

**Operation Rubicon: Germany as an intelligence 'Great Power'?**

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## Operation Rubicon: Germany as an intelligence 'Great Power'?

### Abstract

Operation Rubicon was probably one of the most successful intelligence operations of our time. Recent press revelations detail this secret partnership between the German Bundesnachrichtendienst (BND) and the American Central Intelligence Agency (CIA), focused on the purchase and control of Crypto AG. Supported by German technical giants like Siemens, the company sold and produced compromised cypher machines. This article challenges the idea that the dominant sigint powers were within the anglosphere during the Cold War. Instead suggesting Rubicon evidences that the centre of gravity for intelligence lay 'elsewhere'. It also explores the complex ethical implications of Germany's involvement in Rubicon.

**Key words:** Cold War, Ethics, Germany, sigint, Siemens, technology

"Organized intelligence ... constitutes its own particular kind of state power: *intelligence power*."

Michael Herman.<sup>1</sup>

In 2013, Edward Snowden's revelations publicised in *The Guardian* triggered one of the most important discussions for many years concerning surveillance, lack of intelligence oversight and accountability.<sup>2</sup> A barrage of accusations were fired by the world's press and, on the receiving end, were the two major Western powers predominantly associated with powerful signals intelligence, the United Kingdom (UK) and the United States (US). At the time, Germany distinguished itself as a nation that was publicly appalled by these revelations, not least because they showed that the mobile phone of Angela Merkel, the German Chancellor, had been tapped by the National Security Agency (NSA).<sup>3</sup> In March 2014, the German Parliament even launched an investigation into the matter.<sup>4</sup> Responding to the Snowden crisis, Merkel had declared unequivocally: 'Spying among friends - that simply isn't done.'<sup>5</sup>

However, recent revelations throw a different light on Germany's own intelligence practices. The German foreign intelligence agency *Bundesnachrichtendienst* (BND) was involved in an elaborate signals intelligence partnership with the Central Intelligence Agency (CIA) and NSA from 1970 to 1993.<sup>6</sup> During this time, BND and CIA helped to sell rigged encryption machines through a company called Crypto AG (Code name Minerva). Only Germany, Sweden and Switzerland were immune, while countries like Italy and Greece were targets. Operation Rubicon (previously Thesaurus), has recently been described by *The Washington Post* as one of the most successful intelligence operations of all time.

Meanwhile, the dominant accounts of intelligence are largely Anglo-centric.<sup>7</sup> A wealth of literature focuses on the intelligence activities of the UK and the US together with their Commonwealth outriders: Australia, New Zealand and Canada. Perhaps this reflects the fact that, over the last few decades, these countries have been among the most generous in terms of declassifying public records, albeit this is a sometimes vexing process.<sup>8</sup> A

variety of intelligence literature developed during the late Cold War period, some of it driven by the post-Watergate collapse of the Cold War consensus. Thus, much of the writing focused on America, reflected in a stream of dissident memoirs and a determination to expose surreptitious and often reckless undertakings by the security services in 'peacetime'.<sup>9</sup> It was redolent of a period of intellectual post-Vietnam crisis in US power.<sup>10</sup> As Gaspard reminds us, although, there had in fact been a substantial stream of intelligence history publications all through the twentieth century, some of them quite important, but it was not until the early 1980s that the field of intelligence studies truly emerged as a self-conscious discipline.<sup>11</sup> For example, through the work of Andrew and Dilks, who famously pointed to the central nature of intelligence as the 'missing dimension' of academic narratives on international history, policy and decision-making.<sup>12</sup> Growing academic research on the subject exploited these new sources and has continued to advance substantially.<sup>13</sup> Nonetheless, there continues to be a distinct lack of investigation into intelligence activities outside of the Anglosphere.<sup>14</sup> This is often due to accessibility and uneven record-keeping practices, especially in the global south.<sup>15</sup>

While we have histories of human intelligence (humint) in many places, typically a huge literature on Russia, communication security (comsec) and signals intelligence (sigint) practices are peculiarly restricted to the Anglosphere. Despite recent efforts to access records of other European states to build a more comprehensive picture of Cold War intelligence history, our understanding of sigint practices after 1945 principally stems from research on Anglospheric secret services.<sup>16</sup> Accounts of sigint activities in the Second World War focus largely on the struggle between the English-speaking allies and Germany, but the narrative is wrapped heavily in an increasingly saccharine celebration of Bletchley Park and its triumphs.<sup>17</sup> Located at Bletchley Park, its former buildings now house a museum, dedicated to showcasing the achievements of their former codebreakers.<sup>18</sup> Tellingly, the Germans and the Italians enjoyed their own substantial sigint successes, and these achievements explain major events, including the disaster of the 1942 Dieppe Raid, however, they are often neglected by scholars and unknown to the general public.<sup>19</sup>

Germany is often referenced in popular intelligence narratives - but the focus is 'Stasiland'. The activities of the *Staatssicherheitsdienst* (Stasi) the East German's Ministry for State Security during the Cold War have been well documented.<sup>20</sup> In a less celebratory style than Bletchley Park, but still highly popular with visitors, the Stasi Museum located in the original buildings in East Berlin, exhibits a vivid story of the Stasi's iniquities until the end of the Cold War.<sup>21</sup> West German advancements in sigint (and comsec) during the same period, in contrast, have been much less publicised. This is also broadly indicative of the little interest that has been shown for sigint developments of continental European countries.<sup>22</sup> The important European sigint alliance Maximator, an alliance between Denmark, Sweden, (West) Germany, France and the Netherlands, for example, discussed for the first time in this issue, has largely remained hidden.<sup>23</sup> Recent revelations of Operation Rubicon conducted jointly by BND and the CIA, and details of the voluminous sigint 'take' should drastically alter our estimation of German capabilities. If, as Michael Herman argues persuasively, intelligence is a form of power, then can we speak of intelligence 'great powers'?<sup>24</sup> And did Germany achieve this status by the 1980s as the result of Rubicon?

The Snowden revelations have led directly to a more pronounced public questioning of dubious intelligence practices. Momentarily, this led to an awkward questioning of the most powerful agencies like the NSA, which benefit from billions of dollars of defence funds. The response from government was quite realist.

