. The Official Secret Acts they signed when they joined specified that they were bound to silence until they died, and many felt uneasy about breaking their oath. Some did not reveal their war-time experience until years later after the ban on doing so was removed. Among them, Geoffrey Pidgeon told me that he does not recall broaching the subject with his wife and his family circle until 1995, at a time when newspapers suggested that those who had been involved in the work on Ultra should write an account of their experience and send it to the editors. He had known his wife since his time in Whaddon and they had been married for forty-seven years, but details of the war were secret matters they did not discuss, and they had therefore kept away from the subject. In his own words: "it simply did not arise".[364] He then went on to write two books about the activities at Whaddon and the dissemination of Ultra.

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[364] Geoffrey Pidgeon, in an e-mail dated June 9th, 2009.

It is noteworthy that a few documents are still classified, notably those related to mathematical issues – or more generally scientific ones. Some of the files I tried to access at the archives were still closed or retained, for instance the information contained in HW 40/87, as it deals with the British Typex cipher machine, and probably includes technical details. GCHQ sees to it that no delicate intelligence be released. People wishing to publish works on the former activities relating to Ultra have to contact the Ministry of Defence in order to be granted the authorization to do so. Some people are simply denied it, in particular those who were involved in the codebreaking itself.

This is best exemplified by the fact that Gordon Welchman, who played a central role in establishing Hut 6 and was awarded an OBE for the contribution he made, lost his security clearance after publishing *The Hut Six Story* in 1982, and only a couple of months before his death in 1985 was accused of "direct damage to security" and was under threat of prosecution and even imprisonment.

∗   ∗   ∗

Codes have always been crucial components in conflicts and wars. Word War II is no exception to this rule. The Germans thought they had developed an impenetrable ciphering device that allowed the German High Command to communicate with its troops. However, World War II clearly gave wider scope to the use of codes and ciphers, thanks to the tremendous improvement in radio technology and the creation of machine ciphers. This would prove an incredible tool in the hands of the British, who managed to monitor a good share of the Allied communications, without the Germans ever realizing it.

What is most surprising is that the scheme that had been set up to intercept, break and distribute German messages involved more than ten thousand people. Given the high figure of the number of employees and their dissemination throughout the world, it is simply astounding that no leak ever occurred. This has to be put down to numerous factors: first of all, drastic measures surrounded the selection of personnel, and a constant stress was put on the importance of keeping the secret – a parallel can be drawn with the issue of the extent of the communication of Ultra to the Allies. Additional security consisted in only revealing to employees what they absolutely *needed* to know, in a very compartmentalized environment. Physical protection was also ensured to both the premises

associated with Ultra and the Allied communications – the British were all too aware of the risks involved in radio traffic. No matter what their ranks were, officers also had to abide by the rules defining the use that could be made of Ultra. At all these stages, a balance had to be found between a quest for efficiency and payoff in the codebreaking operation, and the absolute need for safeguarding Ultra for later use. Security often prevailed, but officials knew how to adapt and were always prompt to do so.

Above all, as has been evoked several times, Britain was a nation at war. In 1940, the invasion of Britain had been for a time a likely scenario. London, and then the rest of Britain suffered regular bombings by German aircraft. Many men were in the frontline. Last but not least, rationing was the daily lot of all families. This explains why the people who had been selected to work for the Secret Intelligence Service did not think of turning down the offer, and how dedicated they were to their occupation. A sense of the importance of their work was instilled in all employees, whatever the extent of their knowledge, and was a further incentive to 'keep mum'. An *esprit de corps* pervaded Bletchley and other Ultra-related locations in Britain. A number of them had the feeling that they belonged to an *élite* working for the well-being of the country, which explains the sacrifices they were ready to make, and their ability to keep the secret. More generally, and not only in the secret services, but also in the army, no one would think of asking questions, and they confined themselves to doing their bit in the spirit of the war effort in general. This was also true of the relatives of people working in connection with Ultra.

