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Oslo Report

The **Oslo Report** was one of the most spectacular leaks in the history of military intelligence. Written by German mathematician and physicist [Hans Ferdinand Mayer](#) on November 1 and 2, 1939 during a business trip to [Oslo, Norway](#), it described several [German](#) weapons systems, current and future.

Mayer mailed the report anonymously in the form of two letters to the [British](#) Embassy in Oslo, where they were passed on to MI6 in [London](#) for further analysis, and proved to be an invaluable resource to the British in developing counter-measures, especially to navigational and targeting [radars](#), and contributed to the British winning the [Battle of Britain](#).

Background

Hans Ferdinand Mayer received his doctorate in physics from the [University of Heidelberg](#) in 1920. After spending two years as a research associate there in his doctoral supervisor's ([Philipp Lenard](#)) laboratory, he joined Siemens AG in 1922. He became interested in telecommunications and joined Siemens's communication research laboratory, becoming its director in 1936. Because of this position, he had contacts all over Europe and the United States and had access to a wide range of information about electronics development in Germany, especially in the military sector.

After Hitler invaded Poland on September 1, 1939, Mayer decided to divulge to the British as much as he could about military secrets to defeat the Nazi regime. He arranged a business trip to [Scandinavia](#) in late October 1939. He arrived at his first scheduled stop, [Oslo, Norway](#), on October 30, 1939 and checked into the Hotel Bristol.

Mayer borrowed a typewriter from the hotel, and typed the seven-page Oslo Report in the form of two letters over two days. He mailed the first on November 1, which asked the British military attaché to arrange for the BBC World Service to alter the introduction to its German language programme if he wished to receive the Report. This was done, and he sent the Report along with a vacuum tube from a prototype [proximity fuze](#).

He also wrote a letter to his longtime British friend Henry Cobden Turner, asking him to communicate with him via their Danish colleague Niels Holmblad. This indirect communication path was required since Britain and Germany were at war, but [Denmark](#) was at that time neutral. Mayer continued his travels to [Denmark](#) to visit Holmblad, asking if he could relay information between himself and Turner. Holmblad readily agreed, but once Hitler [invaded Denmark](#) on April 9, 1940, this communication route was no longer feasible. Mayer then returned to Germany. Although Mayer was arrested by the [Gestapo](#) in 1943 and was imprisoned in concentration camps until the war ended, the Nazis never knew of the Oslo Report.

British reaction

On 4 November 1939, Captain Hector Boyes, the Naval Attaché at the British Embassy in Oslo, received an anonymous letter offering him a secret report on the latest German technical developments. To receive the report, all he had to do was arrange for the usual announcement of the [BBC World Service's](#) German language broadcast to be changed to "Hullo, hier ist London". This was done, and resulted in the delivery of a parcel a week later which contained a typewritten document and a type of [vacuum tube](#), a sensor for a [proximity fuze](#) for shells or bombs. The typewritten document accompanying it became famous after its existence was revealed in 1947 and would go down in history as the "Oslo Report".^[1]

Boyes quickly appreciated the Report's potential importance and had a member of the embassy staff make a translation which he forwarded to MI6 in London along with the original.

The Oslo Report was received with indifference or even disbelief by British Intelligence, the notable exception was [Dr. R.V. Jones](#), a young Ph.D. physicist who had recently been put in charge of a new field called "Scientific Intelligence". Jones argued that despite the breadth of information and a few inaccuracies, the technical details were correct and argued that all the electronic systems divulged therein be further explored. In a 1940 report, Jones summarized his thoughts. ^[2]

The contribution of this source to the present problem may be summarised in the statements that the Germans were bringing into use an R.D.F. [Radio Direction Finding, the British name for radar] system similar to our own,... A careful review of the whole report leaves only two possible conclusions: (1) that it was a "plant" to persuade us that the Germans were as well advanced as ourselves or (2) that the source was genuinely disaffected from Germany, and wished to tell us all he knew. The general accuracy of the information, the gratuitous presentation of the fuze, and the fact that the source made no effort, as far as it is known, to exploit the matter, together with the subsequent course of the war and our recent awakening with Knickebein, weigh heavily in favour of the second conclusion. It seems, then, that the source was reliable, and he was manifestly competent.

In his 1989 book, ^[3] Jones summarized the importance of the Oslo Report as follows:

It was probably the best single report received from any source during the war. ...Overall, of course, the contributions from other sources such as the Enigma decrypts, aerial photographs, and reports from the [Resistance](#), outweighed the Oslo contribution, but these were all made from organizations involving many, sometimes thousands of individuals and operating throughout most of the war. The Oslo Report, we believed, had been written by a single individual who in one great flash had given us a synoptic glimpse of much of what was foreshadowed in German military electronics.