Could a Clausewitzian-style approach to justifying the ethics of such intelligence practices provide a practical framework for accountability on this occasion? This essay will utilise the comprehensive framework recently set out by Omand and Phythian.<sup>25</sup> It will consider the narrative surrounding the concept of justified spying and further ethical implications of such a secret operation. Less attention has been paid to the accountability of states in the European region. Arguably, the function of Operation Rubicon could be considered as a precursor to the NSA surveillance programmes that were revealed by Snowden. It will scrutinise the potentially negative ethical consequences that such a high level of secrecy or 'need to know' approach can have on the workforce within an organisation.

Overall, this article advances two overarching propositions. Firstly, that these recent revelations about BND ownership of Operation Rubicon reveal Germany to be a dominant sigint power, not just in Europe but globally. This is indicated by their management of highly advanced operations that combined humint and sigint in a way that any major power might envy. Few states have these sophisticated capabilities. Secondly, and more alarmingly, their operations were not only effective but also remained relatively concealed from public and political scrutiny throughout its functional period. Operation Rubicon throws into relief a number of ethical issues for the accountability and oversight structures of intelligence agencies outside the Anglosphere.<sup>26</sup> Specifically, Rubicon targeted state communications, not the messages of citizens, but nevertheless, was so secret that accountability was limited. Moreover, German intelligence chiefs repeatedly expressed moral qualms, but pressed ahead. Two decades after its retreat from Operation Rubicon, it is worth asking if German policy changes have successfully avoided further such entanglements.

### **Siemens and Hagelin**

Germany was already re-asserting her communications power in the 1950s. The German company Siemens was a pioneer in the field of telecommunications, building the first long-distance telegraph line in Europe in 1848. During the war it had designed and manufactured the impressive Siemens & Halske T52, also known as the *Geheimschreiber* or 'secret teleprinter' which had presented Bletchley Park with one of its sternest challenges. A decade later it was making a bewildering range of communications equipment and in 1957 it made the world's first mass-produced computer.<sup>27</sup> Although Crypto AG is the focus of this article due to recent revelations, the veritable network of production for cryptographic technology in Europe, and specifically in Germany, during this time is striking when considering the role of some prominent German organisations such as Siemens and its relations with the Gehlen Organisation, BND's forerunner.<sup>28</sup> Siemens had quite simply been the dominant telecommunications giant in Europe for decades and this goes some way to explaining the depth and importance of the German-American intelligence partnership and its main base in Munich. Later on, in addition to the evidently special relationship with Siemens, BND also had agreements with a number of other companies in Germany. Companies like AEG Telefunken, ANT, Rohde & Schwarz (R&S) and Tele Security Timmann (TST) all developing encryption technology, all controlled by BND. Germany was a hotbed for cryptology advancements that BND was exploiting this.<sup>29</sup>

A complicated history and multifaceted financial web ensured that the acquisition and practices of Crypto AG would remain largely uncorroborated - until now. According to recent revelations in *The Washington*

*Post* and programmes broadcasted by the German tv channel *Zweites Deutsches Fernsehen (ZDF)*, the Swiss company *Crypto AG* was secretly and jointly purchased by BND and the CIA on 4 June 1970.<sup>30</sup> Duplicitous from its very inception, *Crypto AG* was allegedly created by Boris Hagelin in 1950, partly for tax evasion purposes. Its founder had moved a part of his enterprise from expensive and tax-intensive Sweden to the outskirts of Zug in Switzerland. Hagelin himself claimed that the move was a part of his original plan to work with Swiss inventor Dr Edgar Gretener, which did not materialise. Instead Gretener founded a rival company *Edgar Gretener AG* in Zurich Switzerland, who then caused headaches for BND and CIA.<sup>31</sup> The law firm, *Marxer & Goop*, located in the tax haven *Lichtenstein*, assisted Hagelin in bypassing any onerous expenses through shell companies. Even in the 1950s, Hagelin was ambitious and had plans to sell his machines on a global scale, employing his son as his chief sales agent.<sup>32</sup>

In the early 1950s, Hagelin was visited by (the now renowned) William Friedman who would become NSA first chief cryptologist. The two had known each other for some time. It was part of Friedman's job to evaluate potential threats from cryptographic developments elsewhere. Friedman recognised the innate potential of Hagelin's latest machines and feared that the superior global US decryption capabilities would be compromised when Hagelin's improved technology was sold world-wide. For that reason, Friedman wanted to pursue a purchase of *Crypto AG*. Senior decision-makers at NSA did not share his concern, nor did they trust Hagelin.<sup>33</sup> Nevertheless, evidence shows that Friedman was eventually authorised by the United States Communications Intelligence Board (USCIB) to propose a 'Gentleman's Agreement', which Hagelin accepted.<sup>34</sup> This understanding was never formalised. However, Hagelin abided by its key terms, first that he would sell inferior machines to third-party states (thereby readable by NSA) and, second that when the time would come for Hagelin to retire, the US would be given first refusal on an offer for his company.<sup>35</sup>

Germany was important because *Crypto AG* was not the only European company in the cryptographic industry of interest to the US. Reinhard Gehlen established the *Gehlen Organisation* in Pullach Germany (near Munich), the forerunner to BND. Gehlen was formerly considered to be one of the best German intelligence officers of the *Wehrmacht*. However, due an independent historical commission appointed in 2011 by the BND Gehlen's reputation has undergone a major historical re-evaluation.<sup>36</sup> The *Gehlen organisation* was founded and under complete CIA control, in a post-war West Germany where intelligence activities were prohibited.<sup>37</sup> Gehlen was also linked to the *Atheneum Stiftung*, located in Vaduz Switzerland and a rival of *Edgar Gretener AG*.<sup>38</sup> *Atheneum* was developing a cypher device called *Hazardo*. *Hazardo*, much like Hagelin's devices, impressed the US enough to consider it to be a problem if sold elsewhere, yet they were insufficiently enamoured of it to want to use it for their own purposes. In 1952, the *Armed Forces Security Agency (AFSA)*, the NSA's predecessor, purchased a *Hazardo* machine from *Atheneum*. The subsequent agreement reached was not unlike that existing between Hagelin and Friedman.<sup>39</sup> *Hüttenhain* headed negotiations when Gehlen attempted to achieve a deal with the Americans over *Hazardo* that was almost identical to that of the later *Crypto AG* deal. *Atheneum* would rely on *Siemens*, one of the most advanced technical companies in Europe, to produce *Hazardo*.<sup>40</sup> This decision was a pioneering instance of what became a more ambitious effort to control the global market for encryption.