Churchill had been at first impatient to use Ultra, and felt the regulations surrounding it were hindrance. But he very quickly rallied to these rules and became one of the most fervent protectors of Ultra, his "most secret source", and thanked the people at Bletchley saying that they were "the geese that laid the golden eggs and never cackled".[365]

Another reason why Ultra was a guarded secret from the Germans did not stem from the extraordinary measures taken by the British, but from a lack of sufficiently trained German spies – a question which would require a separate study entirely. Above all the Abwehr, the German intelligence organization, suffered from the absence of a satisfying network of German agents for spying on the British codebreaking operations – as opposed to the Russians, who, as we have seen, succeeded in having moles at the highest ranks of the hierarchy of the British secret services. The Germans, and Hitler in particular, were so concerned that a traitor might be in their midst that they did not

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[365] Quoted in an episode of the BBC4 'What if' series, by Prof. Christopher Andrew, *op. cit.* This phrase is also the subtitle of Marion Hill's work, *Bletchley Park People* (Hill, M., *op. cit.*).

seriously question the security of the Enigma and of their other top ciphers. Similarly, they always tended to attribute any leak of information to their Italian Allies, whom they did not trust. At the end of the day, small leaks only occurred *inside* Britain, but they had no damaging consequences.
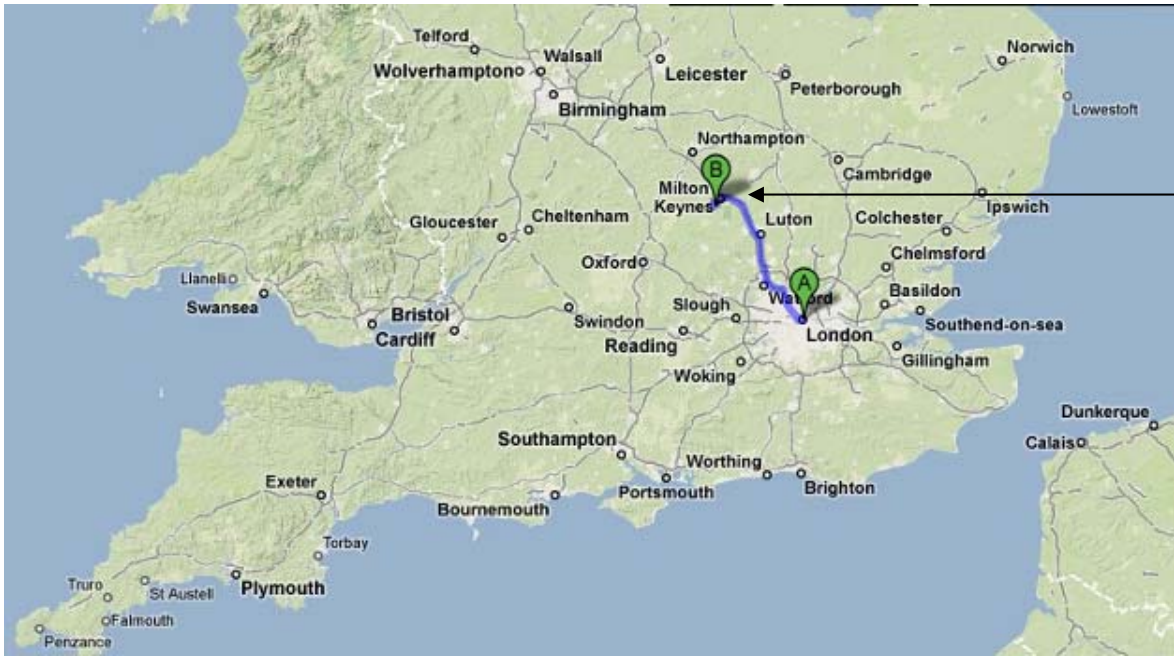
Ironically, it was a coded message, and a simple one, that spelt the downfall of the Axis. The verses of "Les longs sanglots des violons de l'automne" by Paul Verlaine, which were read on the BBC in 1944, was the convention the Allies had agreed on to announce D-Day landings to Resistance fighters in France.