While Jones took the Oslo Report very seriously, the Admiralty for one thought that the Report was "too good to be true" and therefore had to be a devious deception by the [Abwehr](#), with its fantastic claims written by psychological warfare experts. An additional argument raised by the doubters was that no single person could have such wide knowledge of weapons technology as discussed in the Report. This was mainly due to the fact that interforce co-operation, e.g. between the Navy and Airforce, was at the time poor in both Britain and the US, and it was known that in Germany the two organisations were virtually at war between themselves.

In fact, the Oslo Report is strongly focused - on electronic technology - and several major German companies were involved in such projects for all three armed forces; some scientists in these companies would indeed have had a wide-ranging overview.

Report Contents

The original typed report was seven pages long. It was retyped, with a number of carbon copies being made for distribution. A specimen of the original translation is unobtainable, and the German version held by the [Imperial War Museum](#) is one of the carbon copies and lacks the sketches that were apparently included in Mayer's original. A typed copy in German can also be found in the Public Records Office. ^[4], while the Report has been published twice in English translation. ^{[5][6]}

The section headings given here correspond to those in the Report. Some of the information Mayer heard was second-hand and later proved to be incorrect.

1. Ju 88 Program

The Junkers 88 light bomber production levels are stated to be probably 5,000 per month, with a total of over 25-30,000 predicted to be produced by April 1940. This was an exaggeration of production levels and total production. The date, April 1940, is significant in that it corresponded with Hitler's [invasion](#) of western [Europe](#).

2. The "Franken"

The report states that the German navy's first aircraft carrier is at [Kiel](#), and was expected to be finished in April 1940. The carrier was referred to as *Franken*, when it was in fact named *Graf Zeppelin*. In the event, the carrier was never completed.

3. Remote controlled gliders

This section of the report described remote-controlled gliders of 3 m (9.8 ft) wingspan and 3 m (9.8 ft) length, carrying an explosive charge, and fitted with an altimeter intended to maintain them at an altitude of 3 m (9.8 ft) above the water, the horizontal stage of their flight to be powered by a rocket engine. This description is similar to the ultimately unsuccessful Blohm & Voss Bv 143

4. Autopilot

Here, Mayer briefly described another remote-controlled system, this time for an aircraft instead of for a rocket.

5. Remote-controlled projectiles

The German word *Geschoss* was used in the report, which can also be translated to mean [artillery shell](#), but the German text clearly states that a rocket was meant. This is also clear from the remark that the projectile is highly unstable when fired, while artillery shells would be spin-stabilized, or fin-stabilized in the case of [mortar](#) projectiles.

The mentioned size of 80 cm (31 in) calibre was seen as a curious item at the time; even by 1943 British rocket developers were focused on solid fuels, and thinking in diameters of around 3 in (76 mm); a solid fuel rocket of more than ten times this diameter would have caused a [credibility gap](#), which did in fact happen when more information later became available to British intelligence. With hindsight, the description can be recognised as the A8 rocket, which had a diameter of 78 cm (31 in).

The one crucial item of information missed out by the author of the Oslo Report was the use of liquid fuels in the German ballistic rocket program.

6. Rechlin

[Rechlin](#) is a small town located on the Lake [Müritz](#) north of [Berlin](#). Mayer noted that the [Luftwaffe](#)'s laboratories and research centers were there, and that it was a "worthwhile point of attack" for bombers.

7. Methods of attacks on bunkers

Mayer noted during the invasion of Poland in 1939, Polish bunkers were attacked using smoke shell which forced their crews to withdraw deeper into the bunkers, following which soldiers armed with flame throwers attacked under cover of the smoke. Revealing these tactics employed by the Wehrmacht is perhaps the most mundane information provided by the Oslo Report.

8. Air raid warning equipment

Mayer mentions that the British air raid on [Wilhelmshaven](#) in September 1939 was detected while the aircraft were 120 km (75 mi) from the German coast using [radar](#). He also gives the technical characteristics of the German early-warning radar systems; [power](#), [pulse duration](#), range) were described in some detail, along with counter-measures that could exploit the radar system's vulnerabilities. However, Mayer did not know the last critical piece of information: the [wavelength](#).

He also noted that the system was being installed on Ju 88 bombers, the first instance of an airborne radar. Again, he mentioned the date of April 1940 as the deadline for installation of this radar. He described a similar second system that was under development at the time that operated at a 50 cm wavelength.

The section of the report revealed Mayer's depth of knowledge of radar technology. The operational radar principle he revealed - a short burst of transmitted energy, measuring the time-of-flight and calculating range from it - was known by the British and was in fact being used in the [Chain Home](#) early warning radar.

Revealing the details of the system under development allowed the British to invent a simple countermeasure they called Window, which consisted of long strips of aluminium foil of a length designed to optimally reflect the German 50 cm radar signals, [jamming](#) them. It turned out that 50 cm was a standard wavelength that all German defensive radars used, which made Window a very effective way of blinding all their defensive radar systems following its introduction in the Hamburg raid of 24 July 1943 (see Operation Gomorrah).