Germany's sheer technical power threatened to destabilise the practical benefits of Hagelin's agreement with Friedman. Nevertheless, the design of Hagelin's C-series machines continued to improve, reportedly

receiving input from a variety of external sources.<sup>41</sup> In 1955, Crypto AG and Siemens enter into a formal agreement to placate their growing rivalry. A division of manufacturing practices and marketable areas were drawn up. Siemens would focus on radio equipment and teleprinters while Crypto AG would focus on crypto machines.<sup>42</sup> Moreover, this would include sharing expertise and designs on tape generators and supplying the West German company with one-time-tape (OTT) generators.<sup>43</sup> An extract of a 1956 letter from Hagelin to Friedman indicates that, despite their contract, Siemens had made independent improvements and were beginning to better Hagelin machines, threatening his sales. Hagelin writes, ‘...for my own business, even if I am quite satisfied to keep my end of the ‘gentlemens [sic] agreement’, from purely sentimental reasons, it is no fun to loose [sic] business on this basis’.<sup>44</sup>

Siemens continued to present issues for the Hagelin sales representatives. Hagelin suspected that exports of their OTT teleprinter technology had been made to Egypt, Yugoslavia and India, all “unfriendly” nations to NATO and the US.<sup>45</sup> In 1957, Friedman visited Switzerland to try to appease some of Hagelin’s growing grievances.<sup>46</sup> Hagelin explained that the West German government had made a decision to allow Siemens to sell their OTT generator technology to ‘all countries’ with the exception of the USSR and affiliated countries. In turn, this development concerned Friedman who surmised that the destinations of Crypto AG generators sold in this way were now no longer traceable by the US. Friedman feared that there was also evidence of ‘secure’ machines having been sold to countries that the US deem to be problematic, such as Egypt. Friedman’s memo also made it clear that the US considered Siemens to be a key player in the European cryptographic market, setting West Germany apart in terms of its deeper sigint capabilities.<sup>47</sup>

By 1957, circumstances had changed on both a professional and personal level for Hagelin. The relationship between Hagelin Snr. and his son Boris Hagelin Jnr. (referred to as Bo) was deteriorating, due to Bo’s marriage to an American woman who the family did not approve of. Friedman and Hagelin worried that Bo was likely disclosing sensitive information about the inferiority of certain machines sold to Crypto AG customers of unfriendly nations. Friedman urged Hagelin to prevent further such unwelcome disclosures by Bo.<sup>48</sup> During a further visit by Friedman, his friend Hagelin also confided that he was contemplating retirement. He outlined two options – firstly, transferring the company to Bo and secondly, selling to Siemens. Hagelin favoured a Crypto AG-Siemens merger so that, ‘they could take over the headaches which I now have in dealing with my customers under the handicaps imposed by limitations and restrictions as to whom I can sell what machines. I’m tired of being the only whipping boy’. Hagelin was referring to the various restrictions that had been imposed on him through agreements made with European manufacturers, but also his understanding with Friedman. Perhaps, a Crypto AG-Siemens merger would have been the simplest option, as certain components of the Hagelin devices were already in production there.<sup>49</sup> However, Friedman reminded Hagelin of another option, a joint purchase by the US and Germany.<sup>50</sup>

### **Sigint Powers in Europe**

In the late 1950s, unexpectedly, the NSA pulled back from the idea of an American purchase of Crypto AG. However, they were eagerly replaced by the CIA.<sup>51</sup> Friedman was required to hand over any Crypto AG files in his possession to the CIA who would take over negotiations. Shortly afterwards, in 1951, the CIA also withdrew from

the Hagelin deal. Rather than showing disinterest, this likely reflects some of the broader challenges faced by the agencies at the time. For instance, the cryptographic landscape was rapidly changing, including a private sector infiltration into what was a largely state-dominated industry. In 1960, the CIA and Crypto AG entered into a 5-year Licensing Agreement, after which it would change to an annual review arrangement. In 1966, the loss of his wife, indicated that Hagelin might soon consider retirement. It was felt imperative that ownership of the company should not be transferred to Hagelin's son, Bo. The relationship between Hagelin and Bo had continued to deteriorate, despite Bo still retaining some control in the company through shares. Several negotiations and talks commenced for the purchase of Crypto AG shares, predominantly between Germany and France. A proposition was also made to the Americans to divide shares between the French, West Germans and the US. However, the US harboured a deep-seated mistrust of the French. Considering West Germany to be their home base in Europe, the US were more approving of a sole-German. The American attitude illustrates the importance of historical context and the complexity of this most sensitive of operations.<sup>52</sup>

Germany has been repeatedly underestimated as a sigint power in Europe. The relationship between the US and West Germany had developed quickly during the occupation. Quite simply, because for decades, Germany had been collecting intelligence, and indeed conducting sigint and imagery collections against America's new enemy the Soviet Union. Due to many archival records remaining closed to public access, even for events in the 1950s, our knowledge of this period is relatively incomplete. However, the outline is clear. Following the Allied victory, Gehlen who had been chief of the Wehrmacht Foreign Armies East military intelligence service on the eastern front, went into business with US forces. Gehlen had proposed an organisation targeted towards collecting intelligence on the Soviet Union and its affiliates – the Gehlen Organisation. The CIA code name for his organisation was Zipper. Gehlen employed a number of former SS and Gestapo officers as personnel. Unsurprisingly, this has shaped the suspicious German public perception of their post-war intelligence agencies considerably.<sup>53</sup>