The silence surrounding the existence of Ultra in the post-war era contrasted quite significantly with the more loquacious attitude of the Americans, especially regarding their 'Magic' intelligence derived from Japanese codes. This led to a mistaken assertion by the general public that the American codebreaking operations were much more developed than the British one. This discretion on the part of the British is best exemplified by how they hid for a very long time the invention of 'Colossus': this machine, which helped break the Lorenz cipher, was one of the most brilliant inventions of Bletchley, and the first computer ever to be created. Yet its place in the history of science has been considerably underplayed. This epitomizes how little of the entire history of the people involved in the interception, codebreaking and transmission of Ultra during World War II is known. An Enigma reunion weekend is planned at Bletchley Park on 5th and 6th September 2009, where a number of Ultra veterans will be in attendance. Thus they endeavour to rewrite their part of the history of World War II, for it to be as exact as possible. Only then can the dedication and sacrifice of the people who were associated with Ultra eventually be known.
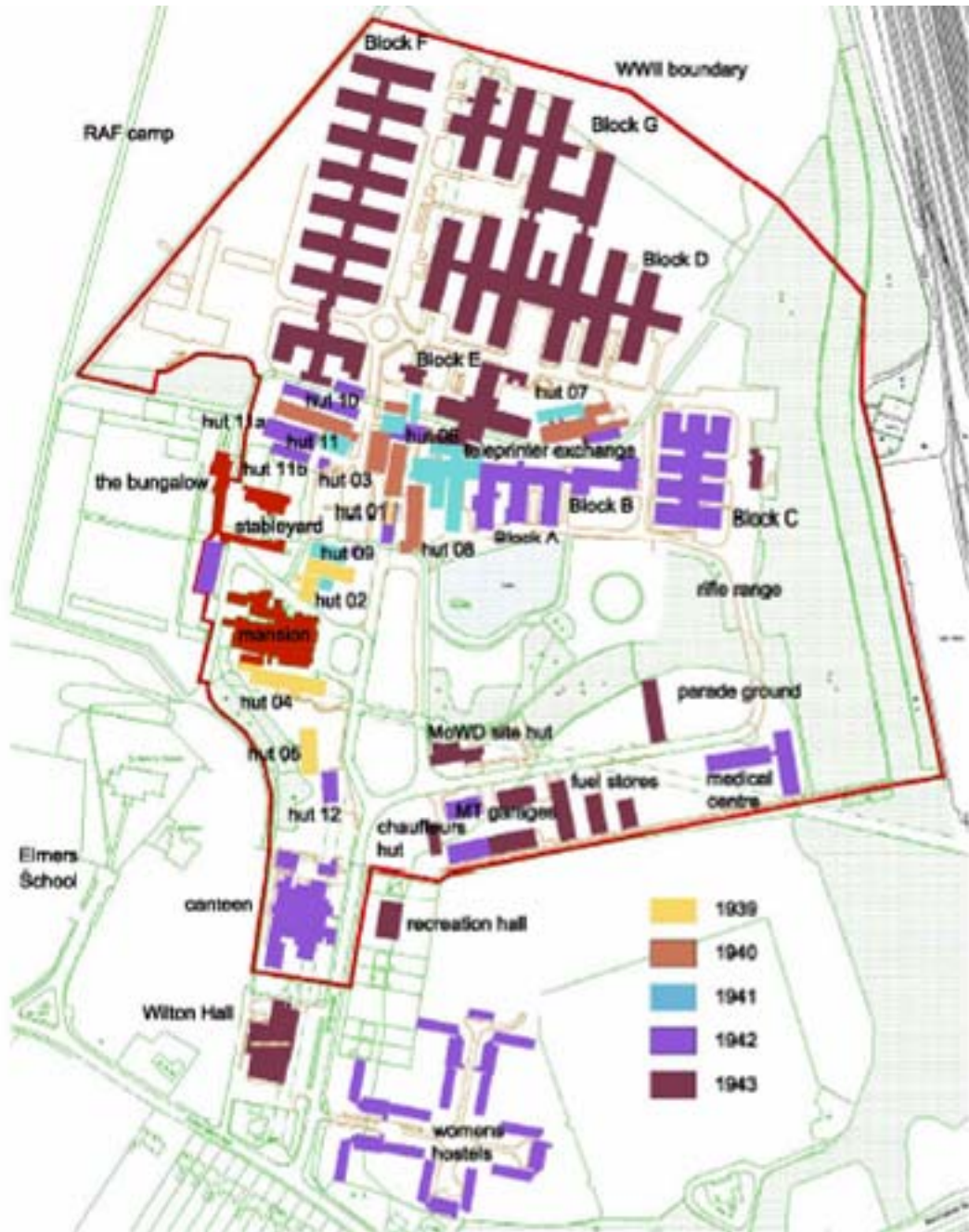
__Appendices__

LIST OF APPENDICES

Appendix 1 Location of Bletchley Park in England. Google Maps

Appendix 2 Map of Bletchley Park.

http://www.miltonkeynes.g"ov.uk/urban-design/documents/11-15.pdf

APPLICATION FORM.

This form should be filled up and returned to the Principal Establishment Officer, Foreign Office, S.W. 1. If the space provided here for any answer is insufficient, a separate sheet should be used and your name written upon it.

