



University
of Exeter



*Figure 1 Generaloberst Heinz Guderian, photo taken from
MI14 'Who's Who' of the German Army - WO 208 / 4412*

HIH3005 Undergraduate Dissertation

Heinz Guderian's Panzers in Allied Eyes: Intelligence
Perceptions during Operation Barbarossa, June-December
1941

May 2026
Student Number: 730010351

Statement of Aims

This dissertation examines how British and American intelligence perceived Heinz Guderian's Panzer formation during Operation Barbarossa from 22 June to 25 December 1941. At the time of writing, no study has compared how the British and American intelligence apparatuses understood a named formation across a full Second World War campaign. Operation Barbarossa, the largest land invasion in human history, is among the most studied campaigns of any conflict. Intelligence scholars and military historians alike have covered the Eastern Front in extensive detail, but the two fields have not been united into a comparative examination of what the Allies understood about a specific formation. My interest lies in this very gap: tracing what British and American intelligence knew about Guderian's Panzers, how they gained that information, and what the differences between the two pictures reveal. This dissertation draws on records viewed in person at the National Archives in Kew, and digitised versions accessed via Gale, namely the HW 1, HW 5, HW 11, and HW 13 series. The British records are analysed alongside American diplomatic and attaché cables from NARA, and German operational records from the captured *Kriegstagebuch*. My study aims to expand understanding of how Allied intelligence functioned at the formation level, tracing the British and American pictures across six months of 1941 and reflecting on the asymmetry between them. This dissertation adds a comparative intelligence dimension to the existing scholarship on Guderian's armour and Operation Barbarossa, while contributing to the broader historiography of Ultra and the Anglo-American intelligence relationship.

Table of Contents

Statement of Aims	2
Table of Contents.....	3
Acknowledgments	4
List of Maps and Figures	5
Glossary	6
Introduction.....	8
From Smolensk to Kiev: British Intelligence and <i>Panzergruppe 2</i> , June-September 1941	19
From Typhoon to Collapse: British Intelligence and 2nd Panzer Army, October-December 1941.....	30
A Distant Picture: American Intelligence and Guderian's Panzers, 1941	40
Conclusion	47
Bibliography	51



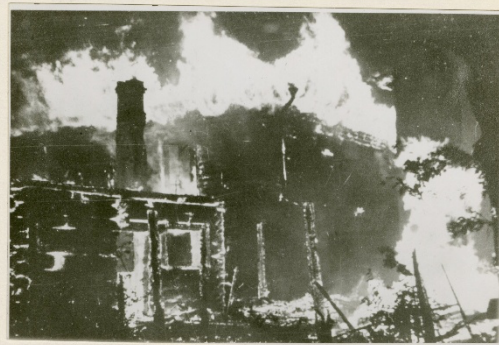
Acknowledgments

First, I would like to thank my supervisor, Dr Nicholas Terry. His guidance and knowledge have supported me through the entire dissertation process, and I am very grateful for his insight.

Second, I would like to thank my family; Mum, Dad, Max and Ivy, who have offered encouragement every step of the way through my degree and helped me get over the final hurdle.

I would also like to thank Julie and Casper at the National Archives, who helped me every day during my week in Kew, offering support and answering my hundreds of questions.

I would like to thank my housemates, Deng, Gib, Jones, Jorja, Kewl, Massey and Spedding. While they were not always necessarily the most supportive, they certainly motivated me to produce the best work I possibly could. Lastly, to Freddie and Tom, to whom this work is dedicated.



200
~~273~~-GT-115 July 16-17. Smolensk
in flames during the night.

List of Maps and Figures

Figure 1 Generaloberst Heinz Guderian, photo taken from MI14 'Who's Who' of the German Army - WO 208 / 4412	1
Figure 2: HW 5/23 Koluft Panzer 2 report from 17/07/41	22
Figure 3 WO 208/1764 Situation map for 15.07.41. Annotations and arrows added using information gathered from the German record.	24
Figure 4 German Lage Map for 12.07.41 - Mentioned divisions are circled.	26
Figure 5: War Office 208 /1765 situation map for 27.10.41	35
Figure 6 German Lage Map for 27.10.41	36



200
~~273~~-GT-76 Generaloberst Guderian
 observing the bridge.

Glossary

Abbreviations:

AHA: American Historical Association.

A.F.V.: Armoured Fighting Vehicles.

BRUSA: British-United States of America Agreement (1943).

CIA: Central Intelligence Agency.

COI: Office of the Coordinator of Information

CX/MSS: Report generated by MI6/ Most Secret Source - Used as Bletchley Park decrypt prefix.

GC&CS: Government Code and Cypher School.

GCHQ: Government Communications Headquarters (renamed from GC&CS in 1946).

JIC: Joint Intelligence Committee.

MID: Military Intelligence Department.

MI14: British Military Intelligence, Section 14, responsible for understanding the German Army.

NARA: National Archives and Records Administration

RG: Record Group.

SIGINT: Signals Intelligence.

SIS: Signal Intelligence Service (U.S.).

TNA: The National Archives.

WO: War Office.

Glossary

German terms:

Absicht: Intention.

Achtung-Panzer!: Attention-Tanks!

Auffrischen: To replenish, reconstitute, or restore.

Erinnerungen eines Soldaten: The Memories of a Soldier.

FLIVO: *Fliegerverbindungsoffizier* (Air Liaison Officer).

Generaloberst: Colonel-General, the second-highest general officer rank in the German military.

Heer: German Army.

Koluft: Kommandeur der Luftwaffe, support and reconnaissance groups attached to German army Corps.

Kriegstagebuch: War Diary.

Lage: Location.

Luftwaffe: German Air Force.

OKH: *Oberkommando des Heeres* (German army high command).

Panzer: Armour or tank.

Panzerarmee: Panzer Army.

Panzergruppe: Panzer Group.

Rasputitsa: The mud season; period in Russia when roads are impassable due to weather conditions.

Tagesmeldung: Daily report.

Unverändert schlecht: Remaining poor.

Wehrmacht: German armed forces.

Introduction

On June 22, 1941, Germany launched Operation Barbarossa, the largest land invasion in history, involving six million soldiers, along a front that spanned from the Baltic to the Black Sea.¹ *Panzergruppe 2*, commanded by *Generaloberst* Heinz Guderian, tore into Soviet-held territory as one of four armoured spearheads that comprised the German assault. Over the first months of the invasion, Guderian's Panzers completed encirclements of Minsk and Smolensk, before executing a diversion that closed the Kiev pocket in September. On October 6, 1941, *Panzergruppe 2* was redesignated as the 2nd *Panzerarmee* and drove toward Moscow as part of Operation Typhoon before being halted outside Tula in December.² Guderian led the formation from May 1939 (Under the XIX motorised Corps) until December 25, 1941, and during Barbarossa, his command initially comprised three Panzer Corps: the 24th, the 46th, and the 47th.³ The duration of this study extends from Barbarossa's opening on June 22 until Guderian's dismissal on Christmas Day 1941. For clarity, this study uses *Panzergruppe 2* and the 2nd Panzer Army interchangeably, according to the designation relevant to the period under discussion. The geographical scope of this study is the Eastern Front between the Bug River and the outskirts of Moscow, the portion of the front assigned to Army Group Centre, of which Guderian's armour was a part.

¹ Robert Kirchubel, *Operation Barbarossa: The German Invasion of Soviet Russia* (Oxford: Bloomsbury Publishing, 2013), p. 13.

² Kenneth Macksey, *Guderian: Panzer General* (London: MacDonald and Jane's, 1975), p. 155; David M. Glantz and Jonathan House, *When Titans Clashed: How the Red Army Stopped Hitler* (Lawrence: University Press of Kansas, 1995), pp. 100-101.

³ Samuel W. Mitcham, *Hitler's Legions: The German Army Order of Battle, World War II* (London: Leo Cooper, 1985), pp. 345-394, p. 496. Accessed via <https://archive.org/details/hitlerslegionsge0000mitc/page/496/mode/2up>.

The British intelligence apparatus that monitored Guderian's panzers had been transformed by two years of war. At its core was GC&CS, based at Bletchley Park.⁴ In December 1932, Polish cryptologists Rejewski, Różycki, and Zygalski broke the Enigma cypher through a mathematical analysis of intercepted German traffic.⁵ In Warsaw in July 1939, the Polish Cypher Bureau gave British representatives a copy of the German Enigma machine.⁶ Building on this critical, and frequently understated, contribution of the Polish codebreakers, Alan Turing and his colleagues developed the Bombe machine, which exploited known or guessed plaintexts, known as cribs, to decrypt German military communications.⁷ The breaking of Enigma in 1940 allowed British intelligence to access *Wehrmacht* operational traffic, producing SIGINT codenamed Ultra. Scholars such as F.H. Hinsley have argued that access to Ultra significantly shortened the war.⁸ However, while Hinsley's claim correctly emphasises the importance of Ultra, one would refrain from making claims like this so as not to be deterministic and teleological. The Joint Intelligence Committee (JIC), established in 1936, coordinated assessments across the entire British intelligence apparatus, providing the framework for processing Ultra, and keeping senior British officials informed on matters of national security.⁹ American intelligence operated under fundamentally different conditions.

⁴ For information on GC&CS, see: John Ferris, *Behind the Enigma: The Authorised History of GCHQ, Britain's Cyber-Intelligence Agency* (London: Bloomsbury, 2020).

⁵ Christopher Kasparek, "Enigma and Poland Revisited," *The Polish Review* 47, no. 1 (2002): p. 97.

⁶ Ibid. For more on the contribution of Polish codebreakers, see Dermot Turing, *X, Y & Z: The Real Story of How Enigma Was Broken* (Stroud: The History Press, 2018).

⁷ Michael Smith, "How It Began: Bletchley Park Goes to War," in *Colossus: The Secrets of Bletchley Park's Codebreaking Computers*, ed. B. Jack Copeland (Oxford: Oxford University Press, 2006), p. 32; Tony Sale, comp., *The Bletchley Park 1944 Cryptographic Dictionary* (2001), p. 22, accessed 28 April 2026, <https://www.codesandciphers.org.uk/documents/cryptdict/crypttxt.pdf>.

⁸ F. H. Hinsley and Alan Stripp, eds., *Codebreakers: The Inside Story of Bletchley Park* (Oxford: Oxford University Press, 1993), p. 11; On the Bombe machine and Turing's contribution, see Andrew Hodges, *Alan Turing: The Enigma* (London: Burnett Books, 1983).

⁹ Percy Cradock, *Know Your Enemy: How the Joint Intelligence Committee Saw the World* (London: John Murray, 2002), pp. 1-2.

The first centralised American intelligence organisation, the Office of the Coordinator of Information (COI), was not established until July 1941. While the US possessed its own signals capability, it did not have access to British-derived Ultra until the BRUSA Agreement of 1943, which allowed the “Anglo-American cryptanalytic partnership” to flourish for the rest of the war.¹⁰

Following Guderian’s armour across six months raises a series of questions regarding the Allied intelligence picture of the formation. For instance, how accurately did British intelligence track Guderian’s Panzers? Through what mechanisms did it achieve visibility? Moreover, what were the structural limits of the British picture, and did those limits vary across the campaign? Furthermore, how did American intelligence picture the same formation, and how did this compare to the British understanding? This study’s central argument is that the two powers were not just looking at the same campaign from different angles, but were operating in different intelligence environments. British intelligence, equipped with Ultra Signals, achieved near-real-time visibility of Guderian’s armour. However, due to Ultra's top-secret nature, the British picture of Guderian was structurally uneven across its intelligence apparatus. American intelligence, by comparison, lacked consistent access to Ultra and, therefore, assembled its picture from a distance. This dissertation weighs its analysis according to these circumstances, treating the British and American pictures asymmetrically, reflecting the profound difference in their capabilities in 1941. Chapter One examines British intelligence perceptions of *Panzergruppe 2* from June to September 1941, tracing the formation from its first Ultra identification in late June, through to the tracking of the Kiev operation. Chapter Two then extends this analysis through to Operation Typhoon and the December collapse,

¹⁰ Bradley F. Smith, *The Ultra-Magic Deals and the Most Secret Special Relationship, 1940-1946* (Novato, CA: Presidio Press, 1993), p. 153; J. C. Sims, "The BRUSA Agreement of May 17, 1943," *Cryptologia* 21, no. 1 (1997): p. 30.

examining how the degradation of Guderian's Panzer army was understood. Finally, Chapter Three compares the British and American pictures, drawing on attaché cables, diplomatic reporting, and open-source material to demonstrate what was achievable without consistent Ultra access.

The scholarship surrounding this study's subject falls broadly into three categories. The first is the work that focuses on Guderian himself, analysing his character, doctrine, and career. Russell Hart has examined Guderian's early life, investigating his strong military background, which he argues profoundly shaped Guderian's future professional ambitions.¹¹ Pier Battistelli, alongside Hart and Macksey, has analysed Guderian's early military career, demonstrating how his service in the First World War convinced him of the potential of a motorised approach to warfare, leading him to write five papers in *Militar-Wochenblatt* between 1922 and 1928 advocating an armoured doctrine.¹² Guderian's own account of Barbarossa is presented in his 1950 memoir, *Panzer Leader*. As Craig Luther has highlighted, Guderian curated his memoir in a post-war climate, seeking to establish intellectual priority, burnish his reputation, and describe his version of events that led to his dismissal in December 1941.¹³ Memoirs are written retrospectively, and this subject's recollections in text to the fallibility of human memory. David Lowenthal has argued that memory is a reconstructive act, an interpretation of the past

¹¹ Russell A. Hart, *Guderian: Panzer Pioneer or Myth Maker?* (Washington, DC: Potomac Books, 2006), p. 5; D. P. Harding, "Heinz Guderian as the Agent of Change: His Significant Impact on the Development of German Armoured Forces Between the World Wars," *Army History*, no. 31 (1994): p. 26. <https://www.jstor.org/stable/26304190>.

¹² Hart, *Guderian: Panzer Pioneer or Myth Maker?*, pp. 6-8; Pier Paolo Battistelli, *Heinz Guderian*, vol. 13 (Oxford: Bloomsbury Publishing, 2013), p. 13; For information on Guderian's experience of World War I, see: Kenneth Macksey, *Guderian: Panzer General* (London: MacDonald and Jane's, 1975), pp. 11-24.

¹³ Craig W. H. Luther, *Guderian's Panzers: From Triumph to Defeat on the Eastern Front (1941)* (Mechanicsburg, PA: Stackpole Books, 2025), pp. 24-25.

shaped by the conditions of the present.¹⁴ Guderian's memoir is no different, and as such, his memoir "disingenuously" ignores the "thorny issues" of war crimes committed by the *Wehrmacht* during Barbarossa.¹⁵ David Stahel has done much to cast light on the crimes committed by Guderian's corps, noting that in the first four months of Barbarossa, 200 commissars were executed by his troops.¹⁶ Moreover, the translation of Guderian's memoir introduces a further layer of interpretation. As DiNardo has highlighted, passages present in the Fitzgibbon English version were absent from the original, *Erinnerungen eines Soldaten*, which is considered when scrutinising *Panzer Leader* in later chapters.¹⁷

A second field of historiography on this topic focuses on Operation Barbarossa as a whole, within which, Guderian's formation is traced to create operational histories. Order of battle studies, such as Mitcham's authoritative survey of the German army, provide a baseline for understanding the divisional composition of Guderian's Panzers throughout 1941.¹⁸ Walter Spielberger and Chris McNab have created technical histories of the panzers that constituted Guderian's formation, most notably the infamous PzKpfw IVs (Panzer IVs), for which Guderian exerted significant influence on their design, and made up 517 of the 3,200 tanks

¹⁴ David Lowenthal, "History and Memory," *The Public Historian* 19, no. 2 (Spring 1997): pp. 32; For more on memory, see: Frederic C. Bartlett, *Remembering: A Study in Experimental and Social Psychology* (Cambridge: Cambridge University Press, 1932).