In 1956, the new German government took control of Zipper and rechristened it BND.<sup>54</sup> Gehlen was appointed as the first head of BND and Erich Hüttenhain as the Director of the *Zentralstelle für das Chiffrierwesen* (ZfCh), the sigint auxiliary of BND.<sup>55</sup> ZfCh, the sigint arm of BND, had been founded and run by Hüttenhain from around 1947 and was now merged with the Gehlen Organisation to form BND. Naturally, the American's were keen on acquiring German knowledge and expertise. During the highly secretive wartime Operation Ticom the US and UK had been infiltrating and extracting information from German sigint operations, so were cognisant of their valuable capabilities.<sup>56</sup> BND's original objective was to collect intelligence from Eastern Bloc countries, in particular East Germany and the Soviet Union. The BND relied predominantly on human agent methods of collection to ascertain communist activities behind the Iron Curtain. Returning POWs were subjected to questions by BND during Operation Hermes. In Soviet occupied Austria, during Operation *Fahrrad* (transl. bicycle), information was sought by rifling through bin waste at military barracks.<sup>57</sup>

Importantly, by 1956 BND, unlike many western intelligence agencies, had achieved a singular structure representing a fusion of humint and sigint services in one organisation, albeit with separate departments.<sup>58</sup> This unique arrangement is what differentiates BND from other agencies and made it something of a pathfinder. It appropriated and exploited geographical expertise and combined it with the capabilities of rapid technological

advances. It also anticipated current intelligence operations in the 21<sup>st</sup> Century, when the ability for a fusion approach – ‘reading’ both data obtained from personal electronic devices, the Internet and understanding human behaviour is key. It was not only Siemens and Rubicon, but also BND’s prescient structure that placed it at the forefront of modern intelligence. By comparison, in Britain, humint and sigint, once owned by MI6, were being prized apart and placed under separate organisational chiefs over much the same period.<sup>59</sup>

Partly through their advanced intelligence practices and their technical strength, Germany was a central element in these developments during the Cold War and beyond. We now know that Germany has formed a part of two major European multilateral intelligence alliances – the ‘Maximator Alliance’ and the ‘Ring of Five’. Denmark, Sweden and Germany formed the Maximator alliance in 1976 with the Netherlands joining a year later and France in 1985. This was an exclusive club, based on existing relationships between central characters within the respective intelligence services. France and Germany, for example, had already established a working relationship due to the friendship of Gustave Bertrand (a French figurehead in military intelligence) and Gehlen. According to Jacobs, ‘Certain countries were deliberately not allowed to join because within the Maximator alliance they were considered as lacking relevant (signal-/crypto-analytical) expertise and/or experience’.<sup>60</sup> The second alliance, referred to as the ‘Ring of Five’ by Aldrich are Germany, the Netherlands, France, Belgium and Denmark. Denmark, in turn, was involved in a further close network of Nordic sigint co-operation.<sup>61</sup> These successful alliances can be considered to be the European equivalents to the global UKUSA or ‘Five Eyes’ agreement.<sup>62</sup> Such sigint focused agreements indicate a quiet strength in Europe, with Germany as the key player, rivalling the more flamboyant services of the Anglosphere.

### **Minerva**

The 1970 purchase of Crypto AG was not easy to secure. Following failed purchase negotiations in 1966, the deal was back on the table in early 1967. Hagelin received a proposal from the French for a Franco-German purchase of Crypto AG. ZfCh’s Hüttenhain and his deputy Dr Wilhelm Göing had been leading talks a on potential joint purchase with the French for several years. Like the Germans, the French already benefitted from a well-established relationship with Hagelin. However, Hagelin considered US approval of a sale to be vital and would not go ahead with a deal until it had been agreed by CIA and NSA.<sup>63</sup> These efforts to secure a potential European deal and Hagelin’s increasing mentions of retirement were alarming to the US. Meanwhile, the Crypto AG business had become more lucrative than any party could have foreseen with thousands of machines sold in the early 1960s. Thereafter, with the operational support of Siemens, NSA had continued to invest in their technology to maintain the strategic advantage of Hagelin’s machines. Now, the increasing risk that Hagelin could sell to an unknown party created anxiety in some quarters and the question of purchasing the cypher company was urgent. Nevertheless, NSA figureheads remained remarkably ambivalent. They felt that most countries that Hagelin was selling to were not sophisticated enough to secure their communications, negating the need to supply them with readable machinery. In the opinion of the NSA, this made a purchase of the company simply unnecessary.<sup>64</sup>

The CIA and BND, however, disagreed with this evaluation. Unlike NSA, CIA considered the connection to be of greater potential value in the future. Additionally, the possibility of a sole French purchase was unpalatable to both agencies. The influence of the US would be reduced considerably in the event of French

ownership and Crypto AG was clearly paying its way as a business venture. Hagelin was also pro-American and conscious that the US would not be willing to enter into a partnership with the French. Therefore, he delayed offering support for a proposed German-backed deal with the French and Americans. In 1969, Göing (who would succeed Hüttenhain as director of ZfCh in 1970) flew to talk with key NSA figures in Washington DC. Göing's intelligent proposal centred around the German company Siemens being named as the official purchaser of Crypto AG, a ruse to conceal the actual French-German-American partnership. NSA were not keen on the deal. Although, indifferent to a German purchase, they stressed that a French purchase was out of the question.

The CIA now took the lead. After some time, an understanding for a sole German purchase via Siemens was reached. Then, another agreement was proposed - a 50/50 partnership between CIA and BND. Siemens was to become the official owner of Crypto AG. However, at that moment everything changed. Siemens decided against their formal involvement and its place would be taken by the German government. The German Chancellor's intelligence coordinator, Horst Ehmke, by contrast jumped at the opportunity to be in business with the CIA.<sup>65</sup> The purchase itself was of course shrouded in secrecy. CIA did not want the Crypto AG board or its employees knowing of the sale. Similarly, the ageing Hagelin was now ostracised from consultations. By contrast Sweden and France would have, at the very least suspected, though their political overlords were largely kept in the dark. In 1970, Crypto AG was given the code name Minerva. The original name for the whole joint BND-CIA operation was Thesaurus and this was changed to Rubicon in 1987.<sup>66</sup>

