Signals Intelligence in Europe during the Cold War

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Abstract.

Signals Intelligence acquisition was the responsibility of the Government Communications Headquarters (GCHQ) in the UK, and of the Bundesnachrichtendienst (BND) in Germany, both agencies being a loose equivalent in function to the American National Security Agency (NSA). The tasks carried out by the two European intelligence agencies were in some ways overlapping and in some ways complementary: the UK concentrated primarily on the acquisition of ELINT along the Soviet Union’s perimeter. The BND’s focus was more on COMINT, interception of human communications between Warsaw Pact forces along the Eastern NATO border areas. Both agencies cooperated with the Americans in the collection and analysis of information pertaining to the security of NATO countries during the Cold War.

GCHQ and UKUSA SIGINT cooperation.

After the end of WW2, the British Government created a civilian agency from the group of scientists and engineers that had developed the capabilities to crack the German ENIGMA code at Bletchley Park. The new GCHQ headquarters moved to Cheltenham, in the South of England and now reports in to the Foreign Office. Most of what GCHQ does is still classified. However some information emerged after the end of the Cold War as part of a declassification process. Unfortunately the policy of declassification in the UK is stricter than that applied in the US. According to the CIA website, British document pertaining to the activities of GCHQ during the cold war are being released at a 50 year point. This makes an analysis of the operations of GCHQ somewhat difficult, and most information relevant to a comparison
between the operations of NATO country services restricted to those of the 1950s (with some exception for activities that became public domain news.)

After WW2 the British still maintained a significant military presence throughout the Commonwealth countries (former British colonies and protectorates.) In many of these locations joint US/UK SIGINT posts were created. A formal cooperation agreement to share SIGINT information (UKUSA SIGINT) was formalized sometime in 1947-48; the details of this agreement are still secret. The countries participating in this agreement are the USA, the UK, Canada, Australia, and New Zealand. Given the extent of the Commonwealth and its military bases in the immediate post-war years, the UK established a wide network of SIGINT stations in places such as Sri Lanka, South East Asia, Hong Kong, Oman, Crete, Cyprus and had a strong influence in the early SIGINT operations in Canada. Most SIGINT operations in these locations were coordinated by GCHQ.

One of the most comprehensive overviews of GCHQ activities was written by Cees Wiebes. In this article Aldrich examines some of the activities carried out by GCHQ; of particular interest is the overall responsibility that GCHQ took of the ELINT operations around the European perimeter of the Soviet Union. In 1948 the British and the Americans agreed to begin cooperating and sharing ELINT activities.

Given the available surveillance technology at the time (from the early 1950s to the 1970s) Great Britain was very well suited geographically to offer bases out of which flights could be flown to the edge of Soviet airspace and ships could sail to the edge of Soviet territorial waters. Two important strategic issues for the US and NATO countries were the need to get information on the movements of the Soviet Navy operating out their Murmansk base and on the radar coverage of the Soviet Union’s borders. Soviet submarines sailing in to the Atlantic Ocean (and therefore gaining access to the Continental USA) were based in Murmansk that was the headquarters of the Russian Northern Fleet. According to Aldrich the US began “ferret” flights in to the Barents Sea area and Spitsbergen Islands, and the Baltic Sea and the coast of Latvia and Estonia out of Scotland from 1948 to test Soviet air
defenses. US and UK SIGINT bases in Scotland and East Anglia provided support for air and naval operations. In a study on the role Scotland played for US SIGINT operations during the Cold War David Mackay writes:

The UK’s geographical position was essential for the US intelligence units to test Soviet air defences; probe flights would leave from Prestwick and cross into Soviet air space. Occasionally these flights would discover a new signal from a previously unknown source, such as radar. These missions could be designated as unilateral, NATO or even US/UK activities

![Figure 1: US SIGINT bases in Scotland](image-url)

Other UK ELINT operations to survey Soviet northern missile bases were carried out in the 1950s by modified B29 bombers equipped with ELINT Radar, cameras and Countermeasures payloads. The ELINT variant of the B29, the RB-50G, carried an RCA SHORAN (SHOrt-RANge) survey radar for navigation and for
detailed geodetic surveys. These aircraft operated out of the Royal Air Force’s base at Lakenheath in East Anglia.