¹⁵ Luther, *Guderian's Panzers*, pp. 24-30.

¹⁶ David Stahel, *Hitler's Panzer Generals: Guderian, Hoepner, Reinhardt and Schmidt Unguarded* (Cambridge: Cambridge University Press, 2023), p. 151; Hart, *Guderian: Panzer Pioneer or Myth Maker?*, pp. 71-80; Stahel, "The Criminal Generals," in *Hitler's Panzer Generals*, pp. 133-170.

¹⁷ R. L. DiNardo, *Germany's Panzer Arm in World War II* (Mechanicsburg, PA: Stackpole Books, 2006), pp. 86-87; Macksey, *Guderian: Panzer General*, p. 41.

¹⁸ For a breakdown of each division under Guderian's command, see: Mitcham, *Hitler's Legions*, pp. 345-394.

available to the *Heer* on the eve of Barbarossa.¹⁹ Stahel has contributed significantly to understanding Barbarossa, with his several studies on the invasion amalgamating to argue that the German campaign in the East was destined for failure, long before the onset of the Russian winter.²⁰ Another debate adjacent to this topic concerns the intellectual influences on Guderian's armoured doctrine.²¹ Earlier scholars, including Messenger and Perrett, credit J.F.C. Fuller and Basil Liddell Hart as direct influences on the development of Guderian's tactics.²² Supporting this, there is a record of Guderian personally paying for the translation of Fuller's *Provisional Instructions for Tank and Armoured Car Training* (1927).²³ However, countering this view, Guderian did not cite Liddell Hart in his book *Achtung Panzer!* and only cited Fuller for his contextual information on the deployment of British armour in the Great War.²⁴ Indeed, as DiNardo has demonstrated, the evidence of Liddell Hart's influence was largely cultivated by Liddell Hart himself.²⁵

¹⁹ Chris McNab, *Hitler's Tanks: German Panzers of World War II* (Oxford: Bloomsbury Publishing, 2020), p. 213; Walter Spielberger, *PanzerKampfwagen IV* (Berkshire: Profile Publications, 1972), p. 69; Walter Spielberger, *Panzer IV and Its Variants* (Atglen, PA: Schiffer Military History, 1993).

²⁰ David Stahel, *Operation Barbarossa and Germany's Defeat in the East* (Cambridge: Cambridge University Press, 2009); David Stahel, *Operation Typhoon: Hitler's March on Moscow, October 1941* (Cambridge: Cambridge University Press, 2013); David Stahel, *Retreat from Moscow: A New History of Germany's Winter Campaign, 1941-1942* (New York: Farrar, Straus and Giroux, 2019).

²¹ J. Paul Harris, "The Myth of Blitzkrieg," *War in History* 2, no. 3 (1995): pp. 338-341.

²² Charles Messenger, *The Art of Blitzkrieg* (London: Ian Allan, 1976), p. 27; and Bryan Perrett, *The History of Blitzkrieg* (London: Robert Hale, 1983), p. 41, both found in Harris, "The Myth of Blitzkrieg," p. 340.

²³ Ronald Atkin, *Pillar of Fire: Dunkirk 1940* (London: Sidgwick & Jackson, 1990), p. 26; Harris, "The Myth of Blitzkrieg," p. 340.

²⁴ Macksey, *Guderian: Panzer General*, p. 41; Harris, "The Myth of Blitzkrieg," p. 340. For a review of *Achtung Panzer!* See: Timothy K. Nenninger, review of *Achtung-Panzer! The Development of Armoured Forces, Their Tactics and Operational Potential*, by Heinz Guderian, *The Journal of Military History* 57, no. 4 (1993): 729-730.

²⁵ R. L. DiNardo, *Germany's Panzer Arm*, pp. 86-87.

The third stream of scholarship concerning this study is the historiography of British and American intelligence during the Second World War. F.H. Hinsley's five-volume authorised study established the framework for understanding Ultra's contribution to the Allied war effort and was followed by John Ferris' recent authorised history of GCHQ, which draws on newly declassified material to update Hinsley's work.²⁶ While not directly encompassed by this dissertation's scope, a section of the literature has focused on whether British intelligence provided adequate warning to the Soviets before Barbarossa began, and whether Stalin's own intelligence was able to act on what it received. Gorodetsky's *Grand Delusion* thoroughly examines pre-campaign intelligence diplomacy, foregrounding the climate in which Britain internalised and distributed (or didn't) Guderian's movements.²⁷ The Anglo-American cryptanalytic relationship and its developments throughout the 1940s have been studied in detail by Bradley Smith and Ralph Erskine, informing this study's understanding of intelligence sharing in this period.²⁸ Indeed, Michael Smith aptly described Erskine as the "ultimate source of wisdom on wartime codebreaking," illustrating the value of this work.²⁹

Despite the extensive academic literature on this field, no study has compared British and American intelligence perceptions of a named German formation across a full Second

²⁶ F. H. Hinsley, *British Intelligence in the Second World War: Abridged Edition* (Cambridge: Cambridge University Press, 1993); John Ferris, *Behind the Enigma: The Authorized History of GCHQ, Britain's Secret Cyber-Intelligence Agency* (London: Bloomsbury Publishing, 2020); For the development of American intelligence throughout the Second World War, see Nicholas Reynolds, *Need to Know: World War II and the Rise of American Intelligence* (New York: Mariner Books, 2022). For more on GCHQ see: Richard J. Aldrich, *GCHQ: The Uncensored Story of Britain's Most Secret Intelligence Agency* (London: HarperPress, 2010).

²⁷ Gabriel Gorodetsky, *Grand Delusion: Stalin and the German Invasion of Russia* (New Haven: Yale University Press, 1999); Gabriel Gorodetsky, "The Hess Affair and Anglo-Soviet Relations on the Eve of 'Barbarossa,'" *The English Historical Review* 101, no. 399 (1986): pp. 405-420.

²⁸ Bradley F. Smith, *Ultra-Magic*, 1993; Ralph Erskine, "What Did the Sinkov Mission Receive from Bletchley Park?," *Cryptologia* 24, no. 2 (2000): pp. 97-109; J. C. Sims, "BRUSA Agreement": pp. 30-38;

²⁹ Michael Smith, "Acknowledgements," in *The Emperor's Codes: The Breaking of Japan's Secret Cyphers* (New York: Arcade Publishing, 2001).

World War campaign. Hinsley and Ferris have addressed British signals intelligence at the theatre and institutional levels, but neither traces the specific record of a single formation. This study addresses a gap between intelligence and operational military scholarship, unifying the two fields into a comprehensive examination of how British and American intelligence understood Guderian's Panzers. The material used by scholars in this field is often divided into two categories: the first is derived from the *Wehrmacht*, its soldiers and leaders, and is predominantly used by military historians to reconstruct operational realities. For example, to reconstruct the operations of Guderian's panzers, Luther has used Kurt Freiherr von Liebenstein's post-war study of the formation, produced as Guderian's chief of staff, while Stahel has used letters Guderian wrote across 1941.³⁰ The second is archival sources used by intelligence scholars, such as the HW series at the British National Archives and NARA Record Groups 165, 457, and 38, which contain records of American military intelligence and "cryptologic-related records".³¹ This study aims to unify these categories, a combination that constitutes this study's contribution to this field.

To demonstrate how the British viewed Guderian's Panzers, the following chapters draw on both records held at the National Archives in Kew, which were viewed in person, and digitised copies accessed online. The predominant record group used in this study is the HW 1 series, which contains "summaries of selected signals intelligence reports," prepared for Churchill.³² The summaries reveal what was deemed significant enough to warrant the Prime

³⁰ Luther, *Guderian's Panzers*, pp. 26-27; Stahel, *Hitler's Panzer Generals*, 'Bibliography', pp. 291-311.

³¹ Robert J. Hanyok and Bryce R. Smoot, "Sources and Methods Series: Considering Other Record Groups in NARA Holding Cryptologic and Cryptologic-Related Records," *Cryptologia* 44, no. 5 (2020): pp. 472-476. <https://doi.org/10.1080/01611194.2020.1792003>.

³² The National Archives, "Government Code and Cypher School: Signals Intelligence Passed to the Prime Minister, Messages and Correspondence (HW 1)," accessed April 28, 2026, <https://discovery.nationalarchives.gov.uk/details/r/C9280>.

Minister's attention, and as such, HW 1 records are valuable as an index of British analytical priorities. In this study, the HW 1 files are supplemented with other records from the GC&CS (HW) record group, including HW 5 documents, which contain summaries of Ultra decrypts relevant to the German Army.³³ By comparing what appears in HW 5 with what was passed to Churchill in HW 1, it is possible to identify the perceived importance of intelligence received during this period. Furthermore, the HW 11 series comprises the internal histories of GC&CS intelligence, compiled from original CX/MSS Ultra decrypts.³⁴ As a post-war synthesis rather than a contemporaneous record, HW 11 must be read critically, yet it remains indispensable for identifying which traffic concerning *Panzergruppe 2* Bletchley could interpret. To situate the signal's picture within the broader context of British intelligence, the following chapters also draw on WO records to supplement the HW picture. For example, MI14 weekly intelligence summaries, War Office situation maps and intelligence assessments in HW 13 provide insight into how the British understood Guderian's panzers throughout 1941, and these insights are deployed and contrasted in the following chapters.³⁵

The American intelligence picture of *Panzergruppe 2* was much thinner and, as such, is treated accordingly in this study, serving as a comparison to the British understanding. While Bletchley Park was reading *Wehrmacht* signals from the opening days of Barbarossa, the

³³ The National Archives, "Government Code and Cypher School: German Section: Reports of German Army and Air Force High Grade Machine Decrypts (HW 5)," accessed April 28, 2026, <https://discovery.nationalarchives.gov.uk/browse/r/h/C9284>.

³⁴ Vol. VI The Eastern Front. 1941-1944. MS HW 11/6, Government Communications Headquarters: HW 11: Government Code and Cypher School: World War II Official Histories. Air Military History. The National Archives (Kew, United Kingdom). Declassified Documents Online: Twentieth-Century British Intelligence. <https://link.gale.com/apps/doc/OWVOBP056881888/TCBI?u=exeter&sid=bookmark-TCBI&xid=62767e22&pg=1>.

³⁵ The National Archives, "Government Code and Cypher School: Second World War Intelligence Summaries Based on Sigint (HW 13)," accessed April 28, 2026, <https://discovery.nationalarchives.gov.uk/browse/r/h/C9292>.

MID's picture of *Panzergruppe 2* was far more distant, assembled from a combination of attaché and press reporting. To reconstruct this picture, this study uses digitised attaché telegrams from NARA in the decimal file 740.0011EW.³⁶ These records are supplemented by archived press reports and the CIA's 1993 review of *The German Supply Problem on the Eastern Front*, published in March 1942.³⁷ This dissertation treats these records asymmetrically with their British counterparts, as the American examples illustrate the limitations of intelligence assembled without Ultra, rather than treating them as equivalent evidence bases. The conditions that shape the curation of archives bear directly on the histories produced from them. What material is digitised, retained in physical record groups, left classified, or withheld from public view, constrains the work of the historian. Christopher Andrew has argued that government archives are significantly "laundered," while Richard Aldrich has argued that they can represent a manipulated source of evidence, an "analogue of reality."³⁸ This observation is particularly important in intelligence history, as the gap between what was produced and what has been revealed is wider than in most fields, due to the secrecy of the modern security state. Throughout this dissertation, archival material is read with these conditions in mind.

As an anglophone researcher, reconstructing *Panzergruppe 2*'s operational reality without full access to the German *Kriegstagebuch* has posed a methodological challenge. This

³⁶ NARA, RG 59, M982, *Records of the Department of State Relating to World War II, European War, 1939-1945*, decimal file 740.0011EW (252 reels), <https://catalog.archives.gov/id/537442719>.

³⁷ CIA Historical Review Program, review of COI Monograph No. 6, *The German Supply Problem on the Eastern Front, June 22-December 6, 1941* (25 March 1942), 22 September 1993, Accessed online via <https://www.cia.gov/resources/csi/static/Eastern-Front-Turning-Point.pdf>.

³⁸ Richard J. Aldrich, *The Hidden Hand: Britain, America and Cold War Secret Intelligence* (London: John Murray, 2001), p. 6; Christopher Andrew, "Secret Intelligence and British Foreign Policy 1900-1939," in *Intelligence and International Relations 1900-1945*, ed. Christopher Andrew and Jeremy Noakes (Liverpool: Liverpool University Press, 1987), p. 9.

dissertation addresses it through a synthesis of three different resources: *Panzer Leader*, read critically against the conditions highlighted in the previous section; Franz Halder's war diary, kept as Chief of the German General Staff; and the American Historical Association (AHA) finding aid for the T-313 microfilm series.³⁹ The finding aid is used to identify documents from the German original, as it summarises the contents of each Roll from the captured *Kriegstagebuch*, which helped identify German words and phrases for analysis.⁴⁰ Like *Panzer Leader*, the finding aid is treated carefully, as it is also an interpretation, constructed by American archivists post-war. Halder's diary is also understood as a contemporary record, but a summarised one, kept by a figure with his own institutional interests to protect, and shaped by the author's interpretation of events. This material is calibrated against the operational histories of scholars like Stahel, Mawdsley, and Glantz, and together, this synthesis of primary and scholarly material constitutes the baseline against which British and American intelligence is measured.⁴¹ This dissertation asks how British and American intelligence perceived Guderian's formation during this campaign, examining how accurately, through what mechanisms, and with what consequences, Anglo-American intelligence understood *Panzergruppe 2*'s operational reality.

³⁹ Franz Halder, *War Journal of Franz Halder, Chief of the General Staff of Supreme Command of the German Army (OKH), Volume VI*, trans. and ed. Historical Division, SSUSA (Fort Leavenworth, KS: Archives Section, Library Services, 1948) accessed via https://militera.lib.ru/db/0/pdf/halder_eng6.pdf; Franz Halder, *War Journal of Franz Halder, Chief of the General Staff of Supreme Command of the German Army (OKH), Volume VII*, trans. and ed. Historical Division, SSUSA (Fort Leavenworth, KS: Archives Section, Library Services, 1948). Accessed via https://militera.lib.ru/db/0/pdf/halder_eng7.pdf.

⁴⁰ Willard Allen Fletcher, *Guides to German Records Microfilmed at Alexandria, VA, No. 40: Records of German Field Commands, Army Groups, Part I* (Washington, DC: American Historical Association, Committee for the Study of War Documents, 1963). Accessed online via WW2 archives, <https://www.digitalarchives.org/t313-panzer-armies>.

