

The Poles and Enigma after 1940: le voile se lève-t-il?

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Abstract

Recently declassified papers, together with other archival material, begin to reveal more details of the activities of the Polish code-breakers after the outbreak of war in France in 1940. Despite challenging operating conditions, they continued to work on Enigma problems, though without the benefits of the new technology developed at Bletchley Park. Their role in the war effort, with particular focus on Enigma, can thus be re-examined. Although various questions remain unanswered, it is fair to conclude that the Polish contribution continued to be valued by the Allies, and that the role played by the Polish code-breakers in the final year of the war needs to be re-evaluated in light of the prevailing political climate.

1 Introduction

It is a persistent myth that the Polish code-breakers who had successfully attacked the Enigma cipher before World War 2 were rejected by the UK's Government Code and Cypher School (GCCS). It is, however, just that, a myth: GCCS made concerted efforts in 1940 after both the fall of Poland and the fall of France to have the Poles join Bletchley Park.¹ Instead, the Poles were integrated into the operation of Gustave Bertrand, initially as part of the official French Service de Renseignements and, after the Armistice agreed between France and Germany, as part of the Vichy regime's Bureau des Menées Antinationales (BMA) at a secret location called 'PC Cadix'. This state of affairs continued until the takeover of the Zone Libre of France in November 1942,

¹UK National Archives (TNA) HW 14/3 (Jan 1940), HW 14/5 (Jun 1940).

when after some adventures, the survivors of the Polish team were brought to the UK and integrated into the cryptanalytical team of the Polish General Staff located at Felden, just outside London (Rejewski, 2011).

A more genuine mystery concerns the actual work of the Poles after they left Poland, and the extent to which they were able to work on Enigma ciphers. It is well understood that, during the first period at 'PC Bruno', before the invasion of France, they were attacking Enigma using the Zygalski sheets method (Kapera, 2015). But their later work at PC Cadix and Felden has, until recently, remained more obscure. In 1944, Marian Rejewski wrote a semi-official memorandum,² objecting to being excluded from current work on Enigma, which has been interpreted as further evidence of side-lining of the Polish code-breakers by the official British authorities. Borrowing a title from the work of Paul Paillole on Enigma (Paillole, 1985), this paper looks at the archival material concerning the Polish team's work, considers the extent to which the veil has been lifted from it, and re-examines the nature of Rejewski's discontent.

2 The Source Materials

There are three principal contemporary accounts of the Polish codebreakers' activities in the period 1940-1945: by Gwido Langer,³ by Gustave Bertrand,⁴ and by Marian Rejewski (2011). Comments may be made about each of them. Langer's account was prepared as part of his campaign for rehabilitation with the Polish General Staff, which had been induced to question Langer's leadership of the Polish team at the

²Polish Institute and Sikorski Museum (PISM), London, Kol 242/92 (Jul 1944).

³PISM Kol 79/50 (1946).

⁴Service Historique de la Défense (SHD), Vincennes, DE 2016 ZB 25/1 (1949).

time of its forced withdrawal from France in late 1942. The circumstances in which Bertrand's account - only declassified in December 2015 - was prepared in 1949 are less certain. However, his motivation can be imagined. At that time it was important to Bertrand, who had acquired a senior position in the intelligence service re-established by President de Gaulle after the war, to bring to the fore his patriotic Resistance credentials notwithstanding his arguably-dubious association with the Vichy regime during the period of the BMA. Rejewski's account, prepared in the late 1960s, was careful to avoid any mention of activities which might expose him further to the attentions of the Soviet-inspired Polish security services (Polak, 2005). The ambiguity of the position of Bertrand in relation to the Vichy régime after the Armistice of June 1940 led to a degree of concealment, even from Bertrand himself, of the true nature of the Polish operation (Medrala, 2005)⁵. The British were also concerned as to where Bertrand's loyalties lay.⁶ Each of these reports, then, may be open to an accusation of partiality or selective reportage.

Notwithstanding these criticisms, the three accounts may be relied on for what they say about the nature of the cryptological activities of the Polish team, except in that Rejewski's account we are unlikely to find evidence of attacks on Russian ciphers. In relation to the assault on German Enigma, all three accounts might be expected to be straightforward and reliable, if not complete.⁷

In addition to the three main accounts, there is a wealth of correspondence and supporting evidence in the UK National Archives, the remaining Polish Intelligence Bureau archives at the Polish Institute and Sikorski Museum in London, and the dossiers of original papers accompanying Bertrand's 1949 account. These last-mentioned dossiers, only recently declassified, provide a new

⁵Langer's account also shows how thousands of encrypted messages were relayed by his team from Polish Intelligence in North Africa to London.