### ***Marriage and Divorce***

Despite the trepidations about their official involvement, the Siemens-BND connection remained. Internationally respected, Siemens was partly responsible for the BND-CIA successes with Minerva. A special contract would ensure this continuing relationship. This agreement included sharing equipment, such as the T-1000 a Siemens teleprinter design and a 5% license fee for Siemens. A Siemens representative also sat on the Crypto AG Advisory Council, receiving both a generous monthly stipend and annual bonus.<sup>67</sup> The link between Germany and Crypto AG was further strengthened in 1975, when Heinz Wagner was selected to be the next director of Crypto AG. Wagner had previously worked as a Siemens manager, though he admitted to knowing nothing about cryptology. Nevertheless, the charismatic and decisive new leader would soon be brought up to speed through NSA training, received prior to his January 1976 start with the company.<sup>68</sup> BND and Siemens held frequent meetings on operational matters. CIA were not invited to these consultations, indicating that Siemens placed higher value on the BND connection in order to ensure their own interests were met. Ultimately, Siemens compensated for the cryptology knowledge gaps, guiding BND to 'a position of operational and security leadership'.<sup>69</sup>

US presence both in Switzerland and Germany increased over time. NSA and CIA representatives took part in more meetings. Additionally, there was a physical movement of employees into the area, as well as their offices to the American Consulate in Munich. The changes threw into relief the different approaches by US and Germany. There had been an initial understanding that the Germans would lead on the Rubicon project. However, over time the involvement of NSA and CIA caused some friction. Germany didn't have the funds to compete with technical advances made by the US on cryptologic designs. Additionally, the two countries often had different views on policy debates, for example, when it came to selling machines to some Soviet bloc countries. The NSA

was in favour of selling, whilst the Germans had a more cautious approach.<sup>70</sup> An increased Siemens involvement also started to cause issues in the late 1980s. Not only were Siemens advisors reportedly 'overstepping their bounds', but they continued to take their financial cut for (apparently) little return.<sup>71</sup>

The joint CIA-BND management of Crypto AG constituted a happy marriage overall, lasting between 1970 and 1993. For almost a quarter of a century it produced remarkable intelligence and allowed BND to gradually elevate its status alongside the growing importance of West Germany as a European power. Significantly, BND progressed from being an expert technical facilitator, helping to manage the complex internal manipulation of leadership and technology within Crypto AG, to establishing itself as a significant sigint producer in its own right. Even in 1970, Germany was not fully exploiting all their sigint opportunities provided by the inbuilt weakness of the Crypto AG machines. This was due to a variety of technical, financial and practical factors. However, over the next quarter of a century, the ambit of German foreign policy and global economic interests continued to expand. BND invested in higher grade computers allowing it to process larger volumes of communications. In turn, significant agreements between BND and NSA on processing and exchange of product were made, reflecting their rapid advancements and marking Germany's rise to greatness within the world of sigint. GCHQ's Director, Arthur (Bill) Bonsall, and his assistant Douglas Nicoll, made a valiant bid to join this exclusive American-German club in the late 1970s, but found themselves shut out.<sup>72</sup> It is no surprise then that during the late 1980s, Bill Odom, Director of the NSA, was losing interest in the GCHQ partnership and instead pursued closer relations with the Germans.<sup>73</sup>

Germany's withdrawal from Operation Rubicon occurred in 1993. The surreptitious purchase of Crypto AG in 1970, had been drawn out and complicated. By contrast, as Mainwaring explains elsewhere in this issue, the German withdrawal from Rubicon in 1993 was predominantly triggered by a strategic decision. Germany started to see itself as a part of the new Europe, following the fall of the Berlin Wall and the unification of Germany. As a result, it became drawn towards its European partners and, with the creation of a European currency, began to envisage a common European foreign policy which sat awkwardly alongside the targeting of Italian and Greek communications. Germany displayed cold feet, constantly reminding its American partners that they had to preserve their new image and fearing further revelations. Operationally, Minerva was experiencing a financially unstable period. It was still producing good intelligence, but sales of machines were dropping off and Crypto AG now required transfers funds to keep it afloat, which was more a problem for BND than the CIA.<sup>74</sup>

The divorce agreement was a short one-page memorandum. Only few details were included in order to maintain high level secrecy. A second memo provided assurances to BND that CIA would continue to share information produced by readable machines. Eventually bearer shares were transferred successfully, and the CIA became the sole owner of Minerva.<sup>75</sup> Interestingly, the CIA's records show that the terms of the divorce agreement were adhered to, but BND sources refute these claims. They assert that following the divorce the CIA altered Minerva machine algorithms to improve security, consequently BND could no longer read the information, despite assurances in the agreement. Instead, BND secured products from the Försvarets Radio Anstalt, the Swedish National Defence Radio Establishment.<sup>76</sup> The German and American documentation says little about their Swiss and Swedish partners, but there are suggestions that, when further documentation becomes available, our picture of who was an intelligence 'Great Power' in Europe might be revised again.

## Intelligence Power and Ethics

At first glance Operation Rubicon appears ethically unproblematic, since it was focused on the technical acquisition of intelligence derived from traditional sources: the communications of diplomats and states. During the period of Rubicon's most fruitful production, the 1970s and 1980s, some of these states, including Iraq, Iran and Libya, were undoubtedly involved in the state-sponsorship of terrorism, and so present especially worthy targets.<sup>77</sup> Accordingly, the three main objectives of Rubicon seem reasonable: (1) Increasing global sales of their cypher machines that were only readable by advanced states; (2) Where possible suppress the manufacture and sale of secure machines elsewhere and (3) Prevent the sale of secure machines to states that were of particular interest to Rubicon partners.<sup>78</sup> However, as we have seen, part of the value of BND in this operation was its ability to manage the human element of a sigint story, and it is here that Rubicon has to be more carefully considered in the context of our western ethics framework.

Over time, Germany has placed considerable emphasis on the onus of agencies to act in a morally justifiable way. There have been a number of incidents, particularly in the last two decades, when there has been a greater push towards realising this in the context of democratic norms. For example, the Bundestag, Germany parliament, was horrified to discover that its intelligence service, BND, had been assisting the United States in its invasion of Iraq, despite the Franco-German political opposition to the invasion and occupation. More recently, we have seen a dramatic German reaction to revelations by Chelsea Manning and Edward Snowden, equalled only perhaps by the indignation of the French. The Bundestag launched its own investigation into the Snowden affair in 2014 and gradually discovered that BND had been more complicit in global surveillance than many had first suspected. Although the US and UK intelligence agencies have come under particular scrutiny in this respect, what does Rubicon tell us about Germany as a central player in the sigint (and comsec) field during the Cold War, arguably should it follow that German intelligence services are equally beholden to the same ethical standards? How does BND measure up alongside the NSA and GCHQ?

