Book Reviews

The Strategic Bombing of Germany: A Review Essay

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Introduction

Much had been written regarding the bomber offensive by the Royal Air Force and the US Army Air Forces (USAAF) during World War II, but new material and unusual interpretations continue to emerge. Below are three recent books that take a fresh look at the air offensive but have not received much notice. The first reviewed, written by a former RAF officer, deals with intelligence. The second, also the work of a retired RAF Officer, looks at leadership, direction and legitimacy in Bomber Command. The third is a volume in the German official history of the war. I will discuss these books and draw out some of their unique and interesting aspects.

John Stubbington is a retired Wing Commander and during his 24-year career was an Intelligence Officer and Electronic Warfare Officer, which included a tour with Bomber Command. His experiences led him to examine intelligence efforts at Bomber Command during World War II, but he asks questions that most historians do not ask and examined records that most historians do not examine. The result is a very interesting study. His title says much regarding his thesis: ***Kept in the Dark: The Denial to Bomber Command of Vital Ultra and Other Intelligence Information During World War II*** (Barnsley: Pen & Sword, 2010).

Stubbington charges that Bomber Command was deliberately, for political reasons, denied high-level intelligence, specifically, Ultra decrypts that were crucial to an effective bombing campaign.

First, we are given a useful overview of signals intelligence that culminates with a description of the German code machines termed Enigma and whose intelligence was labeled Ultra. The Poles had been working on these complex rotor machines since the late 1920s, and in March 1939 elected to share all they knew with Britain. A special facility was established at Bletchley Park outside London whose personnel improved and enlarged on the Polish work and eventually were able to decode Enigma ciphers throughout the war. Stubbington covers the organization at Bletchley, homing in on Hut 3 where signals relevant to the bomber offensive were decoded and forwarded to the Air Ministry.

This is where the plot thickens. For reasons not clear, the Ultra decrypts were forwarded to the Air, Navy and Army ministries, but not to individual commands. After complaints from the War Office, distribution was widened to include "overseas commands." This made imminent sense: a Theater Commander in North Africa, for example, had an immediate need for accurate, high-grade intelligence like Ultra in order to fight effectively. Routing intelligence through the War Office before it was sent on to the theater was wasteful and time consuming. However, because Coastal Command, Fighter Command and Bomber Command were not "overseas," they were not given Ultra intelligence. Instead, the Air Ministry received decrypts from Bletchley and then forwarded what it thought relevant to the home commands—without revealing the information's source. The absurdity of this decision—and Stubbington is unable to put a finger on precisely who it made it—was revealed in 1943 when the Americans joined up. At that point, 8AF, headquartered at Bushy Park outside London, was provided Ultra because it was designated an overseas command. In consequence, Bomber Command and 8AF (later combined with 15AF to form the US Strategic Air Forces, USSTAF), were located a few miles apart in the London suburbs but did not receive the same intelligence even though both worked for the Combined Chiefs of Staff and had similar directives for the conduct of their respective strategic bombing campaigns. By the end of the war, there were 25-30 analysts at 8AF headquarters working with Ultra intelligence—there were none at Bomber Command.

Stubbington then introduces the Ministry of Economic Warfare (MEW). Officially stood up in September 1939, there had been little study of economic intelligence before that. This is important. Certainly, intelligence agencies had existed for centuries, but air warfare introduced new demands that were previously unnecessary. Armies required tactical intelligence on the strength and disposition of the enemies confronting it; they also needed detailed information on its foes' weapons, defenses and capabilities. Although air warfare also required such information regarding an enemy air force, air leaders needed far more. Airpower allowed the routine attack of an enemy nation's heart—its centers of military, industrial and political strength. This was a unique ability never before possible in war. At the same time, however, this meant that if an aircraft could now strike at, say, an armaments industry, it would need specific intelligence on where that industry was located, what was its capacity, schedule, resource flow, labor force, output, etc. These were new details that had not previously been required in war simply because armies and navies had no way of striking at them directly. The MEW was to study the organization and operation of the German war economy and

attempt to answer these questions. The MEW, like the Air Ministry, received Ultra intelligence. It would then massage this information and pass on suggestions to Bomber Command without telling them where the intelligence came from. Stubbington notes that the relations between Bomber Command and both the Air Ministry and MEW were strained throughout the war. ACM Arthur Harris, the Commander-in-Chief of Bomber Command, had an especially low opinion of the bureaucrats in Whitehall who could theorize about air warfare and give free advice, but who had no responsibility for results. Stubbington implies this strained relationship was the reason enemies in the Air Ministry deliberately withheld vital intelligence.