⁶See, for example, TNA HW 14/8, telegrams of November 1940.

⁷It may, however, be observed that the typewritten account of Enigma code-breaking entitled 'Kurzgefasste Darstellung der Auflösungsverfahren', also revealed as part of the Bertrand Archive (SHD DE 2016 ZB 25/6, Dossiers Nos. 281 and 282), is not comprehensive, and conceals important facts now known about co-operation between the Allies on Enigma cryptanalysis. The three accounts mentioned may also suffer from the same issue of selective reportage.

and informative perspective on the cryptanalysis conducted under Bertrand, including for the period when the Polish team was included within his organisation. Taken together, the materials build a good picture of the activities of the Polish code-breakers during the years 1940 to 1945, and facilitate a re-assessment of their contribution and of their ongoing involvement in the Enigma story.

2.1 Literature

The work of the Poles on Enigma has been covered by many authors (Grajek, 2010; Garliński, 1979; Kozaczuk, 1998) to name just a few. Their achievement in uncovering the workings of the Wehrmacht Enigma machine and finding methods to expose the daily key-settings in use has, naturally, been the focus of these works. A smaller body of scholarship focuses specifically on the Poles' activities after June 1940, when their operating conditions had become much more difficult. Medrala (2005) gives a comprehensive and objective account of this period, but his sources revealed little about the nature of the code-breaking activities or the methods used. Ciechanowski and Tebinka (2005) specifically discuss Enigma, but in relation to the period after June 1940 they have little to add on what ciphers were broken or how.

Paillole (1975) and Navarre (1978) provide much insight on the Vichy period, but they cover all aspects of intelligence, rather than focusing on cryptanalysis. Given the background, with Poland overrun by Germany and the USSR, one might expect the efforts of the Polish code-breakers to have been directed against those powers, and not, for example, following the more complex agenda of Vichy, which included the Allies as objects of its intelligence-gathering.⁸ Bloch (1986) focuses on the code-breakers, raising a number of pertinent questions concerning the Polish team, and their relationship with Bertrand; but like the other authors does not go into detail on the ciphers or techniques. In any case, the French writers all draw heavily on Bertrand as their source. Bertrand's own book (1972) is entitled 'Enigma' and gives the impression that Enigma must have been the main, if not the only, target of the Polish team. However, the hypothesis that the Poles were devoting themselves at this time to Enigma, without code-breaking machinery and possibly

⁸Cf. Paillole (1975).

without even an Enigma machine, presents some difficulty; existing literature does not face up to that challenge.

3 The Cadix Period

After the fall of France, the Polish code-breakers were rapidly evacuated to French North Africa, despite the plea of Alastair Denniston, the head of GCCS, to assimilate them into his team at Bletchley Park. There, there was a near-mutiny when some of the team, including notably Marian Rejewski and Jerzy Różycki, did not want to return to France but to go to Britain instead. Gwido Langer put down the rebellion and the team moved to a new location near Uzès in the so-called Zone Libre, the Château des Fouzes, in October 1940. The conditions were sub-optimal: the code-breakers complained of having to peel potatoes, chop wood, and do other manual labour, and the nearest bath was 27 km away; but on the other hand Bertrand had arranged for the team's work, accommodation and wages to be funded by the Vichy Government (Bertrand, 1972).

Initially, the team had to struggle to obtain intercept material to work on, though Bertrand arranged a system by which the organs of the Vichy state would feed intercepted encrypted material to him to be worked on. Insofar as this was manually-enciphered material, the talented Polish team were able to tackle it without special equipment or machinery. So it appears that a substantial amount of the work carried out consisted of an attack on German transposition ciphers, notably a difficult double-Playfair method, though there were also successful attacks on Swiss machine ciphers and, in a moment causing some embarrassment to the Poles themselves, on the Poles' own cipher machine Lacida (Rejewski, 2011). The targets included the Wehrmacht, operating all across Europe from France to well beyond the Soviet frontier, the SS and other 'police' units, the Abwehr and the Sicherheitsdienst in France and North Africa, and the German Armistice Commission (Kozaczuk, 1998).