Omand and Phythian, in their path-breaking work on ethics, consider the constant paradox that is posed by intelligence practice in the field. Intelligence is conceptualised as a practice that can deliver public good, but which necessarily breaks ethical boundaries, as it is by definition predominantly the gathering of information by deception or other unsavoury methods. Although, their focus is on the UK's ethical use of intelligence, it provides a helpful introduction to similar questions that might be asked of the German government. Omand and Phythian address two linked notions that could be of utility in analysing BND participation in Rubicon. Firstly, Omand and Phythian draw attention to the link that is often made between legality and morality. This association is particularly true of democracies, where what is legal is equally expected to be considered as moral. It draws our attention to the close connection between the two. Careful consideration of this brings us to the suggestion that there may be occasions on which a law can be broken because breaking it is morally right.<sup>79</sup> In the BND case, we are looking at an example of espionage by one state of another. In simple terms, Rubicon looks like state focused espionage and seems relatively unproblematic. Secondly, Omand and Phythian debate the idea of justifying the use of intelligence. The fact that intelligence gathering traditionally is ethically challenging, indicates an obligation to justify its use in order to ensure it is not misused.<sup>80</sup> In the BND case, this is relevant to determining whether it

could be ethically justified to engage in the global sale of compromised Crypto AG machines, but the targets, who were often sponsoring terrorism surely seem justifiable?

The very nature of intelligence collection presents an ethical and moral dilemma. Rubicon embodies this dilemma on an unprecedented scale. It was revealed that, through Crypto AG machines, the BND and CIA had profound knowledge of South American human rights abuses in the late 1970s. Operation Condor was the collective effort of six South American military dictatorships Chile, Argentina, Bolivia, Paraguay, Uruguay and Brazil to defend their territories and rule against purported challengers, predominantly through extreme violence. Evidence confirms a number of disturbing violations against their own population. This included the imprisonment of nuns and priests, as well as the murder of those who opposed their rule by throwing them out of airplanes without parachutes. To coordinate atrocities and maintain secure communications, the Condor countries relied on manipulated Crypto AG encryption devices.<sup>81</sup> American and German inaction in the face of these human rights violations indicates that there were other (as yet unknown) factors in play during this time. Nevertheless, it has to be recognised that the responsibility of any government is, in the first instance, to maintain national security. There has been an increasing expectation for states (especially in the post-Cold War era) to consider international obligations to uphold human rights. However, obligations to protect international human rights was a fairly new concept in the 1970s and a source of much tension for intelligence agencies.<sup>82</sup> That is not to say that inaction in the face of such violence can or should be overlooked and left unquestioned.

However, there is a further ethics question lurking underneath, which concerns the question of Crypto AG's treatments of its employees. Rubicon looks like a sigint operation, but it is actually a fusion of sigint and humint. Most employees of Crypto AG were unwitting soldiers in an army of communications deception that exploited Switzerland's reputation for neutrality and technical excellence. The original sale of Crypto AG by the CIA and BND would have been undetectable for the majority of its employees. According to records only three people were initially privy to Operation Rubicon, Hagelin himself, his son Bo and the General Manager Sture Nyberg.<sup>83</sup> Secret decision-making such as this was indicative of the practices generally adopted over the next 23 years. The lack of consideration for its employees and their safety was evident in the Bühler Affair (code name Hydra). This episode illuminates two ethical weaknesses within the structure of the Crypto AG operation and eventually contributed to BND leaving Operation Rubicon in a panic. Firstly, the secrecy towards its employees was problematic. Salesmen were routinely sent to unfriendly nations to either sell or maintain compromised machinery. Employees were largely unaware of the real function of their jobs, as were their families.<sup>84</sup> Secondly, the unequal power structure between Germany and the US. Given the history between the two countries, it is evident that although BND was under the control of the German government, they were still very much beholden to the will of the CIA and continually wished to demonstrate their utility in pursuit of an enhanced global status.

Ethically, Hans Bühler was one of the aforementioned Crypto AG employees who was in the firing line. He was a successful salesman, who would frequently visit customers to service Crypto AG equipment. In March 1992, Bühler had made a routine trip to Tehran in Iran. However, the visit did not go as planned. When Bühler did not return and enquiries were made by his sales department it transpired that he had been arrested. Bühler remained in Iranian custody for around a month before his whereabouts had been verified by the Swiss authorities. Bühler remained in custody while suspected of espionage. In November 1992, he was eventually

charged, for unauthorised contact with military personnel, receipt of military information, bribery and illegal consumption of alcohol. There was much debate within the Rubicon partnership when a ransom request was made by the Iranians for \$1 million. After several attempts to source the funds, CIA were knocked back by the White House who prohibited payment of ransom money on policy grounds. It was BND who eventually funnelled Crypto AG funds to Iran for an individual who was an unwitting agent of one of the world's most important intelligence operations.<sup>85</sup>

The ethical issue, and the ensuing moral panic, was almost certainly a strong contributor to the 1993 "Divorce Agreement". The aftermath of the Hans Bühler kidnapping was catastrophic, not only endangering Crypto AG's secrets but its very existence as a major intelligence operation. The CIA did not take kindly to this development. In December 1992, upon Bühler's release, he was asked to sign a non-disclosure agreement with Crypto AG. Bühler's debriefing sessions with Crypto AG CEO Michael Grupe were unsuccessful – they did not get on. Their different views became painfully evident when Bühler began talking to the press about his experience. A self-confessed 'talker', Bühler divulged his entire experience and expressed the doubts of many of his co-workers about their employer. There were several secret attempts to settle with Bühler and prevent his continuous conversations with the press. The publicity storm that Bühler unleashed on Crypto AG threatened not just to rock but capsize the Rubicon boat. Covertly, between television interviews, court dates and Bühler's book publications, Crypto AG changed hands once more. Unbeknownst to the disgruntled workforce that had assembled behind Bühler, from June 1994 Crypto AG was solely owned by CIA.<sup>86</sup>

## **Conclusion**

Germany has played an important and as yet under-explored role in sigint (and comsec) developments in the Cold War period. Furthermore, the function that Siemens has fulfilled on behalf of BND shows that smaller countries (such as Germany) with significant technology leverage have targeted their relationships with NSA and GCHQ. These revelations allow us to question our fixed ideas about Germany and elevate its importance as a significant sigint nation. We now need to rethink Germany (as well as other European countries like Sweden) as major sigint powers. Secondly, this indicates that Germany also carries substantial responsibilities in terms of accountability alongside NSA and GCHQ.