9. Aircraft rangefinder

Mayer described a system being developed at Rechlin for navigating German bombers to their targets, which used a single radio transmission to accurately locate a bomber's range from the transmitter. This was the *X-Gerät* (X-device), which was based on the prewar Lorenz [blind-landing](#) aid installed at many German airports. Mayer gave the wavelength as 6 m (20 ft).

10. Torpedoes

Mayer described two new types of torpedoes in service with the German navy.

The first was designed to be used from distances of 10 km (6.2 mi). It was intended to be steered into rough proximity to a convoy using a long wave radio receiver, when two acoustic receivers in the head of the torpedo would take over when it came within a few hundred metres of a ship.

The second type of torpedo (mentioned as the same type that was used to sink *HMS Royal Oak* in 1939), was described as having a magnetic fuze designed to detect the deviations in the [Earth's magnetic field](#) caused by a ship's metal hull and explode beneath its keel. Mayer described the general principle of the fuze and suggested that it could be defended against by generating a suitable magnetic field.

11. Electric fuzes for bombs and shells

The final section of the report described how mechanical [fuses](#) for artillery shells were being discontinued in favour of electrical fuzes, and mentioned that all bombs already had electrical fuzes. Mayer described the working of bomb fuzes and described electrical time fuzes.

Mayer also mentioned an idea for a [proximity fuze](#), i.e. a fuze that detonates a warhead at a set distance from a target. The fuze he described sensed its target by changes in partial capacitances, which in practice turned out to be impracticable. He also not only mentioned its anti-aircraft applications, but also its application to anti-personnel artillery shells, an application which was later employed by the Allies.

Mayer concluded with mentioning that the fuzes were manufactured by [Rheinmetall](#) in [Sömmerda, Thüringen](#).

Divulging the Report and the Author

On February 12, 1947, Jones gave an invited talk to the [Royal United Service Institution](#) that publicly revealed for the first time the existence and importance of the Oslo Report. ^[7]

It [the Oslo Report] told us that the Germans had two kinds of radar equipment, that large rockets were being developed, that there was an important experimental establishment at [Peenemünde](#) and that rocket-driven glider bombs were being tried

there. There was also other information---so much of it in fact that many people argued that it must be a plant by the Germans, because no one man could possibly have known all of the developments that the report described. But as the War progressed and one development after another actually appeared, it was obvious that the report was largely correct; and in the few dull moments of the War I used to look up the Oslo report to see what should be coming along next.

This part of his talk caught the eye of the press and it was widely publicized. He revealed some of the Report's contents, holding back many details to test anyone claiming authorship. But neither Henry Cobden Turner nor Mayer heard of the talk at the time.

By chance, not only were both Turner and Jones on the same voyage of the *Queen Mary* in 1953, they also sat at the same dinner table one evening. They found much in common and Jones invited Turner to a dinner at his London club. On December 15, 1953 the dinner was arranged, during which one of Jones's friends, Professor Frederick Norman of [King's College London](#), excitedly shouts "Oslo!!". Turner and Norman privately tell Jones over after-dinner drinks that Turner had heard from his old German friend, Hans Ferdinand Mayer, at the beginning of the war in a letter written from Oslo. Upon learning of Mayer's background and position at [Siemens](#), Jones decided to open a correspondence with Mayer using Turner as a middleman.

Jones and Mayer met at a 1955 radar conference in [Munich](#) and had dinner with Turner at Mayer's house. Jones quickly determined that Mayer had indeed written the Oslo Report. They agreed that immediately divulging who had written the Oslo Report would serve no purpose and both agreed to silence. They continued to exchange letters, with Mayer providing more details about how he wrote it. Jones decided to write a book about his wartime scientific intelligence work for MI6, but it did not appear until 1978. In it, he discussed how he used the Oslo Report, but did not reveal the author. ^[8]

Inevitably, the question will be asked regarding my own ideas about the identity of the Oslo author. I believe that I know, but the way in which the identity was revealed to me was so extraordinary that it may well not be credited. In any event, it belongs to a later period, and the denouement must wait until then.

Mayer died in 1980 without being publicly acknowledged as the author. Jones's sequel, published in 1989, revealed the author's identity.

Notes

1. ^ West, Nigel (1983). *MI6: British Secret Intelligence Service Operations, 1909-45*. Random House. ISBN 0394539400.
2. ^ R.V. Jones. Air Scientific Intelligence Report No. 7, *The Edda Revisited*, 17 July 1940. Churchill Archives Centre, Cambridge University, Reginald Victor Jones Papers, RVJO B.24
3. ^ R.V. Jones (1989), p. 275.
4. ^ Public Records Office, AIR 40/2572.
5. ^ F.H. Hinsley (1979), Appendix 5.
6. ^ R.V. Jones (1989), Appendix A.
7. ^ R.V. Jones. Scientific Intelligence. *J. Royal United Services Institution*, **42**: 352-369, 1947.
8. ^ R.V. Jones (1978), p. 71.

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