3.1 Enigma

The paucity of resources at PC Cadix was not limited to firewood and intercepted signals. In the flight from Poland, the Polish team had been able to bring with them only one of their synthetically

reconstructed Enigma machines. With the one they had sent to Bertrand through the diplomatic bag in 1939, that made a total of two to work with. Bertrand had just made arrangements for the production of duplicates of the synthetic Enigma machines by a factory in Paris when the invasion of France took place.⁹ For the purposes of the reproduction, one of the precious machines had been dismantled, leaving the team with only one. Before the invasion, a teleprinter link between Bertrand at PC Bruno and Britain had enabled some degree of sharing of key-finding results derived from Zygalski's sheets, and some decipherment of intercepts, but these had little impact on military operations¹⁰ and in any case the work had come to an end with the evacuation of PC Bruno. Evidently, at PC Cadix, there was at best the one surviving Polish reconstruction to work with, and none of the sophisticated key-finding machinery which the British Enigma team at Bletchley Park were beginning to exploit from mid-1940 onwards.

Thus it is legitimate to enquire to what extent the Poles at PC Cadix were able to work on Enigma, if at all, and if so how. In the first place it must be mentioned that the attack on Swiss machine ciphers was an attack on Enigma. 'The Swiss machine turned out to be an ordinary commercial model of Enigma, naturally with different internal rotor connections' (Rejewski, 2011). Tackling this machine would have been straightforward for Rejewski and his colleagues, who had honed their skills on the much harder Wehrmacht version of Enigma without the modern machinery now in use at Bletchley Park. Reverse-engineering the Swiss machine, without the fearsome plugboard, would have been a challenging but ultimately routine task, and Rejewski gives a brief description of it in his account.

However, a substantial contribution to intelligence derived from Wehrmacht Enigma messages was not likely to be feasible without the assistance of modern technology. Zygalski's sheets had been rendered obsolete by the change in key-transmission procedure adopted in May 1940, after which the Germans ceased to encipher the 'indicator' (the required orientation of the

⁹Bertrand 1949 report, and dossier No.272.

¹⁰As both the Langer account of 1946 and the Bertrand account of 1949 graphically describe.

three Enigma rotors for the transmitted message) twice over. From that point onwards, there were basically two methods for key-finding. The first was to use what the British called 'Cillying' and 'Herivelismus', and the Franco-Polish team called the 'Method Kx' (after the British cryptanalyst Dilly Knox, who had presumably described the technique to them at one of the trilateral conferences in 1939). Cillying assumes that the German operator has chosen a predictable six-letter word like HITLER, or another predictable sequence like QWERTZ, for the indicator; the first three letters (transmitted in clear) give a clue to the second three (which are enciphered). Herivelismus is named for John Herivel, a Bletchley Park code-breaker who imagined an operator would be lazy enough to use the last position of the rotors (or a position very close to it) showing at the end of the previous transmission - which helped when a long message was broken into several parts (Herivel, 2008). These methods could have been exploited at PC Cadix without the need for special technology - apart from the much-needed replica Enigma machine itself.

The other method of tackling Enigma in the period after October 1940 was machine-based. Developing ideas suggested by the pre-war Polish bomba, Bletchley Park cryptanalysts, including Alan Turing, had invented a new means of key-finding based on guessed-at message content and running a logic-check through all 17,576 possible combinations of rotor start-positions. Their machine, the famous Bombe, was used to find thousands of keys each month for the remainder of the war. This option was denied to Bertrand and the team at PC Cadix: indeed, it seems that Bertrand was kept largely, if not wholly, in the dark about the degree of success achieved by the British with their Bombes.¹¹

However, Bertrand had not lost contact with his engineering firm in Paris, and eventually the reproductions of the Polish reconstructed Enigmas began to arrive in pieces for reassembly at PC Cadix. By 10 September 1942, Bertrand was able to contact his British liaison and report that he had reassembled three of these Enigma machines,¹² suggesting that one of them be used for secure

¹¹TNA HW 65/7 (Mar-May 1942).

¹²Medralla (2005), page 183, says there were seven machines of which four were reassembled models; unfortunately in this instance his source is not specified.

communication between London and PC Cadix.¹³ Bertrand's cryptologist colleague Henri Braquenié noted with amusement that the arrival of the machines enabled PC Cadix to communicate with MI6 using Enigma technology: to rub in the irony he would sign off his messages (in cipher) with the words 'Heil Hitler' (Braquenié, 1975). However, the use of Enigma machines at PC Cadix, for any purposes, was short-lived. Within weeks of the approval by London of the use of the new Enigma-type machinery for communications, the possibility of the Zone Libre being overrun had become a live threat; the team at PC Cadix knew they were being tracked by the 'Funkabwehr', German counter-intelligence's radio direction-finding unit; and on 7 November 1942, continued operations at the château became imprudent. The premises were evacuated and code-breaking by the Poles in France came to an end.