Today, BND exemplifies an impressive blend of humint and sigint operations with a wealth of experience in both. Germany has served as an unsung pioneer in its creation of a 'Mission Impossible' style approach to intelligence that includes active measures. The unified German approach to foreign intelligence is distinctive amongst its allies whose operational elements are often fissiparous and do not always work together seamlessly. For decades the rivalry of MI5 and MI6 was famous, while the FBI, CIA and NSA struggled to co-operate before 9/11, sometimes with disastrous consequences. German activities raise some questions about oversight, not least the extent to which Operation Rubicon was known to anyone other than a few very senior politicians. Nonetheless, it cannot be ignored that despite knowledge of their histories, BND and Siemens together developed a modern and advanced system that was arguably substantially ahead of the curve.

Importantly, Operation Rubicon challenges our Anglo-centric assumption about intelligence during the Cold war and beyond. It provides us with a fresh insight to the historical significance of BND over more than fifty years. It helps to explain why the CIA and NSA appreciated their German ally, maintained an enduring relationship with the BND, and in fact were instrumental in its foundation. The relationship, founded on Germany's strong industrial base, was mutually beneficial. BND was not only the CIA's eyes and ears behind the Iron Curtain, but around the world. Even after the German government took control, the relationship remained stable. The technical support provided by Siemens was also integral to the Crypto AG affiliation. The irony is that Germany's new identity as a unified country and the leader of an increasingly integrated Europe required it to step away from its status as an intelligence great power in 1993, to the evident anguish of some of its most distinguished intelligence officers. Germany's apparent obligation, in turn, tells us much about Europeanness and how one of its most important countries perceives the relationship between espionage and European values.

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<sup>1</sup> Herman, *Intelligence Power*, 2.

<sup>2</sup> Galliot and Reed, *Ethics and the Future of Spying*.

<sup>3</sup> Fürstenau, "Snowden Letter Raises New Questions for Merkel."

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- <sup>4</sup> BBC. 2014. "Snowden NSA: Germany to investigate Merkel 'phone tap'."
- <sup>5</sup> Chase, "Merkel testifies on NSA spying affair, Deutsche Welle".
- <sup>6</sup> Nehring, "Der Geheimdienstcoup des Jahrhunderts [The Security Service Coup of the Century]."
- <sup>7</sup> Davies and Gustafson, "An Agenda for the Comparative Study of Intelligence" in Davies and Gustafson eds. *Intelligence Elsewhere*, 5-13.
- <sup>8</sup> The literature is sizeable but see for example: Richelson and Ball, *The Ties that Bind*; Smith, *The Ultra-Magic Deals*; Hager, *Secret Power*.
- <sup>9</sup> Moran, *Company Confessions*.
- <sup>10</sup> See for example: Snepp, *Decent Interval*; Kessler, *Inside the CIA*; Olmsted, *Challenging the Secret Government*.
- <sup>11</sup> Gaspard, "The Hidden Origins of Intelligence History."
- <sup>12</sup> Andrew and Dilks, eds., *The Missing Dimension*, 1.
- <sup>13</sup> For a discussion of intelligence studies as an academic discipline see, Johnson and Shelton, "Thoughts on the State of Intelligence Studies." 109–20.
- <sup>14</sup> Herrington, "The Debatable Land."
- <sup>15</sup> Aldrich and Kasuku, "Escaping from American Intelligence".
- <sup>16</sup> See for example: Hilsman, *Strategic Intelligence and National Decisions*; Kahn, *The Codebreakers: The Story of Secret Writing*; Kent, *Strategic Intelligence for American World Policy*; Kirkpatrick Jr., *The U.S. Intelligence Community*; Handel, "Avoiding Political and Technological Surprise in the 1980s", in Godson, ed., *Intelligence Requirements for the 1980s*, 85-112; Moynihan, *Secrecy*, 202-227; Andrew and Mitrokhin, *The Mitrokhin Archive*; Barron, *KGB Today*, 227–230; Aldrich, *GCHQ*.
- <sup>17</sup> Smith, *The Secrets of Station X*.
- <sup>18</sup> See Bletchley Park website, <https://bletchleypark.org.uk/>.
- <sup>19</sup> But see Ratcliff, *Delusions of Intelligence*.
- <sup>20</sup> See Koehler, *STASI: The untold story of the East German secret police*; Dedio and Rasch, Ich. *Erich Mielke: Psychogramm des Stasi-Chefs*.
- <sup>21</sup> See Stasi Museum website, <https://www.stasimuseum.de/en/enindex.htm>.
- <sup>22</sup> But see Aid and Wiebes, (eds.) *Secrets of Signals Intelligence during the Cold War and Beyond*; O’Halpin, "Small States and Big Secrets".
- <sup>23</sup> Jacobs, "Maximator: European signals intelligence cooperation, from a Dutch perspective", in this issue.
- <sup>24</sup> Herman, *Intelligence Power*. See also Berridge and Young’s important article, "What is a Great Power?"
- <sup>25</sup> Omand and Phythian, *Principled Spying*.
- <sup>26</sup> For an examination of the German oversight model, see Dietrich, "Of Toothless Windbags, Blind Guardians and Blunt Swords: The Ongoing Controversy about the Reform of Intelligence Services Oversight in Germany."
- <sup>27</sup> Davies, "New information on the history of the Siemens and Halske T52 cipher machines."
- <sup>28</sup> For the avoidance of doubt Siemens & Halske, Siemens-Schuckertwerke and Siemens-Reiniger-Werke merged to form the present-day company called Siemens AG in 1966. This article will refer to any of the former as Siemens in this article.
- <sup>29</sup> Undisclosed BND employee. 2011. "Die Operation Thesaurus." Internal BND document, June.
- <sup>30</sup> Miller, "The Intelligence Coup of the Century."; Miller and Müller, "Documentary: Operation RUBIKON, ZDF; Endres and Vögele, "Geheimdienstaffäre Cryptoleaks-Weltweite Spionage-Operation mit Schweizer Firma aufgedeckt."; Vögele and Endres, "Documentary: Cryptoleaks – Wie CIA und BND mit Schweizer Hilfe weltweit spionierten."
- <sup>31</sup> Hagelin, *The Story of Hagelin Cryptos*.
- <sup>32</sup> Aldrich, *GCHQ*, 202-4.
- <sup>33</sup> CIA, "Minerva, a History." Internal CIA document, 15.
- <sup>34</sup> Jones, "USCIB Memorandum."