Although they weren’t part of the UKUSA agreement, cooperation in collection of intel through air operations was also given by the Norwegians and Sweden as they had an even greater geographical advantage for the surveillance of the Soviet Baltic and Murmansk areas.

The British also cooperated with the US in SIGINT collection operations at sea. The Soviet sea route out of Murmansk into the Atlantic Ocean passed through what was known as the GIUK (Greenland-Iceland-UK) Gap. Once again Scotland was the natural geographic location for UK/US naval intelligence bases. The US Navy operated SIGINT stations out of Edzell and Thurso to support their Polaris nuclear submarine fleet based in Holy Loch, according to Mackay, although the details of the activities carried out in these locations is still not known. However a large HF listening post was constructed at Edzell that managed to monitor communications during the USS Pueblo incident in North Korean waters.

A number of British ELINT equipped spy ships also were deployed at the edge of Soviet territorial waters in the Barents Sea and in the Baltic for naval “ferret” operations. Soviet naval operations were monitored through a chain of British listening posts in Kiel. These operations were risky and some resulted in tragedy. British cooperation on spying operations was subject to political realities, and at times was curtailed to avoid escalating tensions with the Soviet Union. After an incident resulting in the death of a British operative, Lionel Crabb, in 1956, during an operation against a Soviet cruiser, the British Government canceled a number of joint US/UK naval and air operations.

**GCHQ and COMINT/COMSEC work.**

Although a large part of the work done during the Cold War by GCHQ was in cooperation with the Americans in ELINT collection, the British Agency leveraged its original crypto expertise it had gained during WW2 at Bletchley Park to analyze
and develop communications security. The driver for this work was the increased Soviet bugging activity in the UK and in its diplomatic sites abroad. GCHQ countered by tapping communications lines and further developing cryptanalysis tools. Interestingly it was out of this work that two British cryptographers working for GCHQ invented the public key encryption process that was later and separately developed and made famous by Rivest, Shamir and Aldeman in the United States. Although James Ellis and Clifford Cocks had discovered the process of public key exchange over a decade earlier than the RSA group, they were not allowed to talk about their work in public. It wasn’t until 1997 that they were given the recognition they deserved when Cocks presented the original work at the Institute of Mathematics and its Applications Conference in the UK.

The Bundesnachrichtendienst and the Bundeswehr activities.

The German Federal Information Service (Bundesnachrichtendienst or BND) was founded in 1956 from what then was the Organisation Gehlen (OG), a joint US-German military intelligence operation run by Maj. Gen Reinhart Gehlen, a former Nazi intelligence officer. Unlike GCHQ that reports to the British Foreign Office, BND reports directly to the office of the German Chancellor. As for understanding the operations of the BND, the difficulties in obtaining publicly available information are even greater than getting information of the activities of GCHQ. According to L. V. Scott “The Bundesnachrichtendienst (BND), the single German (until 1990 only West German) intelligence service responsible for foreign and for a good portion of military intelligence, has yet to declassify a single page from its files.”

Today the BND is quite unique in the world of intelligence. According to Hans Georg Wieck, the BND President from 1985 to 1990, the BND is the only intelligence agency worldwide that has full responsibility for the collection and analysis of intelligence for both civilian and military purposes. This represents a recent evolution of responsibilities for the BND. In the immediate years following its inception, the BND was
the main provider for the Government of intelligence based information and analysis of:
• the Soviet Union,
• the military and the ideological threat to Germany, including the exposed situation of Berlin in particular and to the West in general,
• the Soviet control of the satellite region and
• the ways and means in which the Soviet Union pursued the ideological and political penetration of our countries\textsuperscript{ix}.