3.2 Results

By all accounts the Polish team at PC Cadix were kept extremely busy for the two years they were there. Much of the work involved relaying (and re-enciphering) messages for London from the outpost of Polish Intelligence in North Africa, an activity which seems to have taken place under Bertrand's nose but without his knowledge. As for the actual code-breaking, PC Cadix was able to obtain copies of signals which were unavailable to Bletchley Park, which meant that the Polish team's reports on the activities of the SS as German forces moved east, following the outbreak of hostilities with the USSR in 1941, were highly prized in London.¹⁴ Those reports do not make comfortable reading, as they itemize round-ups and ethnic cleansing carried out in the newly-occupied areas of Belarus and the Ukraine.

Towards the end of the Cadix period, the code-breakers achieved a breakthrough against the hand ciphers of the Funkabwehr. In another irony, the trackers from the Funkabwehr who were hunting down illicit radio transmissions in the (increasingly Nazified) Zone Libre were themselves being tracked by their own prey. Gustave Bertrand built up a detailed profile of the Funkabwehr, its activities and personnel, its vehicles and locations, and above all its secret

¹³TNA HW 65/7.

¹⁴TNA HW 65/7.

signals. The Cadix team thus knew exactly when the net was closing in; and Bertrand himself was able to equip de Gaulle with a detailed profile of German direction-finding and radio-suppression in occupied France, once he joined the Free French in 1944.¹⁵

These examples show that the Polish team continued to make a valuable contribution to intelligence based on decrypted signals throughout their time at PC Cadix. In conclusion, however, it seems unlikely that any significant results were obtained at PC Cadix by the Polish code-breakers as a result of decrypting Enigma. However, a different story emerges when the remnants of the team reached Britain in August 1943.

4 The Felden Period

The story of what happened to the Poles of PC Cadix after their forced departure is highly dramatic and in some instances tragic. Suffice it to say that only a handful, including Marian Rejewski and Henryk Zygalski, eventually made it over the Pyrenees, only to be arrested and spend several months in Spanish prisons. On 3 August 1943 the escaped Polish code-breakers - only five in number - were relocated to Britain, and assigned to the Polish signals intelligence unit at Felden, a rural hamlet situated on the outskirts of Hemel Hempstead, north-west of London. Felden was the heart of an operation, approved and directed by MI6, which was clandestinely monitoring the signals output of the USSR, notwithstanding that the USSR was notionally the ally of both Britain and Poland in the struggle against Germany (Maresch, 2005).

On arrival at Felden, Rejewski, Zygalski and their colleague Sylwester Palluth were assigned to 'Team N', which was directed against German rather than Russian traffic.¹⁶ During this period, they enjoyed particular and noteworthy success against 'German Police' signals, and received commendation from Bletchley Park, relayed via MI6, for their work. To understand this better, it is necessary to know that the phrase 'German Police' covered a wide range of uniformed services carrying out a wide range of activities ordinarily associated with armed forces rather than law enforcement agencies. Nazi Germany had many such organizations, some substituting for

mainstream Wehrmacht units in combat roles, and others engaged in 'special' activities now known to be part of the program for extermination of Jews and other classes of society. 'German Police' signals were thus regarded as being of significant value in building up an overall picture of German military and political activities and plans. In October 1943, the British told Polish Intelligence, 'We are very glad to receive the T.G.D. German traffic taken at Felden,' and 'Police Traffic is steadily gaining in operational importance'.¹⁷

4.1 TGD

The specific version of German Police signals on which the Poles were working was known by its old call-sign 'TGD'. TGD was described in the GCCS History of Hut 6 as 'the famous T.G.D.', with the comment 'this key was never broken during the war and to this day is one of the classic mysteries of Hut 6. It never cillied so far as we know and no convincing re-encodement from any other key was ever produced.'¹⁸ Reports filed by Gordon Welchman of Bletchley Park's Bombe team in 1942 reinforce the idea that Bletchley Park had got nowhere with TGD, unlike other German Police ciphers based on Enigma.¹⁹ However, from the GCCS reports it is quite plain that TGD was indeed an Enigma cipher, and one of particular significance, since it was immune to ordinary means of attack. The careful security measures in place to protect TGD traffic imply that the content of the signals was more sensitive than other SS material.