⁴¹ David Stahel, *Operation Barbarossa*, 2009; Evan Mawdsley, *Thunder in the East: The Nazi-Soviet War, 1941-1945* (London: Hodder Arnold, 2005); David M. Glantz, *Barbarossa: Hitler's Invasion of Russia, 1941* (Stroud: Tempus, 2001).

From Smolensk to Kiev: British Intelligence and *Panzergruppe 2*, June-September 1941

Between 22 June and late September 1941, *Panzergruppe 2* executed a dramatic sequence of operations that shaped the opening phases of Barbarossa. Guderian's forces had completed the encirclement of Soviet troops near Bialystok and Minsk by late June. They crossed the Dnieper River on July 10, initiating the battle for Smolensk, which yielded c. 310,000 Soviet prisoners.⁴² What followed was the controversial diversion to Kiev from August to September, culminating in its capture on 19 September, despite fighting continuing until the 24th.⁴³ Guderian strongly opposed the diversion, and several early scholars argued that not attacking Moscow, despite *Panzergruppe 2*'s proximity to the Soviet capital, represented a huge strategic blunder.⁴⁴ While this debate lies beyond the scope of this study, it is important context, as during this timeframe, British intelligence extensively tracked the formation's operations.⁴⁵ The question posed in this chapter is how accurately the British intelligence apparatus tracked *Panzergruppe 2*'s operations, and what this reveals about the capabilities and limitations of British intelligence on the Eastern Front in this period.

⁴² David M. Glantz, *Before Stalingrad: Barbarossa - Hitler's Invasion of Russia 1941* (Stroud: Tempus, 2003), p. 7; Hans Seidler and Ian Baxter, *Operation Barbarossa: Hitler's Invasion of Russia* (Barnsley: Pen & Sword Military, 2010), p. 50; Russell H. S. Stolfi, "The Greatest Encirclement in History: Link-Up of the German 3rd and 9th Panzer Divisions on 15 September 1941 in the Central Ukraine," *The RUSI Journal* 141, no. 6 (1996): p. 69.

⁴³ Stephen G. Fritz, *Ostkrieg: Hitler's War of Extermination in the East* (Lexington: University Press of Kentucky, 2011), p. 102; Kirchubel, *Operation Barbarossa*, p. 282.

⁴⁴ For his account of his debate with Hitler and the OKH see: Guderian, *Panzer Leader*, pp. 198-202. For scholars who support the 'Blunder' narrative, see: Albert Seaton, *The Russo-German War, 1941-1945* (London: Arthur Barker, 1971), pp. 132-52; Bryan Fugate, *Operation Barbarossa: Strategy and Tactics on the Eastern Front, 1941* (Novato, CA: Presidio Press, 1984), pp. 205-46.

⁴⁵ For the counterargument that Barbarossa was doomed to fail, see: Stahel, *Operation Barbarossa and Germany's Defeat*, pp. 2-3; For a critical review of Stahel's thesis, see Evan Mawdsley, review of *Operation Typhoon: Hitler's March on Moscow, October 1941*, by David Stahel, *War in History* 21, no. 3 (2014): pp. 389-91, <http://www.jstor.org/stable/26098589>.

In his authorised history, Hinsley argues that the British were relatively unassuming about the German plan to attack Russia, and that, consequently, the British intelligence picture of the front was relatively thin before the invasion.⁴⁶ Nevertheless, the War Office Weekly intelligence summary for 11-18 June tracked the buildup of German troops prior to the invasion, noting approximately 76 divisions were in East Prussia and Poland, 15-20 in Bukovina and Moldavia, and 2-4 in Finland.⁴⁷ The summary acknowledged that these whereabouts reports were estimated, and that the available information was insufficient to determine the precise German plan, though it speculated that an invasion was imminent.⁴⁸ The transformation of this picture after June 22 was instantaneous, yet uneven. The post-war GC&CS internal history found in HW 11/6 noted that Ultra was slow to build its initial picture of the Eastern Front, and by the time “detailed special intelligence” was available, the Germans had already taken Brest Litovsk and were overrunning the remainder of Soviet-controlled Poland.⁴⁹ HW 11/6 identifies that the first signal identifying *Panzergruppe 2* on the Eastern Front was intercepted on June 27, near Minsk.⁵⁰ The first intelligence on *Panzergruppe 2* deemed important enough for Churchill's attention comes from HW 1/10. The record contains a cover letter from ‘C’, Stewart Menzies, forwarding two telegrams sent to General MacFarlane in Moscow. The first telegram, dated 14 July, describes itself as a “sample of the type of intelligence” passed to the Soviets and, from the “most reliable” source (a standard cover for Ultra-derived material), provides the distribution of armoured divisions across all four

⁴⁶ Hinsley, *British Intelligence in the Second World War*, pp. 88-115.

⁴⁷ TNA, WO 208/2258, Weekly Intelligence Summary No. 96, 11-18 June 1941, accessed via British Online Archives. Image no. 411. <https://britishonlinearchives.com/documents/8282/war-office-weekly-intelligence-sep-1940-dec-1941#?xywh=-3168%2C-222%2C8954%2C4423>.

⁴⁸ Ibid.

⁴⁹ GC&CS, HW 11/6, p. 104.

⁵⁰ Ibid.

Panzergruppen.⁵¹ The telegram accurately recorded that the 3rd, 4th, 10th, 17th and 18th Panzer divisions all belonged to the “Second Armoured Group,” demonstrating Churchill was aware of *Panzergruppe 2*’s precise divisional composition within a month of the invasion commencing. However, a cross-reference with *Panzer Leader* reveals that the telegram did not capture the specific motorised and cavalry divisions that constituted *Panzergruppe 2*.⁵² This suggests either that the Panzer divisions were deemed more important, and the others were therefore ignored, or that the intelligence picture of the formation’s periphery was incomplete at this stage. The second telegram, dated 16 July, describes “enveloping” armoured movement around Smolensk from Vitebsk and south of the Orsha-Smolensk railway as “in progress.”⁵³ A comparison with Halder’s war diary reveals the intelligence’s accuracy, noting that Guderian’s forces had “battled their way” to Smolensk on July 16, the day the telegram was sent.⁵⁴ That this intelligence was shared with Moscow, disguised in a War Office telegram to protect Ultra’s secrecy, illustrates both the reach of British signals intelligence and the political significance attached to its product within weeks of Barbarossa’s opening.⁵⁵

However, the raw signals intelligence product tells a more detailed story than the Churchill summaries of the same period. HW 5/23, containing Bletchley’s intercepts from 13-21 July, contains raw CX/MSS decrypts that show tracking of *Panzergruppe 2* on a divisional level. On 12 July, intercepted *Luftwaffe* reports detailed how, in front of *Panzergruppe 2*, the

⁵¹ TNA, HW 1/10, D.M.I. No. 26/M.I.14, War Office to British Liaison Staff No. 30, Moscow, 14 July 1941.

⁵² Guderian, *Panzer Leader*, pp. 145-146.

⁵³ TNA, HW 1/10, D.M.I. No. 28/M.I.14, War Office to British Liaison Staff No. 30, Moscow, 16 July 1941.

⁵⁴ Halder, *War Journal of Franz Halder*, Volume VI, p. 244; Guderian, *Panzer Leader*, p. 176.

⁵⁵ Hinsley, *British Intelligence in the Second World War*, p. 115.

enemy was retreating.⁵⁶ By 16-17 July, the *Koluft Panzergruppe 2* report enabled Bletchley to pinpoint the exact locations of Guderian's Panzer divisions and Motorised division around Smolensk to their precise grid references.⁵⁷

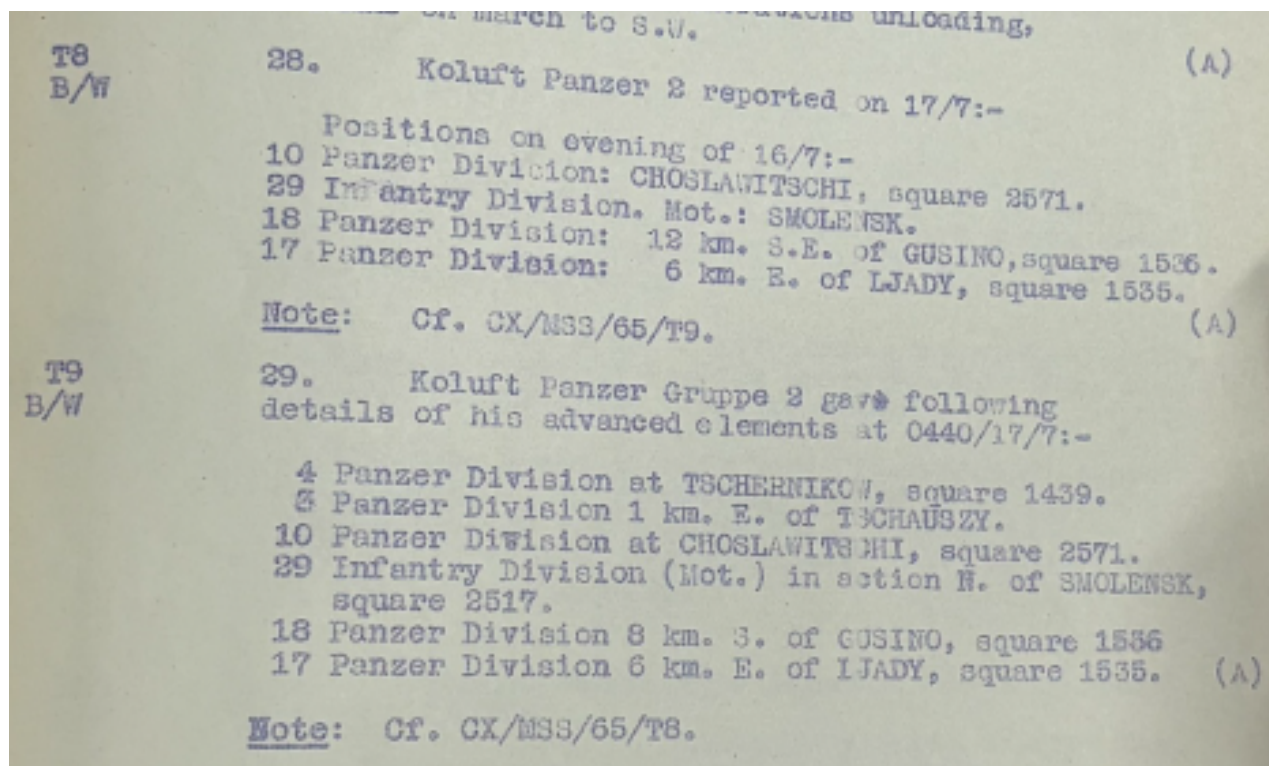


Figure 4: HW 5/23 Koluft Panzer 2 report from 17/07/41

The primary mechanism for this early visibility was the *Koluft* system, the *Luftwaffe* liaison signals that used air force channels that could be intercepted, rather than *Heer* Enigma keys, which offered less consistent coverage at this stage. This distinction is important, as it reveals that much of the SIGINT on *Panzergruppe 2* in the opening phases of Barbarossa was dependent on *Luftwaffe* traffic, not on direct penetration of Guderian's units' communications.

⁵⁶ TNA, HW 5/23, CX/MSS/52, Air Liaison Officer report to RAUBRITTER 3, 12 July 1941.

⁵⁷ TNA, HW 5/23, CX/MSS/61 and CX/MSS/65/T8, CX/MSS/65/T9, Koluft *Panzergruppe 2* reports, 16-17 July 1941.

Importantly, the summarised product Churchill received across these dates differs from that in HW 5/23, in both volume and the detail of the decrypts. This illustrates that the intelligence picture of *Panzergruppe 2* was not uniform across the British war apparatus, but varied depending on where one stood in the distribution chain.

From June 26, the War Office synthesised intelligence from multiple sources into operational maps of the Eastern Front.⁵⁸ Such sources included aerial reconnaissance photography, occasional Soviet communications, and, most importantly, intelligence from Bletchley that gave the British a dual visibility of both German and Soviet forces.⁵⁹ However, these maps were not produced from raw ultra decrypts; to protect their secrecy, the War Office was denied direct access to the primary material. Instead, the intelligence used to create the maps was constructed from processed assessments curated by Hut 3 and subsequently disseminated via the Special Liaison Unit network and JIC channels.⁶⁰ This mediation intentionally reduced the accuracy of the original signal product before it reached the cartographers to protect Ultra's secrecy. For example, the situation map for 15 July 1941, shown below, depicts *Panzergruppe 2* with its constituent armoured divisions in the vicinity of Bobruisk.⁶¹ However, a comparative analysis against the German record reveals the consequences of this mediation. The AHA T-313 finding aid identifies Roll 86 of the

⁵⁸ TNA, WO 208/1764, Eastern Front Situation Maps, June-September 1941.

⁵⁹ Hinsley, *British Intelligence in the Second World War*, p. 121.

⁶⁰ F. W. Winterbotham, *The Ultra Secret* (London: Weidenfeld & Nicolson, 1974), pp. 17-25; Keith Richmond, "The Use of Ultra by Commanders," *Sabretache* 50, no. 4 (2009): p. 31.

⁶¹ TNA, WO 208/1764, Situation Map, 15 July 1941.