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- <sup>35</sup> Friedman, Rough Draft of “Report of Visit to Crypto A.G. (Hagelin) by William F. Friedman”, Special Assistant to the Director, National Security Agency.
- <sup>36</sup> Hechelhammer, “The German Foreign Intelligence Agency (BND): Publicly addressing a clandestine history”, 173.
- <sup>37</sup> Krieger, “German–American Intelligence Relations, 1945–1956: New Evidence on the Origins of the BND.”
- <sup>38</sup> NSA Archives. 1953. Correspondence on “Cryptographic Device of Dr Oskar Vierling.”
- <sup>39</sup> Friedman, “Memorandum”.
- <sup>40</sup> CIA, “Minerva, a History.” Internal CIA document, 16.
- <sup>41</sup> See Martelle and Sotnek, “Hagelin and Friedman: The Gentlemen’s Understanding Behind ‘The Intelligence Coup of the Century’.”
- <sup>42</sup> Friedman, Rough Draft of “Report of Visit to Crypto A.G. (Hagelin) by William F. Friedman, Special Assistant to the Director, National Security Agency.”
- <sup>43</sup> Friedman, “Memorandum for the record, Subject: ‘Hagelin Negotiations’.”
- <sup>44</sup> Friedman, “William Friedman Memorandum for General Canine.”; Friedman, “Memorandum for the record, Subject: ‘Hagelin Negotiations’.”
- <sup>45</sup> Friedman, “Memorandum for the record, Subject: ‘Hagelin Negotiations’.”
- <sup>46</sup> Ibid.
- <sup>47</sup> Ibid.
- <sup>48</sup> Ibid.
- <sup>49</sup> Ibid.
- <sup>50</sup> CIA, “Minerva, a History.” Internal CIA document, 25.
- <sup>51</sup> See Mainwaring, “Division D: The CIA’s Secret SIGINT Empire.” in this issue.
- <sup>52</sup> CIA, “Minerva, a History.” Internal CIA document, 35-36.
- <sup>53</sup> Krieger, “German–American Intelligence Relations, 1945–1956: New Evidence on the Origins of the BND”.
- <sup>54</sup> Ibid.
- <sup>55</sup> Translates as the Code Coordination Bureau the German Federal Cryptographic Authority, which became the Bundesamt für Sicherheit in der Informationstechnik (BSI) in 1991.
- <sup>56</sup> For Operation Ticom see for example, Bamford, *Body of Secrets: Anatomy of the Ultra-Secret National Security Agency*.
- <sup>57</sup> Schmidt-Eenboom, “The Bundesnachrichtendienst, the Bundeswehr and Sigint in the Cold War and After.”
- <sup>58</sup> Ibid.
- <sup>59</sup> Smith, *The Hidden History of Bletchley Park*. Britain’s success, by contrast was the happy fusion of military and civilian elements.
- <sup>60</sup> Jacobs, “Maximator: European signals intelligence cooperation, from a Dutch perspective”.
- <sup>61</sup> Riste, *Norwegian Intelligence*; Jacobsen, “Scandinavia, Sigint and the Cold War”.
- <sup>62</sup> Aldrich, *GCHQ*.
- <sup>63</sup> BND oral history. 2012. “Die Operation Thesaurus.” Internal BND document, October.
- <sup>64</sup> CIA, “Minerva, a History.” Internal CIA document, 16.
- <sup>65</sup> Ibid, p. 38.
- <sup>66</sup> Ibid, p. 40.
- <sup>67</sup> BND oral history. 2012. “Die Operation Thesaurus.” Internal BND document, October.
- <sup>68</sup> CIA, “Minerva, a History.” Internal CIA document, 50-54.
- <sup>69</sup> BND oral history. 2012. “Die Operation Thesaurus.” Internal BND document, October.
- <sup>70</sup> CIA, “Minerva, a History.” Internal CIA document, 54-55.
- <sup>71</sup> Ibid. 54-55.
- <sup>72</sup> Ibid. 42.
- <sup>73</sup> Aldrich, *GCHQ*, 420-32.
- <sup>74</sup> Mainwaring, “Division D: The CIA’s Secret SIGINT Empire.”

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<sup>75</sup> Ibid.

<sup>76</sup> Internal BND document. BND, 13-14 August 2009.

<sup>77</sup> CIA, "Minerva, a History." Internal CIA document, 74-76.

<sup>78</sup> BND oral history. 2012. "Die Operation Thesaurus." Internal BND document, October.

<sup>79</sup> Omand and Phythian, *Principled Spying*, 57; Goldman, "Ethics Phobia and the US Intelligence Community: Just Say 'No'".

<sup>80</sup> Omand and Phythian, *Principled Spying*, 78.

<sup>81</sup> Miller and Müller, "Compromised encryption machines gave CIA window into major human rights abuses in South America".

<sup>82</sup> Omand and Phythian, *Principled Spying*, 12-13.

<sup>83</sup> BND oral history. 2012. "Die Operation Thesaurus." Internal BND document, October.

<sup>84</sup> Vögele and Endres, "Documentary: Cryptoleaks – Wie CIA und BND mit Schweizer Hilfe weltweit spionierten."

<sup>85</sup> Dymidiuk, "Rubicon and Repeated Revelation".

<sup>86</sup> Dobson, "Last Forum of Accountability".