In terms of TGD's structure, the recently-declassified Bertrand archive includes an intriguing dossier (Dossier 278) prepared by the Poles in approximately 1940. This dossier has not been discussed in the previous literature, and it gives the missing technical detail on the cipher. The dossier was part of a series of intelligence exchanges between PC Bruno and Bletchley Park on technical matters, and it summarises the key procedure being used, and thus explains why TGD resisted the attacks which worked for ordinary SS messages. In summary, TGD used a rigorous key system which precluded cillies. All three letters of the indicator had to be different, and the message-setting was first enciphered using a substitution alphabet before

¹⁵SHD DE 2016 ZB 25/1, file 01H002.

¹⁶PISM Kol 242/64 (Oct 1943).

¹⁷PISM Kol 242/92, TNA HW 14/90.

¹⁸TNA HW 43/71 (undated, c.1946).

¹⁹TNA HW 25/27 (Mar, Jun, Dec 1942).

re-encipherment on the Enigma machine. (In practice this is unlikely to have made a major difference to security, and the dossier reports that the preliminary encipherment of indicators was discontinued before the war.) More significant was the jumbling-up of material normally located in a standardized way in a message's preamble: in TGD messages message-data like the sender, addressee, message-key and so forth could be positioned differently on different days, albeit following a pattern. The 'biggest surprise', according to the Polish authors of the dossier, related to the content of messages. A coding-system was used to mask the content (before the entire message was enciphered on the Enigma machine), but with a twist: only part of the text would be in code, and the rest was in plain-text. The toggle between code and plain-text would have made a crib-based attack to find the Enigma key extremely hard. The code was in three-letter groups which used no vowels and omitted Q, X and Y; Q denoted a shift from alpha to numeric, X was punctuation, and Y denoted a shift from code to plain-text. Instead of spelling out numbers in full, as in standard Enigma procedure, the alphabet was used (A, B, C, ... standing for 1, 2, 3, ..., with redundancy, so that K, L, M, ..., and V, W, Z would also stand for 1, 2, 3, ...). Unfortunately, the dossier does not divulge the extent to which the code-book had been reconstituted by the Poles.

The significance of the messages is mentioned briefly in the dossier. The Poles had, at the time the dossier was written, been monitoring exchanges between the Sicherheitsdienst headquarters in Berlin and various border outposts responsible for gathering political and other intelligence from Germany's annexed territories and peripheral states. At the time, before the outbreak of hostilities, this included reports on subversive action being taken on behalf of the Nazis. Evidently TGD traffic was at that time more high-level political material than short-term operational information. The extent to which the nature of the traffic had evolved by 1943 is difficult to ascertain.

4.2 A veil half-raised

The declassified dossier thus unveils part of the 'classic mystery' of TGD. But in doing so, it merely intrigues us with further unsolved puzzles.

First, how was it that Bletchley Park was unable to exploit TGD, given that it had been armed with the dossier? The answer may be a lack of resources, or that Bletchley Park decided to focus on the Enigma keys that were susceptible to the Bombe technique. Breaking Enigma keys on a Bombe requires a crib, i.e. guessed-at plaintext, and without a history of prior decrypts it is a tough assignment to come up with a viable crib. Furthermore, the structure of TGD will have precluded the use of cribs. The Poles at Felden were not relying on Bombes, and it seems reasonable to infer that they dusted off their previous know-how and reapplied it in their new working environment.

A second intriguing feature of the success against TGD at Felden relates to Enigma machines. Not only is it absurd to imagine that the PC Cadix Poles managed to smuggle a counterfeit Enigma with them when they escaped, but there is sound evidence that the Enigma duplicates made in France remained there, with Rejewski and Zygalski making a special trip to France after the war's end to retrieve them from where they had been concealed.²⁰ Without an Enigma machine the effort against TGD at Felden would surely have been doomed. It would therefore appear that the British, who had been supplying Felden with equipment of various descriptions, may also have provided an Enigma (or more likely, a modified Typex machine reconfigured to emulate an Enigma, as used by deciphering clerks at Bletchley Park). Unfortunately there is no archival evidence to clarify how exactly the Poles did their work.

5 Rejewski's 1944 request

By the summer of 1944, as the Allied forces began their recapture of continental Europe from the Wehrmacht, the importance of German Police traffic to the overall intelligence picture waned. The Polish General Staff were told by MI6 that the British no longer required the 'German Police Intercepts' on 8 July.²¹ If it is right that TGD signals were being relied on for the insights they provided into high-level thinking at the top of the Nazi hierarchy, the timing of the shut-down of work on TGD is no coincidence. By this stage in the war, Bletchley Park had begun to tap into a

²⁰PISM Kol 242/69, Kol 242/93 (May 1945).