Kriegstagebuch as containing situation maps of *Panzergruppe 2*'s operations from June 21 to August 31, 1941.⁶²

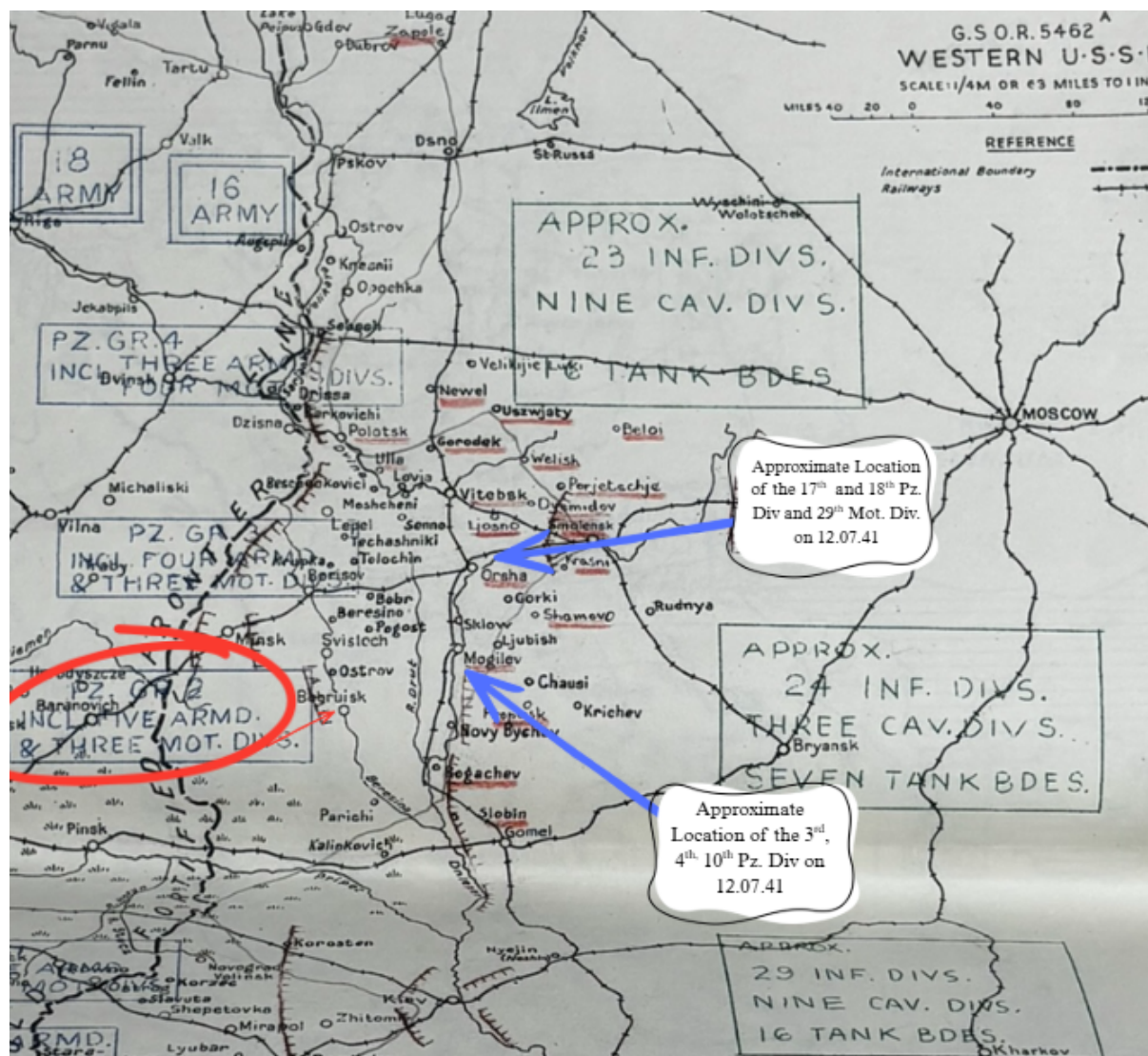


Figure 5 WO 208/1764 Situation map for 15.07.41. Annotations and arrows added using information gathered from the German record.

⁶² Fletcher, *Guides to German Records Microfilmed at Alexandria, VA*, No. 40.

Using this information, a *Lage* (location) map dated 12 July 1941 was identified in the microfilmed original. The map places the 3rd, 4th and 10th Panzer Divisions in the vicinity of Mogilev, and the 17th and 18th Panzer Divisions, alongside the 29th Motorised Division, in the vicinity of Orscha.⁶³ The War Office July 15 map, by contrast, placed *Panzergruppe 2* in its entirety near Bobruisk, approximately 115-200 kilometres west of Mogilev and Orscha, which the German original confirms the formation had already reached three days earlier. On July 15, elements of *Panzergruppe 2* reached Smolensk, 318 kilometres from Bobruisk, and captured it the next day, further illustrating how inaccurate the War Office's July 15 map was.⁶⁴ The conclusions that can be drawn from this are that while Bletchley held precise grid references and understood Smolensk's capture as it occurred, by the time the intelligence had been processed by Hut 3, mediated by the JIC and passed to MI14 for cartographic reproduction, the accuracy had been lost, creating a temporal and spatial lag.⁶⁵ The Ultra picture and the War

⁶³ National Archives and Records Administration, T-313, Roll 86, frame 326085, picture no. 73, Lage map, 12 July 1941. Accessed online via WW2 archives, <https://www.iidigitalarchives.org/t313-panzer-armies>; Guderian, *Panzer Leader*, pp. 172-173.

⁶⁴ Guderian, *Panzer Leader*, pp. 175-176.

⁶⁵ TNA, HW 5/23, CX/MSS/61 and CX/MSS/65/T8, CX/MSS/65/T9, Koluft *Panzergruppe 2* reports, 16-17 July 1941.

Office map are the result of the same intelligence network operating at different levels of the distribution chain.

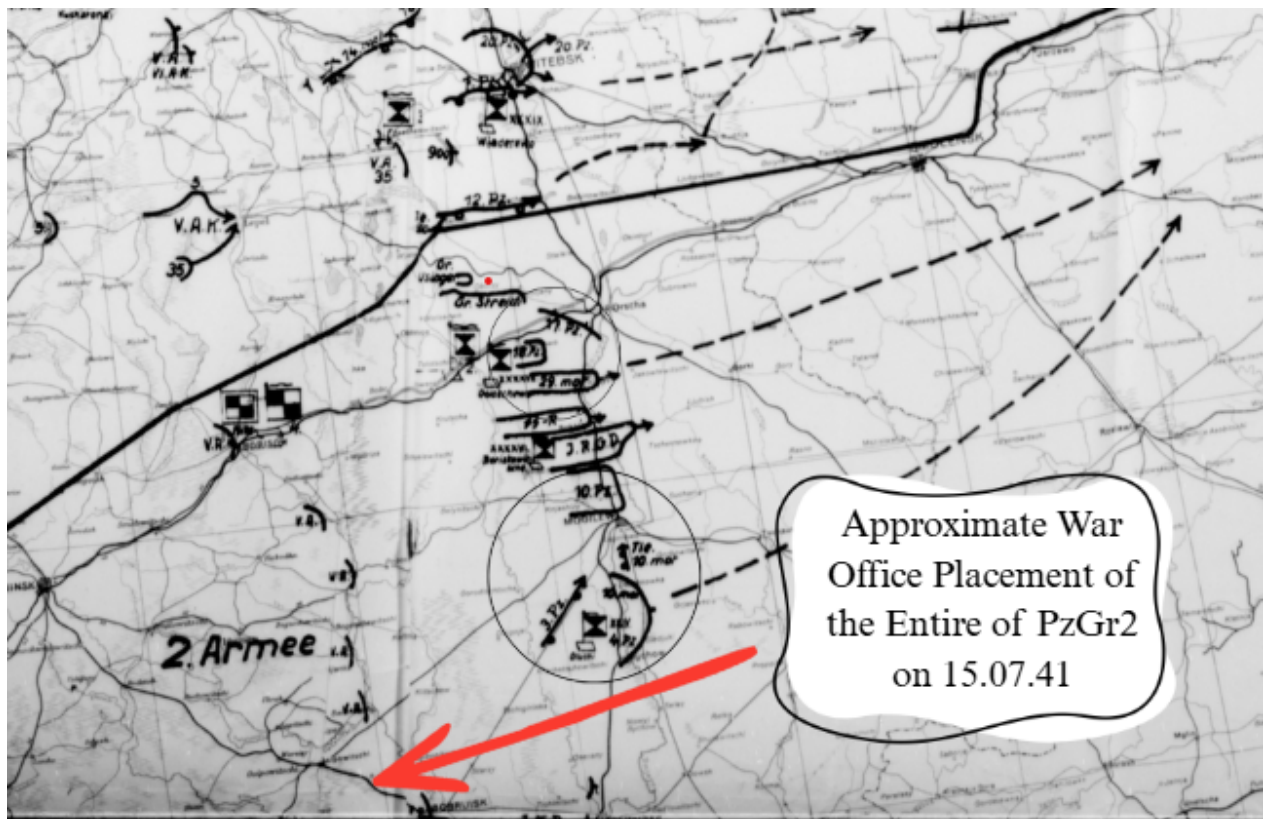


Figure 6 German Lager Map for 12.07.41 - Mentioned divisions are circled.

Figure 7: War Office 208 /1765 situation map for 27.10.41
Figure 8 German Lager Map for 12.07.41 - Mentioned divisions are circled.

The contrast between what Bletchley could see of *Panzergruppe 2* and what the War Office could synthesise is one of the most telling findings of this chapter. MI14's strategic review of the Eastern Front between 22 June and 27 August opens with a candid admission, plainly describing the difficulties with "obtaining accurate information" on such a large front, meaning that the assessment could not "be an exhaustive study."⁶⁶ The War Office's lack of a

⁶⁶ TNA, WO 208/1778, M.I.14/DR/106/41, Review of the Russo-German Campaign Between 22 June and 27 August 1941, p. 1.

clear intelligence picture is reinforced by the weekly summary for 25 June - 2 July, where MI14 analysts note the lack of “definite information” on certain areas of the Eastern Front, due to the speed of the “large numbers” of armoured divisions engaged.⁶⁷ The MI14 review fails to name *Panzergruppe 2*, Guderian, or any of its constituent armoured or motorised divisions. The document subsumes Guderian’s formation within the “4(th) army,” a low level of detail that confirms MI14 was tracking the operational effects of Guderian’s drive, without being able to attribute them to a specific formation.⁶⁸ What Bletchley could read in HW 5/23 with grid reference precision, MI14 could not replicate. The gap between these two products emphasises the structural reality that shaped British perceptions of *Panzergruppe 2* throughout the summer campaign.

This information gap is further evidenced by a nine-day cluster of HW 1 files from 4 - 17 September, constituting the longest continuous run of Churchill-level intelligence on *Panzergruppe 2* in 1941, which sharply contrasts with the information available to the War Office. The strategic context of this period was the Kiev diversion, Hitler’s controversial decision opposed by Guderian and several other leading figures of the OKH.⁶⁹ HW 1/44, dated 4 September, contains a FLIVO report, which describes the 47th Panzer Corps under heavy aerial assault, and describes the movements of the 4th Panzer and 29th Motorised divisions.⁷⁰ The document was annotated by a Bletchley analyst, who noted its “very obscured and tattered

⁶⁷ TNA, WO 208/2258, Weekly Intelligence Summary No. 98, 25 June-2 July 1941, accessed via British Online Archives. Image no. 445.

⁶⁸ TNA, WO 208/1778, M.I.14/DR/106/41, p. 2.

⁶⁹ Stahel, *Hitler's Panzer Generals*, pp. 239-240; Guderian, *Panzer Leader*, pp. 198-202.

⁷⁰ TNA, HW 1/44, CX/MSS/207/T6, FLIVO (Fliegerverbindungsoffizier) report, 2 September 1941, forwarded to Churchill 4 September 1941.

nature.”⁷¹ Indeed, the document contains several asterisked locations, indexed as unidentified, serving as a reminder that, even at its most detailed, Ultra intelligence was not all-knowing. The following day, signals found in HW 1/46 described Panzergruppe 2 as the “main weight of attack” in the Chernigov region, which was significant as it shows the British understood Guderian’s armour as an operational priority for the Germans, hence its inclusion in Churchill’s summary.⁷²

The intelligence picture became even clearer as the Kiev encirclement began to close. HW 1/60, dated 11 September, contained decrypts tracking two of *Panzergruppe 2*’s corps simultaneously in great detail. The 24th was located around Baturin and Romen, and the 47th was tasked with protecting the bridgehead at Novgorod-Seversky.⁷³ On September 13, Churchill was made aware of the 24th Panzer Corps drive to Konotop by decrypts found in HW 1/64, and by 14-15 September, British intelligence understood that the 3rd Panzer Division had taken Lochwiza.⁷⁴ Crucially, Churchill received intelligence that *Panzergruppe 1*, advancing from the south, was “about to join up with *Panzergruppe 2*,” meaning the British had insight into the closing of the Kiev pocket as it was occurring.⁷⁵ HW 1/71 provided a comprehensive picture of *Panzergruppe 2*, revealing the German army’s

⁷¹ Ibid.

⁷² TNA, HW 1/46, CX/MSS/210/T6, Luftflotte 2 to Luftflotte 4, 4 September 1941, forwarded to Churchill 5 September 1941.

⁷³ TNA, HW 1/60, CX/MSS/228/T3 and CX/MSS/228/T2, Flak reports, 10 September 1941, forwarded to Churchill 11 September 1941.

⁷⁴ TNA, HW 1/64, CX/MSS/235/T6, 12 September 1941; TNA, HW 1/65, CX/MSS/239/T3, 13 September 1941; TNA, HW 1/68, CX/MSS/243/T3, 14 September 1941.

⁷⁵ TNA, HW 1/68, CX/MSS/243/T3, Luftflotte 4 operational report, 14 September 1941, forwarded to Churchill 15 September 1941.

objectives of “narrowing down the Russian pocket,” enabling Churchill to understand the *Wehrmacht's* military objectives as they were executed.⁷⁶

MI14's post-operational review of the Kiev encirclement confirmed the War Office understood the operation's mechanics, citing Guderian's group as making up one of the “pincer arms” that constituted the encirclement.⁷⁷ However, crucially, retrospective clarity should not be mistaken for what intelligence was available at the time; the purpose of the document was to serve as a case study of how the Germans deployed their armour. What the documentary record of June-September 1941 reveals is how the British intelligence picture was neither uniformly excellent, as some reports were incomplete, nor uniformly limited, as overall, intelligence coverage of Guderian's panzers existed throughout this stage of the campaign, except for the opening few days. Indeed, this unevenness reflects the nature of Ultra itself, as to protect its secrecy, there was a structural imbalance between what Bletchley understood and what the War Office could receive. However, this structure still represented precision and immediacy that no other Allied intelligence system could match. What remains to be assessed is whether the same precision was sustained as Guderian's panzers turned towards Moscow, and whether British intelligence grasped, as the campaign unfolded, the formation's deterioration.

⁷⁶ TNA, HW 1/71, CX/MSS/249/T20, daily report, 16 September 1941, forwarded to Churchill 17 September 1941.

⁷⁷ TNA, WO 208/1788, The German Advance from the North - Kiev Operation, covering 22 June-22 September 1941.

From Typhoon to Collapse: British Intelligence and 2nd Panzer Army, October-December 1941

Operation Typhoon, launched on October 2, 1941, was the *Wehrmacht's* final attempt to capture Moscow before the onset of the unforgiving Russian winter.⁷⁸ For the 2nd Panzer Army, the operation began by penetrating the Briansk Front on October 3, pushing onto Orel the following day, and approaching Mtsensk by October 6.⁷⁹ Despite the success of the initial advance, the Russian weather turned, and mud and frost stalled Guderian's progress. The "great Soviet winter offensive" of December drove *Wehrmacht* forces back from the approaches to Moscow, forcing the Germans into a defensive battle that lasted several months.⁸⁰ As Hinsley has argued, the overall British intelligence picture improved from the summer of 1941; indeed, the number of employees at Bletchley grew from 900 at the beginning of the year to 1500 by December.⁸¹ This chapter supports Hinsley's conclusions, making the case that British intelligence was able to track the 2nd Panzer Army with greater precision than it did from June to September.

As at Barbarossa's opening, the British intelligence network entered Operation Typhoon with a significant information gap. HW 11/6 acknowledged that before the offensive, Bletchley had "an unusually small amount of information" on army formations from the Eastern Front, explained by the fact that the Enigma settings for 3 October were not broken

⁷⁸ David Stahel, *Operation Typhoon*, p. 2.

⁷⁹ Macksey, *Guderian: Panzer General*, p. 155; David M. Glantz and Jonathan House, *When Titans Clashed*, pp. 100-101.

⁸⁰ Bernd Wegner, "The Road to Defeat: The German Campaigns in Russia 1941-43," *The Journal of Strategic Studies* 13, no. 1 (1990): p. 114; Stahel, *Hitler's Panzer Generals*, p. 229; For more on the winter campaign, see: David Stahel, *Retreat from Moscow*, 2019.