Name in full, surname first	BROOK, JOHN CHARLES
Name of husband/wife	
Postal address in full. (Any change of address should at once be communicated to the Principal Establishment Officer, Foreign Office)	73 VICTORIA ROAD, BLETCHLEY BUCKS.
Exact date of birth, and age last birthday	14. 4. 21. 19 YEARS.
Place of birth	8 CHURCH STREET, HUNSLET, LEEDS, 10. YORKS.
Your nationality	BRITISH.
Your nationality at birth (if different from above)	
Your father's name, place of birth and nationality at birth	BROOK. C. W. HUNSLET, LEEDS, BRITISH.
Your husband's/wife's name, place of birth and nationality at birth	
Your father's postal address and profession (if dead, give last address)	3 FARRAR YARD, HUNSLET, LEEDS,10 LABOURER.
Your husband's postal address and profession (if dead, give last address)	
Your mother's place of birth and nationality at birth	DUBLIN. BRITISH
Her nationality at present (if different from above)	
Schools. (a) Name your schools in order, giving addresses with dates of entering and leaving (b) Age on finally leaving school (c) Any distinctions obtained	ST. JOSEPHS R.C. JOSEPH ST. HUNSLET, LEEDS, 10. S 1924 - 34.

Appendix 3 Form to fill in on application at Bletchley (page 1) NA/ HW64/29

10. University.
   Name your University or other place of study of similar rank with dates of entering and leaving. State degree (if any) and any other distinctions

11. Shorthand speed, if any
    Typing speed, if any
    Languages, if any

12. Positions held.
    Give in succession, with dates

FORGROVE MACHINERY
JUNE 193_
FEB 194_
BRITISH TABULATING
FEB 1940

13. Position desired.

HOLLERITH SERVICE

14. Give the names, postal addresses and professions of three referees, who should be responsible persons, well acquainted with you in private life but not relatives. State for how long each has known you. A minimum of two years is essential

MR A. HAYWARD
14 SPRING GROVE
THWAITE GATE
LEEDS 8

MR E. HORROCKS
23 WINROSE GROS
BELLE ISLE
LEEDS 10

MR J. SANDERSON
64 KELLY STREET
GREENOCK, SCOTLAND

15. Signature and date

JCBrook   20-

16. National Registration No.

K. G. W. W. 85

Appendix 3b Form to fill in on application at Bletchley (page 2) NA/ HW64/29

Secret. G.C.C.S.

B.26

No: S.F. 22631

Date 23.3.42

M.I.5. (Captain STRONG)

Have you any trace, please, of

Name: BROOK, John Charles

Nationality: British

Date and Place of Birth (or approximate age): 17th July 1921
8 Church St., Hunslet, Leeds, 10, Yorks.

Occupation: At British Tabulating Machine Co. Ltd. as operator.

Present whereabouts and address (if possible): 73 Victoria Road, Bletchley, Bucks

Any outstanding particulars:

Reasons for enquiry: Candidate for employment at G.C. & C.S.

P.B. for E.B.B.

Remarks by M.I.5.:

NOTHING RECORDED
25 MAR 1941 AGAINST.

Appendix 4 Background check by MI5. NA/ HW 64/29

HEADS OF SECTIONS MEETING
                              20.3.43.   . 12

1. <u>Expansion scheme - Accommodation</u>:

        A.D.(S) stressed that the Heads of Sections should, when
making fresh plans to meet the expansion scheme, bear in mind
that new buildings will be put up to meet the requirements. It
is not proposed to move sections from the buildings they are now
occupying and which were designed for certain definite functions.
        A.D.(A) will prepare a rough scheme which will be submitted
to Heads of Sections for them to enlarge upon.

2. <u>Circulation of Daily Summary</u>:

        A.D.(S) expressed his concern that whereas the circulation of
the summary is limited to 5-6 people it is in fact seen by about 50.
        Heads of Sections explained that it had been passed to members
of the Sections requiring to see the summary in connection with their
work, they felt that the further circulation of such a paper, addressed
to themselves personally, should be left to their discretion. <u>It was
agreed</u> that provided the summary was given MSS security its distribu-
tion should be the responsibility of Heads of Sections.
        The matter having been raised in the first place by C.S.S. the
above suggestion would be put up to him for approval.
            limited to the officers now named by each section. If any section wished
3. <u>Transport</u>:   to extend the circulation to other officers it should be notified
                to AD(S).

        A.D.(A). again raised the question of transport and stated that
in view of the present disorganisation caused by incorrect lists being
made out by the Sections it would be necessary to put the onus of
procuring transport on the individual. He ordered that this should
be enforced w.e.f. March 31st. <u>This was agreed</u>. Lists will be found
in the buses and passengers will have to put their names down themselves

Appendix 5 Discussion of the distribution of a Daily Summary. NA/ HW3/166

Appendix 6 Poster (part of the Careless Talk Costs Lives campaign)

The need for safe channels to distribute Ultra. www.learningcurve.gov.uk

EXPOSED FILM OF H.M.S. GRIFFIN'S PRIZE.
(Repulse's No.0023/301 of 29th April 1940.)
- -

II.