²¹PISM Kol 242/92.

far more powerful and informative source, namely the teleprinter traffic enciphered on the Lorenz Schlüsselzusatz device and broken at Bletchley Park with the help of novel electronic machinery. The change in British priorities for Felden also signalled a redistribution of Rejewski, Zygalski and Palluth, who were assigned in November 1944 to 'Team R', which was responsible for monitoring and decrypting Soviet traffic.²² Their reassignment followed an unwelcome period of idleness and was, for Rejewski at least, an unwanted development. Rejewski was moved to write a long note, dated 20 October 1944, in which he eloquently sets out the Enigma-related debt owed by the British to the Poles and requests closer involvement in the British work against Enigma.²³ Rejewski's request was viewed sympathetically by Polish Intelligence, and passed on to the British, but nothing came of it.

By this date, though, Bletchley Park had become a thoroughly industrial operation, churning out intelligence based on its Bombes, in a volume which would have astonished Rejewski if he had been aware of the scale of the operation. While there remained brilliant code-breakers at Bletchley whose skills were put to use right up to the end of the war, the focus of intellectual attention was no longer the Enigma. The old hands who had met and learned to respect Rejewski and Zygalski were out of the picture: Denniston in a new role relating to diplomatic ciphers, Knox dead, and Alan Turing redeployed onto speech encipherment. Rejewski had no advocates at Bletchley, and, in truth, no Enigma-related role there. Moreover, it would have been wholly counter to the culture of secrecy at Bletchley Park to allow a Polish code-breaker to see the nature of the new operation there. The British brush-off must also be seen against the prevailing political climate, where Poland was, in 1944, thought to be an 'unreliable' ally owing to tension growing between the Poles, aggrieved at the murders at Katyn, and the acquisitive USSR.

Viewed in the light of the politics of 1944, Rejewski's plea takes on a different colour. Like all exiles whose family were left behind, Marian Rejewski was in no doubt that he intended to return home after the war. As future events would show, this was a courageous thing to do; but

already in late 1944 it would have been plainly obvious that the Soviet influence in Poland was pervasive and pernicious. To be involved in the assault on Russian ciphers was an extremely unwelcome change for Rejewski, as it ratcheted up the danger-level for him personally. Yet precisely the same reasoning would have led Bletchley Park, assuming they were aware of his request,²⁴ to feel uncomfortable with Rejewski obtaining knowledge of the achievements and methods in use there, if Rejewski were going to go back to Poland after the war. Regardless of all the rhetoric about the USSR as an ally, the British were only too well aware that the Soviets needed to be watched, and what the dangers were. After all, it was the British who were sponsoring the Polish efforts at Felden which were directed against the USSR's secret messages.

6 Conclusion

The Polish attacks on the plugboard version of the Enigma machine in the 1930s stand as one of the most impressive achievements of mathematical cryptanalysis of all time. The fact that, after May 1940, the individuals who had created those earlier successes did not become part of the Bletchley Park team which took over, built from, and multiplied, their achievements, has been a source of dismay to many observers. It has been considered shameful that no place was found in Britain for Marian Rejewski and his colleagues after the fall of Poland or after the German takeover of the Zone Libre in France. No doubt, until late 1942, a valuable role could have been found for them at Bletchley Park alongside code-breakers of other allied nations who were already there. But the political weather had changed by 1943 when the Poles eventually arrived in Britain, and in any event the Polish code-breakers were still under Polish, not British, military command.

The fact is that the Poles did manage to carry on valuable cryptanalytical work in France until the end of 1942 and in Britain from 1943 until the end of the war. Only to a limited extent was their effort directed against Enigma, but that should not be regarded as official lack of interest in the Poles, rather as a decision about deployment of cryptanalytic talent in a changing world. What

²²PISM Kol A.XII.24/63, Kol 242/54.

²³PISM Kol A.XII.24/63.

²⁴Rejewski's paper, or a summary of it, was almost certainly provided to MI6, but it may have gone no further. There is no indication in the GCCS files that it was received or acted upon at Bletchley Park.

the Poles actually did, both at PC Cadix and at Felden, was of high quality and highly regarded, and it should not be seen as a slight on them that they were asked to carry out this work.

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