⁸¹ Hinsley, *British Intelligence in the Second World War*, pp. 115-120.

until the 6th, four days into Typhoon.⁸² This structural limit was confirmed by the MI14 weekly summary for 1-8 October, which admitted “no details are known” of the extent of the German advance, while plainly noting a “large portion of armoured troops” was headed for Moscow.⁸³ By the 9-10 of October, the opening silence on the 2nd Panzer Army was filled, as HW 1/130 contained the first German reference to Guderian’s units as “2nd Panzer Army,” rather than *Panzergruppe 2*.⁸⁴ The four-day lag between the redesignation and its first appearance in decrypts illustrates once more that, while Ultra was exceptional, its information was not always immediate, a condition that was consistent with the opening phase of Barbarossa.⁸⁵ By October 9, Bletchley, despite its initial blindness, was reading condition reports for Guderian’s 46th Panzer Corps, that “tracks and roads are bad in places,” and that the weather was “good,” with only “light rain.”⁸⁶ By contrast, the MI14 weekly summary for 8-15 October had begun to recover, with German proximity to Moscow estimated at 65 miles east of the city.⁸⁷

The escalating volume of Ultra traffic reaching Churchill across October and November is quantitative evidence of increasing coverage intensity. Indeed, the HW 1 files for this period show an exponential increase in batch sizes, and substantially more references to the 2nd

⁸² GC&CS, HW 11/6, p. 120.

⁸³ TNA, WO 208/2258, Weekly Intelligence Summary No. 112, 1-8 October 1941, accessed via British Online Archives, Image no. 720.

⁸⁴ TNA, HW 1/130, CX/MSS/321/T5, 9 October 1941.

⁸⁵ Harold C. Deutsch, *The Influence of Ultra on World War II* (Carlisle, PA: U.S. Army War College, 1978), pp. 5-6.

⁸⁶ TNA, HW 1/130, CX/MSS/321/T5, 9 October 1941; For the operational consequences of the *rasputitsa*, see Glantz and House, *When Titans Clashed*, pp. 119-130.

⁸⁷ TNA, WO 208/2258, Weekly Intelligence Summary No. 113, 8-15 October 1941, accessed via British Online Archives. Image no. 742.

Panzer Army.⁸⁸ This is corroborated by HW 11/6, which records that from October 7 to early December, “exhaustive detail” was available on “every major formation” that partook in the drive towards Moscow.⁸⁹ Given the nature of HW 1, the increase in inclusion of decrypts relevant to the 2nd Panzer Army shows how the British perceived the formation as increasingly important. At the formation level, despite the increase in quantity, the decrypts maintained the same level of precision as in the June-September files, though there were exceptions. For instance, HW 1/193 placed the 24th Panzer Corps south of Tula on 3 November, where it repelled Soviet attacks of “1 company” strength, intelligence graded B and C, which demonstrates a degree of uncertainty.⁹⁰ However, on November 3, Guderian described the 24th Panzer Corps as not in combat but “outside of Tula,” facing bitter cold and terrible road conditions.⁹¹ The Soviet company had not attacked the 24th Panzer Corps directly; instead, it ran into the 167th Infantry Division, which repelled the assault and left the 24th Panzer Corps' situation unchanged, a nuance not captured by HW 1/193.⁹² The *Tagesmeldung* of the 24th Panzer Corps dated 3 November, identified through the AHA T-313 finding aid, illuminates this picture further, placing the 3rd and 4th Panzer Divisions near Tula, and describes the road conditions as “*unverändert schlecht*, ” (remaining poor) while the “*Absicht*” (intentions) of the divisions were unchanged.⁹³ This comparison is instructive: Ultra’s broad picture was correct, but low source grading can measurably affect intelligence accuracy. The intelligence correctly

⁸⁸ TNA, HW 1/193, 6 November 1941; TNA, HW 1/197, 8 November 1941; TNA, HW 1/203, 10 November 1941.

⁸⁹ GC&CS, HW 11/6, p. 121.

⁹⁰ TNA, HW 1/193, CX/MSS/404/T21, 3 November 1941, forwarded to Churchill 6 November 1941.

⁹¹ Guderian, *Panzer Leader*, pp. 245-246.

⁹² *Ibid.*

⁹³ National Archives and Records Administration, T-313, Roll 93, frame 335624, picture no.650, *Tagesmeldung XXIV.Pz.K. vom 3.11* [Daily Report of XXIV Panzer Corps, 3 November 1941]; Accessed online via WW2 archives, <https://www.digitalarchives.org/t313-panzer-armies>; Halder, *War Journal of Franz Halder*, Volume VII, pp. 150-152.

identified the location and the absence of significant change, but misattributed the actions of the 24th Panzer Corps to the infantry protecting it. This example reinforces this dissertation's thesis, that the British intelligence picture was, overall, highly accurate, but uneven in some areas.

Despite the example of imprecision shown above, the supply crisis that decimated the 2nd Panzer Army's offensive capabilities is documented with great accuracy across consecutive HW 1 files. The first of which, HW 1/197, records the necessity of all Panzer Corps to "*Auffrischen*," meaning to regain strength and recuperate.⁹⁴ Three days later, HW 1/203 recorded that supply to all Panzer Corps must be conducted by "A.F.V.'s" (Armoured Fighting Vehicles), owing to the "thaw and fresh snow-fall" that deteriorated the road conditions significantly, resulting in wheeled logistical transports being unusable.⁹⁵ The same file admitted that across the "whole front", no movements "on a large scale" ensued, an interception that gave the British a window into the paralysis of Guderian's armour.⁹⁶ The crisis reached its peak on the 13th and 14th of November, as "no fuel" had arrived in Orel for the 2nd Panzer Army.⁹⁷ A Bletchley analyst had highlighted "no fuel" in red, signalling that at least one level of the distribution chain deemed this specific information significant enough to draw Churchill's attention to, suggesting the British were keeping a close eye on Guderian's operations. Goralski and Freeburg have highlighted the stresses that fuel shortages placed on the 2nd Panzer Army in this period, as Guderian recorded the desperate supply situation over

⁹⁴ TNA, HW 1/197, CX/MSS/411/T12, 7 November 1941, forwarded to Churchill 8 November 1941.

⁹⁵ TNA, HW 1/203, CX/MSS/418/T2, 10 November 1941, forwarded to Churchill 10 November 1941.

⁹⁶ *Ibid.*, CX/MSS/417/T11, 7 November 1941, forwarded to Churchill 10 November 1941.

⁹⁷ TNA, HW 1/218, CX/MSS/437/T18, 16 November 1941, forwarded to Churchill 17 November 1941.

precisely these dates in his memoir.⁹⁸ This account is enriched by HW 1/220, which records that Guderian's panzers had received an average of only 317 cubic meters of fuel per day, which was 19% of the 1,200 cubic meters required by the divisions.⁹⁹ The British observed the effects of the shortage in real time, noting that the 4th Panzer Division had two days' supply for its operations.¹⁰⁰

The degradation of Guderian's constituent Corps is documented in the Bletchley order-of-battle snapshots held in HW 13/151, which provide a chronological record of the 2nd Panzer Army's composition. On 1 November, the formation contained three corps, containing eleven divisions, five panzer, five motorised, and one cavalry.¹⁰¹ However, by the 22nd of November, the 95th Infantry Division had appeared under the 47th Corps, and the 19th Motorised had disappeared from the 24th Corps, an absence that could be explained by the severe supply difficulties Guderian Corps were facing.¹⁰² By December 6, the day Guderian suspended the attack on Tula, HW 13/151 showed ten divisions, one fewer than at the beginning of November and two fewer motorised divisions, replaced by one infantry and one cavalry division in what had been Guderian's primary armoured spearhead.¹⁰³

⁹⁸ Robert Goralski and Russell W. Freeburg, *Oil & War: How the Deadly Struggle for Fuel in World War II Meant Victory or Defeat*, repr. ed. (New York: William Morrow, 1987), pp. 81-86; Guderian, *Panzer Leader*, pp. 247-249.

⁹⁹ TNA, HW 1/220, CX/MSS/440/T9, 16 November 1941.

¹⁰⁰ Ibid.

¹⁰¹ German Army Orders of Battle. November 14, 1940-October 12, 1944. MS HW 13/151, Government Communications Headquarters: HW 13: Government Code and Cypher School: Second World War Intelligence Summaries Based on Sigint. The National Archives (Kew, United Kingdom). Declassified Documents Online: Twentieth-Century British Intelligence. Image no. 10.
<https://link.gale.com/apps/doc/QIDGJC890462971/TCBI?u=exeter&sid=bookmark-TCBI&xid=68afaa24&pg=1>

¹⁰² Ibid., Image no. 12.; GC&CS, HW 11/6, p. 129.

¹⁰³ Ibid., Image no. 13; Guderian, *Panzer Leader*, pp. 258-259.

Bletchley Park was able to track these structural changes, caused by the extreme weather, losses, and supply difficulties, through deficit calculations and by observing which formations were signalling under which headquarters, a complementary dimension of the intelligence picture that adds to the story shown by the HW 1 decrypts.

A further dimension of the British intelligence picture of the 2nd Panzer Army from October to December concerns the War Office's situation maps. The previous chapter presented an example in which the War Office cartography lagged significantly behind operational reality, with a positional discrepancy of approximately 300 kilometres.

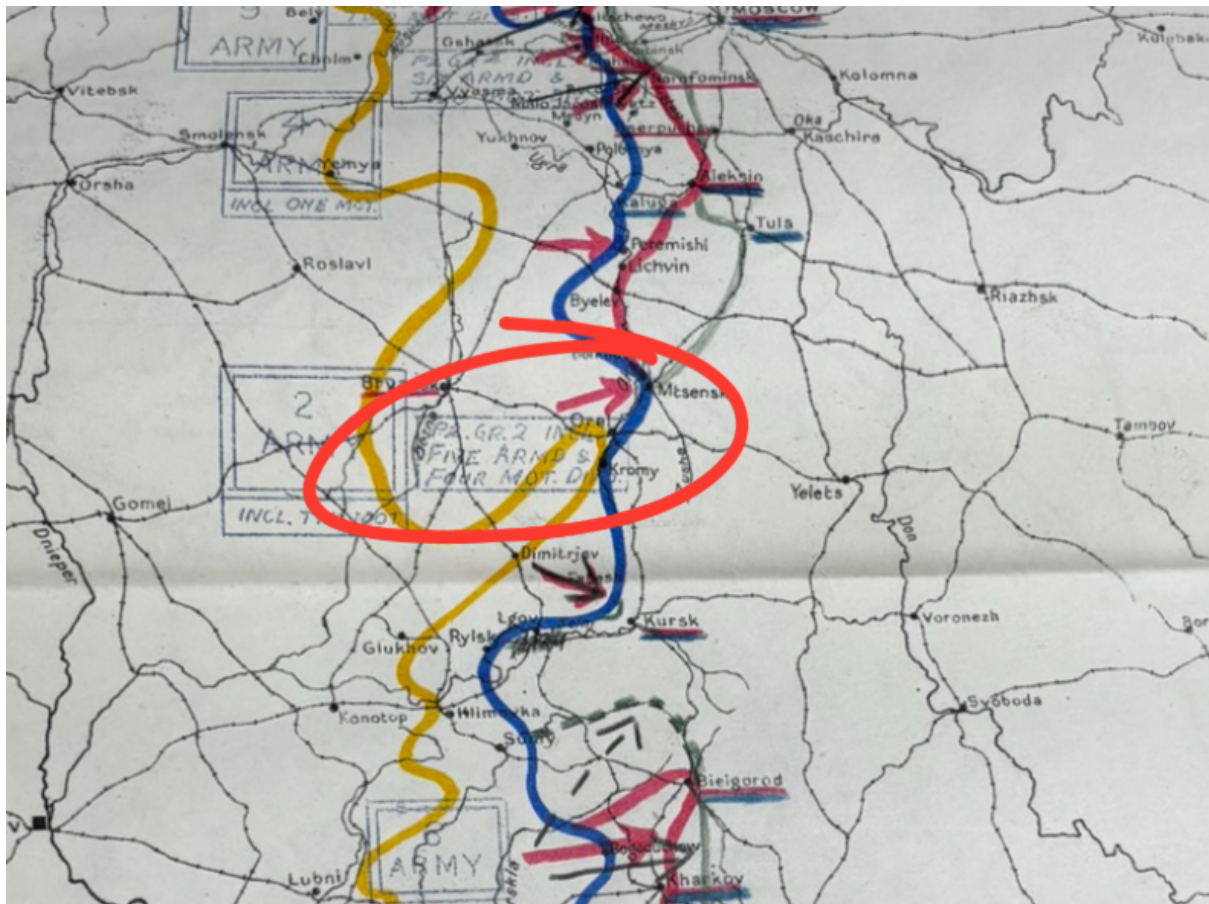


Figure 9: War Office 208 /1765 situation map for 27.10.41

Figure 10: War Office 208 /1765 situation map for 27.10.41

However, the MI14 maps from this chapter's period reveal a significant development. The MI14 situation map for 27 October 1941 shows the 2nd Panzer Army near Mtsensk and Orel,

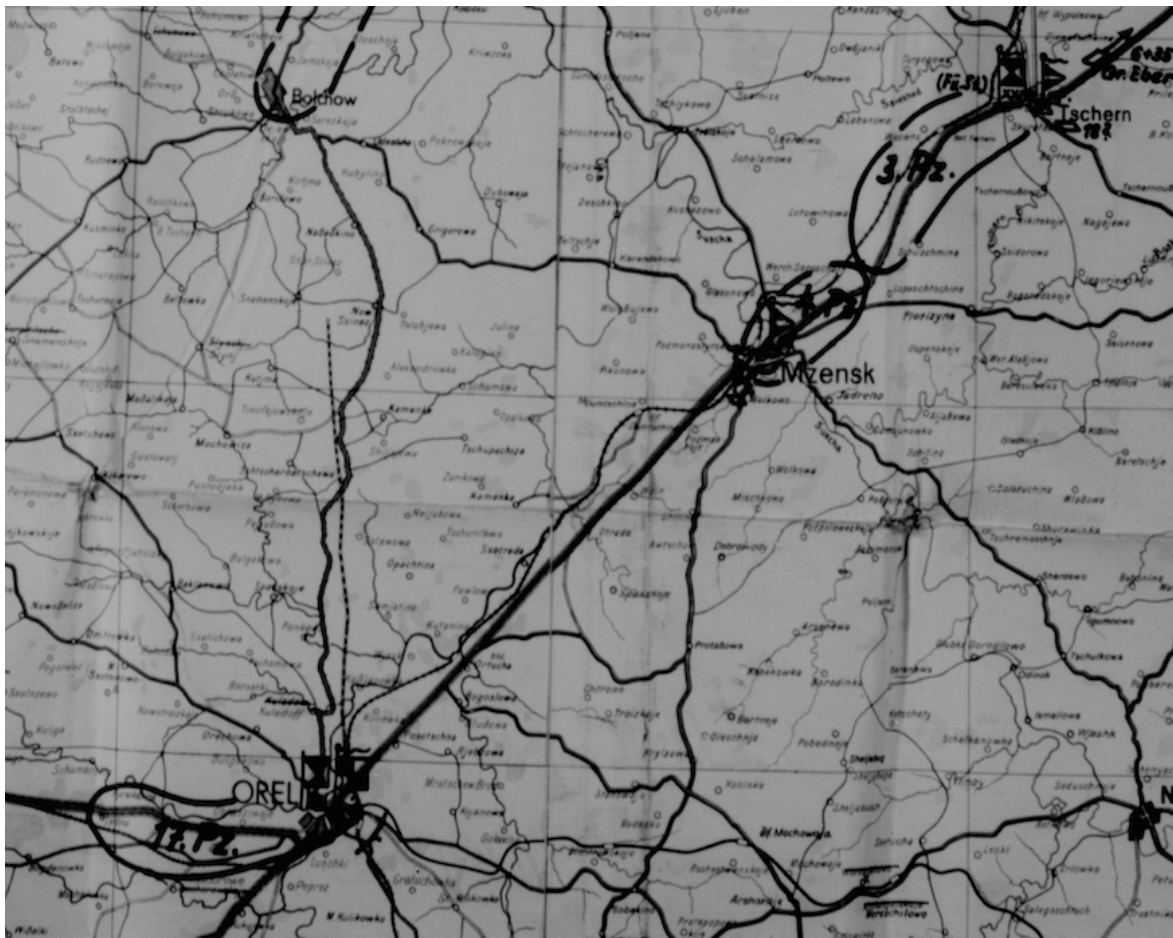


Figure 11 German Lage Map for 27.10.41

Figure 12 German Lage Map for 27.10.41

and the *Lage* map from the German war diary confirms this, as the 3rd and 4th Panzer divisions were in the vicinity of the Mtsenk, while the 17th Panzer division was in Orel.¹⁰⁴