No.753/H.F.1022.
ADMIRALTY.

Forwarded in accordance with Admiralty
message 1757 of 7th May 1940. It is unlikely that
this film shows any details of the equipment of the
vessel, but the important point to conceal from the
enemy is the fact that the Polaris has been captured
and that we are aware of the role of these ships
and have been able to study their elaborate armament.
It is therefore considered that on no account
should this film be released.

H.M.S. Rodney.
9th May 1940.

ADMIRAL OF THE FLEET.

Appendix 7 Secret surrounding the capture of Polaris, because it had an Enigma on board.
NA/ADM1/10603

S. 1320f.

NAVAL MESSAGE.

P

Originators Instructions:
(Indication of Priority,
AIDAC, NOTWT
For Exercise).

IMMEDIATE

INTERCEPT GROUP.

TO: ? *Comdr D3*

FROM:
Admiralty

Reference operation *Primrose* ○ (a) Were any officers and men saved in addition to those in *Aubrietia* and if so in which ship are they ○ (b) Give names of HM ships which *Primrose* was not repetition not sunk and do not repetition not permit any of them to enter harbour without further orders ○ (c) are any ships of OB 318 aware *Primrose* was not sunk ○ ? which ship are books and gear ○ (e) *Bulldog* star 45 and report fuel remaining (f) Further instructions follow =

Book or Table to be used for		Initials of Cypherer or Coder.	Time of Receipt in Cypher or Coding Office	Date.
Cyphering or Coding.	Recyphering or Recoding.			08420/
Cypher		W		10/5

(5/520) W.t 44492/1846 ... per pads.   ·2/40. B. & S. Ltd. 51-6176.

Appendix 8 Secrecy surrounding operation Primrose.

Collections of the Imperial War Museum, Private Papers of V. Funge-Smith, 4663 81/49/1

104
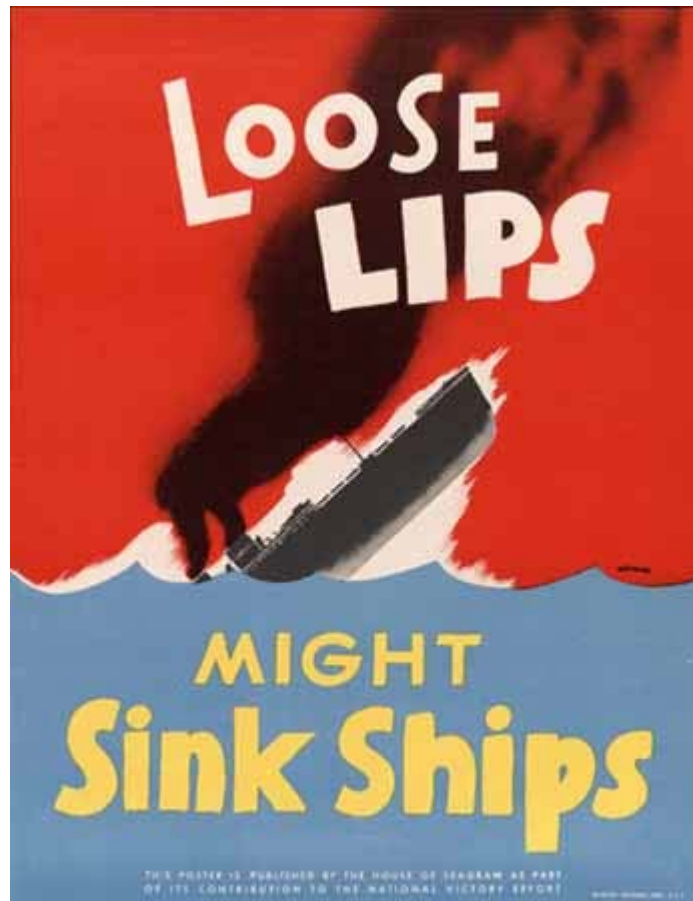
Appendix 9 Poster campaign. http://www.usmm.org/postertalk2b.html

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HW 2/76.

HW 3: Government Code and Cypher School and Predecessors: Personal Papers, Unofficial Histories, Foreign Office X Files and Miscellaneous Records

HW 3/96, HW 3/165, HW 3/166.

HW 8: Government Code and Cypher School: Naval Section: Reports, Working Aids and Correspondence.

HW 8/27, HW 8/33.

HW 14: Government Code and Cypher School: Directorate: Second World War Policy Papers

HW 14/12, HW 14/18, HW 14/19, HW 14/59, HW 14/60, HW 14/82, HW 14/90.

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