Moreover, during the years of the Cold War the BND also had the very important military task to

… ensure - in cooperation with others – that the Alliance would obtain at least eight days of early warning for an incumbent military attack - across Germany, across the European continent. Under such conditions NATO forces could be reinforced and could reach their defensive positions on the East West Divide\textsuperscript{v}.

In order to achieve these objectives the BND developed and managed a comprehensive SIGINT expertise. The objectives of the BND were much more focused on the central European theatre as opposed to those of GCHQ that were more strategic in nature. The objectives also required the BND to focus much more on COMINT and radio interception, rather than ELINT programs.

Erich Schmidt-Eenboom observes that West Germany, as a frontline state, had

… was that it was perfectly positioned from a geographical standpoint to closely monitor the radio and electronic emissions emanating from the Warsaw Pact military forces in neighboring East Germany and Czechoslovakia. It’s geographical position on the forward edge of the potential battlefield also meant that German SIGINT could hear targets deeper in to the Soviet hinterland than Western intercepts located further back\textsuperscript{xi}. 
German SIGINT capabilities were strengthened following the Cuban missile crisis. Wieck recalls one of the BND’s successes just prior to this event thus:

BND offered a fair and reliable amount of intelligence for the assessment of Soviet and Soviet block Forces, in particular regarding the elaboration of an early warning system for Soviet military operations against NATO protected territory. This was always top priority for the BND – in close cooperation with the German Armed forces. As reported on the occasion of an earlier session of the International association of Intelligence History, the BND warned the USA in 1962 about the upcoming deployment of Soviet missiles to Cuba. And Soviet sources confirmed this reporting, as we now know\textsuperscript{xii}.

The success in intercepting this information resulted in additional HF Direction Finding systems being installed by the Bundeswehr SIGINT battalions.

Although the BND’s tasks above required full cooperation with NATO Allies’ intelligence services, the German Government wanted the agency to focus more on political intelligence and the developments in East Germany. These requirements put a strain on the resources of the BND and it found itself in competition with the Army’s, or Bundeswehr’s, military SIGINT arm, the Amt fuer Nachrichtenwesen der Bundeswehr (ANBw.) According to Wieck, part of the BND’s problems stemmed from the fact that that the BND had become a federal agency in 1956 from a US driven organization, and had not been restructured to best serve its new paymasters; Wieck writes that

… the Federal Government transformed the Organisation Gehlen into a German administrative Structure without major organizational readjustments and reforms lead to the emergence of prejudice and suspicion, namely that the BND continued to be under US influence. And

… that poor performance and apparent deficiencies of the BND work were compensated by a growing dependence on US inputs into the reports of the
So, although the BND cooperated with the US Intelligence agencies, this reduced its capability to provide information of national interest. Schmidt-Eenboom writes that this issue was addressed in 1982 when the BND received further funding to expand its SIGINT activities. The BND’s SIGINT capability was also used as a trading card, allowing the BND to exchange information collected through its systems with the US and NATO allies in exchange for additional monitoring equipment. The BND often collaborated with the US and used American computing facilities to help its deciphering work, but it had a respectable capability on its own. Indeed, as Wieck recalls, in the 80s one of BND’s successes was to decipher “the report of the Libyan Embassy in East-Berlin regarding the “successful” implementation of the bomb attack on the Discotheque La Belle in Berlin (West) in the late eighties.”

Conclusions.

Intelligence cooperation between NATO countries was dictated by necessity and political alliances during the Cold War. The strategic threat was probably simpler than what it is today: the enemies then were State actors and there was a clear ideological divide that coincided with hard borders. The targets of intelligence collection were known and military and political cooperation were part of the strategic plans of all nations concerned.

The issues are far more complex today, as non-State actors require intelligence agencies to be more tuned to domestic threats. This is probably even more so in Europe that hosts a large Muslim population.

However the foundations laid down during the Cold War cooperation are just as necessary today, as it will be only with information sharing that transnational insurgencies and terrorism threats can be detected and prevented.
RQ310 Mid - Term essay: GCHQ and BND in the Cold War.
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