This improvement has a dual explanation. Logically, the War Office's picture of Guderian's Panzer Army improved as the campaign went on, as the volume of intelligence dramatically increased. The second explanation has more to do with the structural

¹⁰⁴ TNA, WO 208/1765, Eastern Front Situation Map, 27 October 1941; National Archives and Records Administration, T-313, Roll 93, frame 335070, picture no. 99, *Lage* map, 27 October 1941, Accessed online via WW2 archives, <https://www.digitalarchives.org/t313-panzer-armies>.

circumstances of the front itself. For instance, during the rapid advances of the Smolensk and Kiev phases, the speed of Guderian's divisions outpaced the intelligence chain, as by the time signals were intercepted and rendered cartographically, the formations would have moved on. However, from October to December, the front was much more stagnant, largely due to the bitter weather and desperate supply crisis faced by both the Soviets and Germans.¹⁰⁵ These conditions, therefore, stalled Guderian's army and allowed the War Office's cartographers to catch up. Paradoxically, this meant that a more static front produced a more accurate intelligence picture. This example reinforces the unevenness of the British intelligence picture, as accuracy was not always a product of capability, but sometimes depended on the relationship between operational speed and the speed of intelligence processing networks.

By December, the wider global war had changed how the British apparatus digested Ultra intelligence on the 2nd Panzer Army. Indeed, selected batches of raw decrypts labelled "Boniface Digests" were routed to the Prime Minister via Sir Hastings Ismay rather than straight to Churchill, who had departed for Washington following Pearl Harbor. "Boniface" was the fictitious British agent that suggested to the Germans that there was an inside leak, rather than that Enigma was broken.¹⁰⁶ HW 1/323 (13 December) reveals that the Germans were retreating on the Tula and Moscow fronts, and that the Panzer Army had "no more forces left to close the gap between 296 and 31 divisions", information that allowed the British to understand Guderian's Panzers had exhausted their strength and could no longer maintain the front.¹⁰⁷ Two days later, the HW 1/324 digest distilled CX/MSS/529/T10 into a single sentence:

¹⁰⁵ Mark Harrison, "Barbarossa: The Soviet Response, 1941," in *From Peace to War: Germany, Soviet Russia and the World, 1939-1941*, ed. Bernd Wegner (Providence, RI: Berghahn Books, 1997), p. 439; Stahel, *Operation Barbarossa and Germany's Defeat in the East*, pp. 2-3.

¹⁰⁶ Christopher Grey, *Decoding Organisation: Bletchley Park, Codebreaking and Organisation Studies* (Cambridge: Cambridge University Press, 2012), p. 88.

¹⁰⁷ TNA, HW 1/323, CX/MSS/525/T3, 12 December 1941; Boniface digest C/8318.

“Germans anxious about possible Russian breakthrough at Orel.”¹⁰⁸ The Bletchley index card for this decrypt noted the German command's “fear,” rather than a neutral operational term, indicating that Ultra allowed Bletchley insight into the morale and sentiment of the German army, not just its operational activity.¹⁰⁹ HW 1/332, dated 24 December 1941, contained the only named reference to Guderian in the entire 1941 HW 1 record. Within the file, a Flieger Korps signal describes the defensive actions of “Panzer Army Guderian,” which entailed attacking Rusa and Wolokolmask.¹¹⁰ This verified to the British that these locations were now in Russian hands, with the use of the word “confirm” by a Bletchley analyst suggesting the British had intelligence from elsewhere on this particular frontier, highlighting how other means of information gathering were used to supplement Ultra to build a full intelligence picture. Christmas Day brought HW 1/333, which recorded Hitler's personal order requiring daily tank servicing to be restored to all armoured divisions. To this decrypt, a Bletchley analyst added: “Note: Probably to Panzer Gruppen 2.” The use of the word “probably” is a reminder that even at its most precise, Ultra still depended on human analytical judgement, and could not be taken as a fact, further illustrated by the mislabelling of Guderian's armour, which had been redesignated in early October.¹¹¹

The documentary record of October-December 1941 demonstrates that British intelligence was able to track the operations of the 2nd Panzer Army with, by and large, considerable accuracy. The intelligence gap at Typhoon's opening mirrors that at Barbarossa's, yet in my research, I found that the volume of significant decrypts regarding the 2nd Panzer

¹⁰⁸ TNA, HW 1/324, CX/MSS/529/T10, 13 December 1941; Boniface digest C/8335.

¹⁰⁹ Ibid.

¹¹⁰ TNA, HW 1/332, CX/MSS/557/T21, 23 December 1941; Boniface digest C/8388.

¹¹¹ TNA, HW 1/333, CX/MSS/554/T15, 21 December 1941; Boniface digest C/8392; Macksey, *Guderian: Panzer General*, p. 155.

Army exceeded that available during the Smolensk and Kiev phases. Indeed, GC&CS's internal history shows that the suspension of the Tula attack on December 6 was due to temperatures reaching minus 35 degrees, incapacitating the German armour, a level of understanding no other wartime intelligence network could achieve.¹¹² Cross-checked with Halder's diary, Guderian's memoir, and the captured records of T-313, the British intelligence picture from June to December was at times more precise than Guderian's own retrospective account, which doesn't include exact grid references or supply deficit figures, for example. The overall British perception of the 2nd Panzer Army across 1941, as this dissertation argues, was mostly accurate but often uneven: impressive for the most part, but limited at campaign openings, and by the top-secret nature of Ultra, which created a disparity between Bletchley and the War Office. While this gap improved from July-September to October-December, as shown in the previous chapters, it still existed, yet it was partially closed by the slow-moving front towards the end of 1941. The question addressed in the following chapter is whether the American picture of the same formation, assembled without any consistent Ultra, came anywhere close to matching this record.

¹¹² GC&CS, HW 11/6, p. 133.

A Distant Picture: American Intelligence and Guderian's Panzers, 1941

In June 1941, American intelligence occupied a structurally different position from its British counterpart. As the U.S. did not enter the war until December 1941, American intelligence observed Guderian's Panzers for almost its entire campaign as a non-belligerent. However, despite the U.S.'s peacetime context, the Anglo-American intelligence relationship began to develop in the early 1940s.¹¹³ In February 1941, a Joint U.S. Army and Navy delegation, led by Captain Sinkov, visited Bletchley Park and was reportedly shown the bombe machine, laying important foundations for intelligence sharing.¹¹⁴ Throughout 1941, Bletchley Park Commander Alastair Denniston ensured a steady flow of information from Britain to America.¹¹⁵ Nonetheless, while British intelligence shared processed assessments with the Americans throughout 1941, and American officials were aware of British codebreaking advances, formalised and regular Ultra sharing did not occur until BRUSA in 1943.¹¹⁶ The Americans did possess their own signals capability, as a team of U.S. SIS codebreakers, led by William Friedman, broke the Japanese diplomatic cypher in November 1940, yet this achievement allowed no visibility into German military communications.¹¹⁷ The absence of direct Ultra access was decisive, and as a result, the American picture of Guderian's Panzers was assembled from inferior information. The contrast between the British and American pictures reveals the advantage granted by consistent access to Ultra intelligence. However, the

¹¹³ Hinsley, *British Intelligence in the Second World War*, p. 115.

¹¹⁴ Ralph Erskine, "Sinkov Mission," pp. 97-109.

¹¹⁵ R. A. Denniston, "The Professional Career of A. G. Denniston," in *British and American Approaches to Intelligence*, ed. K. G. Robertson (London: Palgrave Macmillan, 1987), p. 104; Erskine, "Sinkov Mission," p. 113.

¹¹⁶ Ralph Erskine, "Churchill and the Start of the Ultra-Magic Deals," *International Journal of Intelligence and CounterIntelligence* 10, no. 1 (1997): p.57; Sims, "BRUSA Agreement," p.30.

¹¹⁷ David A. Hatch, "ENIGMA and PURPLE: How the Allies Broke German and Japanese Codes During the War," in *Coding Theory and Cryptography*, ed. D. Joyner (Berlin and Heidelberg: Springer, 2000), p. 55.

case this chapter makes is not that American intelligence was incompetent, but it was operating at the only achievable level of precision without consistent access to Ultra. Nonetheless, the available intelligence was insufficient for the Americans to track Guderian's Panzers with the same level of detail as the British did.

The open-source picture of Barbarossa's initial phases was characterised by the front page of the *Sunday Star* on 22 June, which reported the "sudden" opening of a "1,500-mile front" in the East.¹¹⁸ However, the "sudden" description of the invasion was not substantially different from the intelligence reaching Washington that same week. On June 16, the U.S. attaché in London, General Raymond Lee, relayed that the "prevailing opinion" is that Germany would attack Russia.¹¹⁹ On June 19, Colonel Yeaton, the attaché in Moscow, reported that an invasion of Russia was possible, though he speculated whether such reports were for "propaganda purposes."¹²⁰ A more detailed assessment came from Switzerland, where a source codenamed "Mr Donau" reported on June 20 that Germany had "at most 12 Panzer and 10 motorised divisions" stationed on the border with Russia.¹²¹ However, a cross-reference with contemporary information reveals that 'Donau's' assessment was significantly inaccurate, with the actual composition being 17 Panzer and 13 motorised divisions.¹²² Taken together, these cables represent the ceiling of American intelligence before Barbarossa, as the absence of Ultra

¹¹⁸ "Germany Declares War on Russians; Hitler Assails Soviet as Armies Move," *The Sunday Star* (Washington, DC), June 22, 1941, p.1, *Chronicling America: Library of Congress*, accessed April 25, 2026.

¹¹⁹ Raymond E. Lee, confidential cable from London, 16 June 1941, NARA, RG 59, M982, reel 62, 740.0011EW, frame 67 <https://catalog.archives.gov/id/604955732?objectPage=67#object-thumb--67>.

¹²⁰ Ivan D. Yeaton, confidential cable from Moscow, 19 June 1941, NARA, RG 59, M982, reel 62, 740.0011EW, frame 80, <https://catalog.archives.gov/id/604955732?objectPage=80#object-thumb--80>.

¹²¹ Leland Harrison, Despatch No. 1766 to the Secretary of State, 24 June 1941, enclosing statements by "Donau," 20 June 1941, NARA, RG 59, M982, reel 62, 740.0011EW/12881, frame 702-704, <https://catalog.archives.gov/id/604955732?objectPage=702>.

¹²² Alan Bullock, *Hitler and Stalin: Parallel Lives* (London: HarperCollins, 1991), p. 802.

meant American assessments were constrained to the uncertainty and imprecision of what human sources could report. On 25 June 1941, Yeaton cabled an order-of-battle picture of German forces, strikingly similar to the MI14 Weekly Summary issued the week before examined in Chapter One.¹²³ Indeed, Yeaton's cable relays the same divisional composition by location that was speculated in the weekly summary, one week later than MI14 did.¹²⁴ This illustrates how, in peacetime, American intelligence was largely reliant on what the British chose to share, and evidences a lag in American understanding relative to its British counterpart.

The American picture of Guderian's Corps' activity gathered over the summer of 1941 reveals the limitations of a picture assembled in peacetime without consistent Ultra. On July 25, a cable from Berlin signed "Hohenthal" reported that the "army led by Guderian" was estimated to be about 45 miles from Moscow.¹²⁵ However, a comparison with *Panzer Leader* reveals the great inaccuracy of this assessment, as Guderian recorded that his closest division to Moscow on July 25, the 10th Panzer, was still c. 370 kilometres west of the city, in "Elnya."¹²⁶ The *Lage* map for July 26 reinforces just how inaccurate the Hohenthal assessment was, as it shows the majority of Guderian's divisions still in the vicinity of Smolensk, c. 390 kilometres from Moscow.¹²⁷ This positional error is accompanied by a mislabelling of the formation,

¹²³ Ivan D. Yeaton, confidential cable from Moscow, 25 June 1941, NARA, RG 59, M982, reel 62, 740.0011EW/12712, frame 42, <https://catalog.archives.gov/id/604955732?objectPage=42>; TNA, WO 208/2258, Weekly Intelligence Summary No. 96, 11-18 June 1941. Image no. 411.

¹²⁴ Ibid.

¹²⁵ Hohenthal, confidential cable from Berlin, 25 July 1941, NARA, RG 59, M982, reel 72, 740.0011EW, frame 528, <https://catalog.archives.gov/id/604967334?objectPage=528#object-thumb--528>.

¹²⁶ Guderian, *Panzer Leader*, p. 181.

¹²⁷ National Archives and Records Administration, T-313, Roll 86, frame 326131, picture no. 119, *Lage* map, 26 July 1941, Accessed online via WW2 archives, <https://www.iidigitalarchives.org/t313-panzer-armies>.

which describes a source “thought to be reliable”, attributing the “first tank army” as “under Guderian.”¹²⁸ By sharp contrast, the British in mid-July were reading the precise, accurate grid references for Guderian’s Corps. The significant factual errors in the Hohenthal cable evidence the difficulty of locating a formation without consistent Ultra. However, Hohenthal, on August 2, incorrectly reported that “Armoured Army One” was under Guderian for the second time, eight days after his initial cable.¹²⁹ This illustrates that this inaccuracy was not a singular case, but a repeated incident of imprecision. By August 6, the picture had recovered slightly, as the MID’s daily situation report correctly placed “Panzer Group, General Oberst Guderian” under Army Group Centre.¹³⁰ This provided accurate intelligence but was not as precise as Ultra, lacking named corps and divisions, as well as supply-state information. The MID map for 18 August simply labelled Army Group Centre’s armoured forces as “Two Panzer Armies”, and while correct in count, it is comparatively blind to the maps produced by MI14 in late 1941, which, as shown in Chapter Two, displayed divisional composition and impressive geographic accuracy.¹³¹

The consequences of a system dependent on open sources are illustrated in the *Wilmington Morning Star* for September 18, 1941. The headline “Reds Report Famous Nazi Panzer Units Completely Smashed” described how Soviet troops had destroyed *Panzergruppe*

¹²⁸ Hohenthal, confidential cable from Berlin, 25 July 1941, NARA, RG 59, M982, reel 72, 740.0011EW, frame 528, <https://catalog.archives.gov/id/604967334?objectPage=528#object-thumb--528>;

¹²⁹ Hohenthal, confidential cable from Berlin, 2 August 1941, NARA, RG 59, M982, reel 72, 740.0011EW, frame 530, <https://catalog.archives.gov/id/604967334?objectPage=530>.

¹³⁰ M.I.D., War Department, Situation Report No. 460, 12:00 p.m., 6 August 1941, NARA, RG 59, M982, reel 72, 740.0011EW, frame 497, <https://catalog.archives.gov/id/604967334?objectPage=497>.

¹³¹ M.I.D., War Department, Russo-German Situation Map, 11:00 a.m., 18 August 1941, NARA, RG 59, M982, reel 87, 740.0011EW, frame 54-55, <https://catalog.archives.gov/id/604983181?objectPage=54>; WO 208/1765, Eastern Front Situation Map, 27 October 1941.

2, while the paper dubbed Guderian the “phantom general of the French campaign.”¹³² On the contrary, on the same day, Bletchley learned that *Panzergruppe 2* was closing the Kiev encirclement in near real time.¹³³ After entering the war in December, in March 1942, the COI made a retrospective effort to understand the deployment of German forces during the opening of the Eastern Front, to fill the intelligence gap created by a peacetime context. In 1993, the CIA produced a historical review of the document, assessing its accuracy and limitations. The review found that, in reconstructing the 1941 campaign, COI analysts had estimated German strength by reviewing the *New York Times* “day by day, and division by division.”¹³⁴ Furthermore, the review deduced that “analysts could not go either to experts or to sources; they had to become the one and to invent the other,” highlighting in a sentence the limitations of American intelligence in this period.¹³⁵ The factual errors produced by the COI were made apparent by the review, as German panzer divisions were estimated at 430, against Halder’s figure of 210; ammunition requirements were inflated by c. 800% and daily supply trains to major bases were estimated at 275 against Halder’s figure of 30-40.¹³⁶ That the COI would use newspaper reporting, which has been shown to be at times inaccurate, reinforces this chapter’s thesis: that American intelligence on Guderian’s panzers was structurally limited without Ultra and, while not incompetent, was far inferior to the British understanding. In comparison, Bletchley understood, via HW 1/220, that the 2nd Panzer Army was receiving 317 cubic meters

¹³² “Reds Report Famous Nazi Panzer Units Completely Smashed,” *Wilmington Morning Star* (Wilmington, NC), September 18, 1941, 1, *Chronicling America: Library of Congress*, accessed April 25, 2026.

¹³³ TNA, HW 1/69, CX/MSS/244/T9, 15 September 1941, forwarded to Churchill 16 September 1941; TNA, HW 1/71, CX/MSS/249/T20, 16 September 1941, forwarded to Churchill 17 September 1941.

¹³⁴ CIA Historical Review Program, retrospective review of COI Monograph No. 6, *The German Supply Problem on the Eastern Front, June 22-December 6, 1941* (25 March 1942), 22 September 1993, p. 2. Accessed online via <https://www.cia.gov/resources/csi/static/Eastern-Front-Turning-Point.pdf>.

¹³⁵ Ibid.

¹³⁶ Ibid., pp. 11-13.

of fuel against their required 1,200, representing formation-specific, real-time data derived from Guderian's own signals.¹³⁷ The CIA review determined that the information used to create the COI assessment was "incredibly meagre," as the judgements pointed "feebly" in the right direction, declaring the conclusions drawn from the German data "bore little resemblance to reality"¹³⁸

In December 1941, American intelligence, as did the British, began to understand the supply difficulties that plagued Guderian's Corps. On December 1, a U.S. diplomat in Bern, Jerome Huddle, cabled a source with apparent access to German medical personnel, stating material losses suffered by the German army were "irreparable," and at least twelve panzer divisions were destroyed.¹³⁹ By contrast, on December 6, Bletchley was able to read the 2nd Panzer Army's suspension of the attack on Tula, thus confirming that Guderian's army had reached the end of its offensive capacity.¹⁴⁰ While the Bern telegram allowed the Americans a small insight into the deterioration of Guderian's situation in the East, British intelligence could read the specific formation order that ended the Panzers' advance.¹⁴¹ The distance between British and American intelligence is epitomised by the U.S. Seventh Army Special report, incorporated into MI14's personality file on Guderian, which contains an interrogation of Guderian by American intelligence officers in the spring of 1945. In the interview, Guderian described the Eastern Campaign, detailing the "tremendous difficulties" faced by his Corps and attributing the invasion's failure to "ground and weather conditions" that caused misery,

¹³⁷ TNA, HW 1/220, CX/MSS/440/T9, 16 November 1941, forwarded to Churchill 18 November 1941.

¹³⁸ CIA Historical Review Program, retrospective review of COI Monograph No. 6, p. 2.

¹³⁹ Jerome K. Huddle, telegram from Bern, Section Two, 1 December 1941, NARA, RG 59, M982, reel 87, 740.0011EW/17051-17122, frame 283, <https://catalog.archives.gov/id/604983181?objectPage=283>.

¹⁴⁰ TNA, HW 11/6, p. 133,

¹⁴¹ Ibid.

sickness, and exhaustion.¹⁴² This case is instructive, as American intelligence, years after the events it describes, gained Guderian's narrative of the period studied in this dissertation by interrogating the man himself. On the contrary, British intelligence could piece together the same narrative, contemporaneously, as they had been reading his army's orders, position and status in near real time since the campaign began. The distance between these two intelligence achievements, one more reconstructive, one more concurrent, is the structural asymmetry that this dissertation has traced across six months of 1941. American intelligence was not inadequate; it operated without consistent access to the instrument that enabled the British picture. The consequence was a distant, derivative perception of Guderian's Panzers, mostly accurate in its outline, but always several steps behind the operational reality that the British could see.

¹⁴² TNA, WO 208/4412, SR19/S narrative section, U.S. Seventh Army Special Report No. 39, 14 June 1945, R/C-1380.

Conclusion

This dissertation has argued from its outset that Britain and America were not simply viewing the same campaign from different lenses but were operating in categorically different information environments. The British intelligence picture of Guderian's formation was not uniformly excellent, but it was certainly superior to anything the American counterpart could produce, and the reason for this was not only analytical, but technological. Indeed, consistent access to Ultra was the key difference. With it, British intelligence could trace the formations' constituent corps, assess their status, and observe their operations in near real time.

Chapter One established that, despite the slow start, British intelligence achieved accurate formation-level visibility of *Panzergruppe 2* during the opening phases of Barbarossa, confirming the divisional composition to Churchill through HW 1/10, and was tracking individual Panzer Divisions via grid reference via HW 5/23.¹⁴³ The nine-day cluster of HW 1 files from 4-17 September showed British intelligence reading the movements of all three of *Panzergruppe 2*'s Corps through the Kiev encirclement, understanding the closure of the pocket the day it occurred.¹⁴⁴ However, while evidencing this precision, Chapter One also illuminated the structural unevenness of Britain's picture. MI14's strategic review of the opening weeks of the front, marked officers only, failed to name *Panzergruppe 2*, or Guderian, while also admitting the difficulty of assembling such a report.¹⁴⁵ What Bletchley held could not always be synthesised by the War Office, which evidences the difficulties faced

¹⁴³ TNA, HW 1/10, D.M.I. No. 26/M.I.14, 14 July 1941; TNA, HW 5/23, CX/MSS/61 and CX/MSS/65, Koluft *Panzergruppe 2* reports, 16-17 July 1941.

¹⁴⁴ TNA, HW 1/69, CX/MSS/244/T9, 15 September 1941; TNA, HW 1/71, CX/MSS/249/T20, 16 September 1941.

¹⁴⁵ TNA, WO 208/1778, M.I.14/DR/106/41, p. 1.

by the operation of two intelligence systems at different levels of the distribution chain. This gap led to the significant discrepancy between the original *Lage* map for 12 July and the War Office's July 15 map.¹⁴⁶

Chapter Two showed that British coverage of the 2nd Panzer Army peaked during Operation Typhoon and the collapse of the German offensive on Moscow. The escalation in batch sizes of HW 1 in this period reflects not only the intensification of intercepted German traffic but also the growing perceived importance of this intelligence, as more and more decrypts were forwarded to Churchill. The order-of-battle snapshots, found in HW 13/151, confirmed the degradation of Guderian's Corps and tracked the transformation of the Panzer Army as infantry corps were added to supplement the heavy tank losses sustained on the front.¹⁴⁷ The chapter also found that the nature of combat in this period, the slow-moving front, and the constraints of supply problems on the German advance, allowed the War Office's picture of the 2nd Panzer Army to improve, as shown by a substantially more accurate situation map for October 27.¹⁴⁸ However, the chapter also demonstrated that the intelligence generated by Ultra could not be taken at face value, as its information was not always graded 'A', as highlighted in the example in which the defensive actions of the 167th Infantry were misinterpreted as those of the 24th Panzer Corps.¹⁴⁹ Despite this, during this period, British intelligence could track the operational arc of the 2nd Panzer Army from the beginning of the advance to its final offensive. The picture was accurate but uneven: most precise when the

¹⁴⁶ National Archives and Records Administration, T-313, Roll 86, frame 326085, picture no. 73, *Lage* map, 12 July 1941; TNA, WO 208/1764, Situation Map, 15 July 1941.

¹⁴⁷ TNA, HW 13/151, GC&CS Eastern Front Orders of Battle, 1 November, 22 November, 6 December 1941.

¹⁴⁸ TNA, WO 208/1765, Eastern Front Situation Map, 27 October 1941; National Archives and Records Administration, T-313, Roll 93, frame 335070, picture no. 99, *Lage* map, 27 October 1941, Accessed online via WW2 archives, <https://www.iidigitalarchives.org/t313-panzer-armies>.

¹⁴⁹ TNA, HW 1/193, CX/MSS/404/T21, 3 November 1941.

formation's situation grew desperate, and structured by the happenstance of which Enigma Keys Bletchley could break and when.

Chapter Three demonstrated what the lack of regular access to Ultra meant in practice. The American picture, assembled from inferior sources, was often much thinner and, in certain cases, was plainly inaccurate. The CIA's 1993 review of the COI's analytical reconstruction of the campaign found that analysts had built their assessments of German forces via the *New York Times*, an acknowledgement by the American intelligence community that revealed the consequences of assembling a picture without Ultra.¹⁵⁰ The U.S. Seventh Army's interrogation of Guderian in 1945 symbolised this reality, as while Britain read Guderian's operational movements concurrently, America understood these facts by asking Guderian himself, three and a half years after the campaign.¹⁵¹

The findings of this study constitute something more significant than a comparison of two wartime intelligence pictures. Indeed, they reveal the structural advantage that Ultra conferred in tracking a specific German formation and, by extension, in understanding the modern battlefield. The American intelligence apparatus in 1941 was certainly not incompetent, as shown by its decryption efforts of the Japanese 'Purple' Cypher, but on the European front, it was constrained by the ceiling of information it could obtain without Ultra. Indeed, this ceiling was reached by human intelligence chains, the upper limit of achievable information without Ultra access. Bletchley, by comparison, could exceed this ceiling. The formation that America located with a c. 370-kilometre error in July 1941, British intelligence was tracking to the very grid reference, as distributed by

¹⁵⁰ CIA Historical Review Program, retrospective review of COI Monograph No. 6, p. 2.

¹⁵¹ TNA, WO 208/4412, SR19/S narrative section, U.S. Seventh Army Special Report No. 39, 14 June 1945, R/C-1380.

the German commanders themselves.¹⁵² Indeed, the British intelligence record was, in several instances, more precise than Guderian's own retrospective record, giving the British a view so detailed that the front could be understood in near real time. In the Allied understanding of German armoured operations in 1941, Ultra was not just an advantage; it represented the difference between watching the campaign from a distance and reading and understanding its reality.

Total word count: 8786 words.



200
273-GT-64 Generaloberst Guderian
at division headquarters in
Tolotschin.

¹⁵² Hohenthal, confidential cable from Berlin, 25 July 1941, NARA, RG 59, M982, reel 72, 740.0011EW, frame 528, <https://catalog.archives.gov/id/604967334?objectPage=528#object-thumb--528>.

Bibliography

I. Primary Sources

A. Unpublished - The National Archives, Kew.

German Army Orders of Battle. November 14, 1940-October 12, 1944. MS Government Communications Headquarters: HW 13: Government Code and Cypher School: Second World War Intelligence Summaries Based on Sigint HW 13/151. The National Archives (Kew, United Kingdom). Declassified Documents Online: Twentieth-Century British Intelligence.
link.gale.com/apps/doc/QIDGJC890462971/TCBI?u=exeter&sid=bookmark-TCBI&xid=68afaa24&pg=1.

Government Code and Cypher School. Signals Intelligence Passed to the Prime Minister. TNA, HW 1/10, HW 1/44, HW 1/46, HW 1/60, HW 1/64, HW 1/65, HW 1/68, HW 1/69, HW 1/71, HW 1/130, HW 1/193, HW 1/197, HW 1/203, HW 1/218, HW 1/220, HW 1/323, HW 1/324, HW 1/332, HW 1/333.

Government Code and Cypher School. German Section: Reports of German Army and Air Force High Grade Machine Decrypts. TNA, HW 5/23.

Military Intelligence Directorate (MI14). *Review of the Russo-German Campaign Between 22 June and 27 August 1941*. M.I.14/DR/106/41. TNA, WO 208/1778. August 1941.

Military Intelligence Directorate (MI14). *The German Advance from the North - Kiev Operation*. TNA, WO 208/1788. Covering 22 June-22 September 1941.

Military Intelligence Directorate (MI14). Eastern Front Situation Maps. TNA, WO 208/1764 and WO 208/1765. June-December 1941.

Military Intelligence Directorate (MI14). *Who's Who of Senior German Army Officers (Birley's Bible): Guderian, Heinz*. TNA, WO 208/4412. Incorporating U.S. Seventh Army Special Report No. 39, 14 June 1945, R/C-1380.

War Office. *Weekly Intelligence Summaries Nos. 96, 98, 112, 113*. TNA, WO 208/2258. Accessed via British Online Archives.
<https://britishonlinearchives.com/documents/8282/war-office-weekly-intelligence-sep-1940-dec-1941#?xywh=-3168%2C-222%2C8954%2C4423>.

Vol. VI The Eastern Front. 1941-1944. MS HW 11/6, Government Communications Headquarters: HW 11: Government Code and Cypher School: World War II Official Histories. Air Military History. The National Archives (Kew, United Kingdom). Declassified Documents Online: Twentieth-Century British Intelligence.
<https://link.gale.com/apps/doc/OWVOBP056881888/TCBI?u=exeter&sid=bookmark-TCBI&xid=62767e22&pg=1>.

B. Unpublished - National Archives and Records Administration.

- Harrison, Leland. Despatch No. 1766 to the Secretary of State, 24 June 1941, enclosing statements by "Donau," 20 June 1941. NARA, RG 59, M982, reel 62, 740.0011EW/12881, frame 702-704.
<https://catalog.archives.gov/id/604955732?objectPage=702>.
- Hohenthal. Confidential cable from Berlin, 25 July 1941. NARA, RG 59, M982, reel 72, 740.0011EW, frame 528. <https://catalog.archives.gov/id/604967334?objectPage=528>.
- Hohenthal. Confidential cable from Berlin, 2 August 1941. NARA, RG 59, M982, reel 72, 740.0011EW, frame 530. <https://catalog.archives.gov/id/604967334?objectPage=530>.
- Huddle, Jerome K. Telegram from Bern, Section Two, 1 December 1941. NARA, RG 59, M982, reel 87, 740.0011EW/17051-17122, frame 283.
<https://catalog.archives.gov/id/604983181?objectPage=283>.
- Lee, Raymond E. Confidential cable from London, 16 June 1941. NARA, RG 59, M982, reel 62, 740.0011EW, frame 67.
<https://catalog.archives.gov/id/604955732?objectPage=67>.
- Military Intelligence Division, War Department. *Situation Report No. 460*. 6 August 1941. NARA, RG 59, M982, reel 72, 740.0011EW, frame 497.
<https://catalog.archives.gov/id/604967334?objectPage=497>.
- Military Intelligence Division, War Department. *Russo-German Situation Map*. 18 August 1941. NARA, RG 59, M982, reel 87, 740.0011EW, frame 54-55.
<https://catalog.archives.gov/id/604983181?objectPage=54>.
- Yeaton, Ivan D. Confidential cable from Moscow, 19 June 1941. NARA, RG 59, M982, reel 62, 740.0011EW, frame 80.
<https://catalog.archives.gov/id/604955732?objectPage=80>.
- Yeaton, Ivan D. Confidential cable from Moscow, 25 June 1941. NARA, RG 59, M982, reel 62, 740.0011EW/12712, frame 42.
<https://catalog.archives.gov/id/604955732?objectPage=42>.

C. Unpublished - German records from National Archives and Records Administration.

- Panzergruppe 2 / 2nd Panzer Army Kriegstagebuch* [War Diary]. NARA, T-313, Roll 86. *Lage* map, 12 July 1941, frame 326085, picture no. 73. *Lage* map, 26 July 1941, frame 326131, picture no. 119. Accessed via WW2 Digital Archives, <https://wwiigitalarchives.org/t313-panzer-armies>.
- XXIV Panzer Corps Daily Report [*Tagesmeldung XXIV.Pz.K. vom 3.11*]. NARA, T-313, Roll 93, frame 335624, picture no. 650, 3 November 1941. Accessed via WW2 Digital Archives, <https://wwiigitalarchives.org/t313-panzer-armies>.
- 2nd Panzer Army *Lage* map, 27 October 1941. NARA, T-313, Roll 93, frame 335070, picture no. 99. Accessed via WW2 Digital Archives, <https://wwiigitalarchives.org/t313-panzer-armies>.

D. Published Primary Sources.

CIA Historical Review Program. Retrospective review of COI Monograph No. 6, *The German Supply Problem on the Eastern Front, June 22-December 6, 1941* (25 March 1942). Declassified 22 September 1993. Accessed online via <https://www.cia.gov/resources/csi/static/Eastern-Front-Turning-Point.pdf>.

Fletcher, Willard Allen. *Guides to German Records Microfilmed at Alexandria, VA, No. 40: Records of German Field Commands, Army Groups, Part I*. Washington, DC: American Historical Association, Committee for the Study of War Documents, 1963. Accessed via WW2 Digital Archives, <https://wwiigitalarchives.org/t313-panzer-armies>.

"Germany Declares War on Russians; Hitler Assails Soviet as Armies Move." *The Sunday Star* (Washington, DC), 22 June 1941, p. 1. Accessed 25 April 2026 via Chronicling America, Library of Congress.

Guderian, Heinz. *Achtung-Panzer! The Development of Armoured Forces, Their Tactics and Operational Potential*. Translated by Christopher Duffy. London: Arms and Armour Press, 1992.

Guderian, Heinz. *Panzer Leader*. Translated by Constantine Fitzgibbon. London: Michael Joseph, 1952.

Halder, Franz. *War Journal of Franz Halder, Chief of the General Staff of Supreme Command of the German Army (OKH), Volume VI*. Translated and edited by Historical Division, SSUSA. Fort Leavenworth, KS: Archives Section, Library Services, 1948. Accessed via https://militera.lib.ru/db/0/pdf/halder_eng6.pdf.

Halder, Franz. *War Journal of Franz Halder, Chief of the General Staff of Supreme Command of the German Army (OKH), Volume VII*. Translated and edited by Historical Division, SSUSA. Fort Leavenworth, KS: Archives Section, Library Services, 1948. Accessed via https://militera.lib.ru/db/0/pdf/halder_eng7.pdf.

"Reds Report Famous Nazi Panzer Units Completely Smashed." *Wilmington Morning Star* (Wilmington, NC), 18 September 1941, p. 1. Accessed 25 April 2026 via Chronicling America, Library of Congress.

Sale, Tony, comp. *The Bletchley Park 1944 Cryptographic Dictionary*. 2001. Accessed 28 April 2026. <https://www.codesandciphers.org.uk/documents/cryptdict/cryptxtt.pdf>.

Winterbotham, F. W. *The Ultra Secret*. London: Weidenfeld & Nicolson, 1974.

II. Secondary Sources.

A. Books

Aldrich, Richard J. *GCHQ: The Uncensored Story of Britain's Most Secret Intelligence Agency*. London: HarperPress, 2010.

Aldrich, Richard J. *The Hidden Hand: Britain, America and Cold War Secret Intelligence*. London: John Murray, 2001.

Atkin, Ronald. *Pillar of Fire: Dunkirk 1940*. London: Sidgwick & Jackson, 1990.

- Bartlett, Frederic C. *Remembering: A Study in Experimental and Social Psychology*. Cambridge: Cambridge University Press, 1932.
- Battistelli, Pier Paolo. *Heinz Guderian*. Vol. 13. Oxford: Bloomsbury Publishing, 2013.
- Bullock, Alan. *Hitler and Stalin: Parallel Lives*. London: HarperCollins, 1991.
- Cradock, Percy. *Know Your Enemy: How the Joint Intelligence Committee Saw the World*. London: John Murray, 2002.
- Deutsch, Harold C. *The Influence of Ultra on World War II*. Carlisle, PA: U.S. Army War College, 1978.
- DiNardo, R. L. *Germany's Panzer Arm in World War II*. Mechanicsburg, PA: Stackpole Books, 2006.
- Ferris, John. *Behind the Enigma: The Authorised History of GCHQ, Britain's Cyber-Intelligence Agency*. London: Bloomsbury, 2020.
- Fritz, Stephen G. *Ostkrieg: Hitler's War of Extermination in the East*. Lexington: University Press of Kentucky, 2011.
- Fugate, Bryan. *Operation Barbarossa: Strategy and Tactics on the Eastern Front, 1941*. Novato, CA: Presidio Press, 1984.
- Glantz, David M. *Barbarossa: Hitler's Invasion of Russia, 1941*. Stroud: Tempus, 2001.
- Glantz, David M. *Before Stalingrad: Barbarossa - Hitler's Invasion of Russia 1941*. Stroud: Tempus, 2003.
- Glantz, David M., and Jonathan House. *When Titans Clashed: How the Red Army Stopped Hitler*. Lawrence: University Press of Kansas, 1995.
- Goralski, Robert, and Russell W. Freeburg. *Oil & War: How the Deadly Struggle for Fuel in World War II Meant Victory or Defeat*. Repr. ed. New York: William Morrow, 1987.
- Gorodetsky, Gabriel. *Grand Delusion: Stalin and the German Invasion of Russia*. New Haven: Yale University Press, 1999.
- Grey, Christopher. *Decoding Organisation: Bletchley Park, Codebreaking and Organisation Studies*. Cambridge: Cambridge University Press, 2012.
- Hart, Russell A. *Guderian: Panzer Pioneer or Myth Maker?* Washington, DC: Potomac Books, 2006.
- Hinsley, F. H. *British Intelligence in the Second World War: Abridged Edition*. Cambridge: Cambridge University Press, 1993.
- Hinsley, F. H., and Alan Stripp, eds. *Codebreakers: The Inside Story of Bletchley Park*. Oxford: Oxford University Press, 1993.
- Hodges, Andrew. *Alan Turing: The Enigma*. London: Burnett Books, 1983.
- Kirchubel, Robert. *Operation Barbarossa: The German Invasion of Soviet Russia*. Oxford: Osprey Publishing, 2013.
- Luther, Craig W. H. *Guderian's Panzers: From Triumph to Defeat on the Eastern Front (1941)*. Mechanicsburg, PA: Stackpole Books, 2025.

- Macksey, Kenneth. *Guderian: Panzer General*. London: MacDonald and Jane's, 1975.
- Mawdsley, Evan. *Thunder in the East: The Nazi-Soviet War, 1941-1945*. London: Hodder Arnold, 2005.
- McNab, Chris. *Hitler's Tanks: German Panzers of World War II*. Oxford: Bloomsbury Publishing, 2020.
- Mitcham, Samuel W. *Hitler's Legions: The German Army Order of Battle, World War II*. London: Leo Cooper, 1985. Accessed via <https://archive.org/details/hitlerslegionsge0000mitc/page/496/mode/2up>.
- Reynolds, Nicholas. *Need to Know: World War II and the Rise of American Intelligence*. New York: Mariner Books, 2022.
- Seaton, Albert. *The Russo-German War, 1941-1945*. London: Arthur Barker, 1971.
- Seidler, Hans, and Ian Baxter. *Operation Barbarossa: Hitler's Invasion of Russia*. Barnsley: Pen & Sword Military, 2010.
- Smith, Bradley F. *The Ultra-Magic Deals and the Most Secret Special Relationship, 1940-1946*. Novato, CA: Presidio Press, 1993.
- Spielberger, Walter. *Panzer IV and Its Variants*. Atglen, PA: Schiffer Military History, 1993.
- Spielberger, Walter. *PanzerKampfwagen IV*. Berkshire: Profile Publications, 1972.
- Stahel, David. *Hitler's Panzer Generals: Guderian, Hoepner, Reinhardt and Schmidt Unguarded*. Cambridge: Cambridge University Press, 2023.
- Stahel, David. *Operation Barbarossa and Germany's Defeat in the East*. Cambridge: Cambridge University Press, 2009.
- Stahel, David. *Operation Typhoon: Hitler's March on Moscow, October 1941*. Cambridge: Cambridge University Press, 2013.
- Stahel, David. *Retreat from Moscow: A New History of Germany's Winter Campaign, 1941-1942*. New York: Farrar, Straus and Giroux, 2019.
- Turing, Dermot. *X, Y & Z: The Real Story of How Enigma Was Broken*. Stroud: The History Press, 2018.

B. Book Chapters

- Andrew, Christopher. "Secret Intelligence and British Foreign Policy 1900-1939." In *Intelligence and International Relations 1900-1945*, edited by Christopher Andrew and Jeremy Noakes, 9-28. Liverpool: Liverpool University Press, 1987.
- Denniston, R. A. "The Professional Career of A. G. Denniston." In *British and American Approaches to Intelligence*, edited by K. G. Robertson, 104-120. London: Palgrave Macmillan, 1987.
- Harrison, Mark. "Barbarossa: The Soviet Response, 1941." In *From Peace to War: Germany, Soviet Russia and the World, 1939-1941*, edited by Bernd Wegner, 431-448. Providence, RI: Berghahn Books, 1997.

- Hatch, David A. "ENIGMA and PURPLE: How the Allies Broke German and Japanese Codes During the War." In *Coding Theory and Cryptography*, edited by D. Joyner, 53-61. Berlin and Heidelberg: Springer, 2000.
- Smith, Michael. "Acknowledgements." In *The Emperor's Codes: The Breaking of Japan's Secret Cyphers*. New York: Arcade Publishing, 2001.
- Smith, Michael. "How It Began: Bletchley Park Goes to War." In *Colossus: The Secrets of Bletchley Park's Codebreaking Computers*, edited by B. Jack Copeland, 19-35. Oxford: Oxford University Press, 2006.

C. Journal Articles

- Erskine, Ralph. "Churchill and the Start of the Ultra-Magic Deals." *International Journal of Intelligence and CounterIntelligence* 10, no. 1 (1997): 57-74.
- Erskine, Ralph. "What Did the Sinkov Mission Receive from Bletchley Park?" *Cryptologia* 24, no. 2 (2000): 97-109.
- Gorodetsky, Gabriel. "The Hess Affair and Anglo-Soviet Relations on the Eve of 'Barbarossa'." *The English Historical Review* 101, no. 399 (1986): 405-420.
- Hanyok, Robert J., and Bryce R. Smoot. "Sources and Methods Series: Considering Other Record Groups in NARA Holdings Cryptologic and Cryptologic-Related Records." *Cryptologia* 44, no. 5 (2020): 472-476.
<https://doi.org/10.1080/01611194.2020.1792003>.
- Harding, D. P. "Heinz Guderian as the Agent of Change: His Significant Impact on the Development of German Armoured Forces Between the World Wars." *Army History*, no. 31 (1994): 26-34. <https://www.jstor.org/stable/26304190>.
- Harris, J. Paul. "The Myth of Blitzkrieg." *War in History* 2, no. 3 (1995): 335-352.
- Kasperek, Christopher. "Enigma and Poland Revisited." *The Polish Review* 47, no. 1 (2002): 97-103.
- Lowenthal, David. "History and Memory." *The Public Historian* 19, no. 2 (Spring 1997): 30-39.
- Mawdsley, Evan. Review of *Operation Typhoon: Hitler's March on Moscow, October 1941*, by David Stahel. *War in History* 21, no. 3 (2014): 389-391.
- Nenninger, Timothy K. Review of *Achtung-Panzer! The Development of Armoured Forces, Their Tactics and Operational Potential*, by Heinz Guderian. *The Journal of Military History* 57, no. 4 (1993): 729-730.
- Richmond, Keith. "The Use of Ultra by Commanders." *Sabretache* 50, no. 4 (2009): 31-40.
- Sims, J. C. "The BRUSA Agreement of May 17, 1943." *Cryptologia* 21, no. 1 (1997): 30-38.
- Stolfi, Russell H. S. "The Greatest Encirclement in History: Link-Up of the German 3rd and 9th Panzer Divisions on 15 September 1941 in the Central Ukraine." *The RUSI Journal* 141, no. 6 (1996): 63-72.
- Wegner, Bernd. "The Road to Defeat: The German Campaigns in Russia 1941-43." *The Journal of Strategic Studies* 13, no. 1 (1990): 105-127.