Another key issue discussed is bomb damage assessment. It has been my belief that the key to air warfare is targeting; the key to targeting is intelligence; and the key to intelligence is the assessment of results. Bomber Command and USSTAF needed detailed intelligence on the German economy so as to determine appropriate targets. There were tens of thousands of factories, transportation nodes and power facilities in Germany and its occupied territories: which few hundred were the most important? Once the list of specific targets was amassed and the bomber commands began to strike them, it then became necessary to analyze whether or not the targets were actually destroyed, and then what effect that destruction was having on the German economy or morale as a whole. Stubbington discusses the office in Whitehall, RE8, which was responsible for bomb damage assessment, concluding that then, as now, such analysis is as much an art as a science. One may determine that a tank with its turret blown off is dead, but what effect would the destruction of an oil refinery or marshaling yard 200 miles behind enemy lines have on the enemy's offensive capabilities? Astoundingly, damage assessments were classified as Ultra intelligence and therefore not forwarded to Bomber Command.

The various ideas, theories and statistics regarding targeting for Bomber Command came to a head in early 1944 when two major target options presented themselves: oil and the enemy's transportation system. There is a good discussion here: the MEW and USSTAF were firm believers in the importance of oil; whereas, the Allied Expeditionary Air Force and the deputy supreme commander for OVERLORD, ACM Arthur Tedder, were in the transportation camp. Stubbington states that Ultra revealed Hitler and the German high command were more concerned about the breakdown of transportation, especially the rail lines, than they were about oil refineries. Although oil, and for that matter coal, were crucial resources, the delivery of those resources to factories was more fundamental. Because oil and coal traveled largely by rail and river/canal, the destruction of these transportation arteries would pay the greatest dividends. Additionally, the disruption of rail lines would also prevent reinforcement of Normandy once the invasion started. To General Dwight Eisenhower, that was key.

This is an important debate for intrinsic reasons—military planners must know the value of various target sets—but also because of the intelligence flow at the time. Stubbington states that much of the data supporting the preeminence of the transportation plan was derived from Ultra—but that data was not available before early 1944 because prior to then the railroad

industry had relied on land lines. As these became increasingly devastated by air attack, train personnel began using Enigma. Bletchley then discovered the precarious nature of the German transportation network. In October 1944 it reported that 30-50 percent of all factories in western Germany were at a standstill due to the sustained attacks on transportation. Because this intelligence was deliberately withheld from Bomber Command, however, Harris and his staff were unable to make informed targeting decisions. When presented with the transportation plan, he argued it was simply another "panacea target" dreamed up by someone in the Air Ministry, while at the same time being a difficult target to hit precisely, a concern in France where the resulting collateral damage could be enormous. Had Harris been an Ultra recipient, it might have changed his mind and induced him to support the transportation plan and see it as a war-ending target set. Stubbington concludes, correctly, that "it is impossible to understand why the USAAF should have had that high-grade intelligence support but that Bomber Command did not…. We will never know how much damage was done by the non-disclosure of that Ultra material to the Air Commander [Harris] who had most need for that information." (pps. 273, 350)

Another perspective on Bomber Command during the war is presented by Peter Gray, a retired air commodore with a PhD in military history. While on active duty he was the RAF's Director of Defence Studies, and then headed the Defence Leadership and Management Centre. These posts, combined with his academic credentials and operational experience, give him unique insights into the history of the bomber offensive. His effort, ***The Leadership, Direction and Legitimacy of the RAF Bomber Offensive from Inception to 1945*** (Birmingham War Studies Series. London: Continuum International Publishing, 2012), takes an unusual approach: Gray looks at the three factors in his title to view the air campaign through a different prism.

Leadership is a major academic field, and we are given an overview of the various schools of thought. Gray concludes there is no formula for good or bad leadership. Success is determined by success, as is failure by failure. In other words, beyond the typical list of desirable leadership characteristics: intelligence, physical and moral courage, loyalty, etc., people with radically different personalities, abilities and styles often succeed or fail for reasons not always obvious.

Gray's aim is to focus on leadership at the highest level—between Harris and the Chief of Air Staff, ACM Charles Portal, between Harris and the Air Ministry, and between Harris and his peers in the RAF, other services, and the Americans. In other words, leadership is here defined as Harris's vision of strategic bombing, the role of Bomber Command, and his relationships with other Senior Officers. As for direction, Gray defines that as the various policies, orders and directives that emanated from Bomber Command Headquarters to implement the vision. Gray's question: what if the vision of one commander, Harris in this case, is at odds with the vision of his superior, Portal, or others with whom he has to work? It is these conflicting visions and their means of implementation that form the core of the book. Before getting to this matter, Gray prepares the reader.

One chapter is devoted to the intellectual foundation of strategic bombing as it evolved in the RAF. Hugh Trenchard was a believer in the psychological effects of airpower, stating that these effects outnumbered the physical impact of bombing by twenty to one. Although Trenchard retired in 1929, the RAF was then led by his intellectual descendants. More to the point, the belief that the best defense was a good offense because it had a strong moral (psychological) effect took firm root in the RAF: the bomber was deemed the premier weapon in the air arsenal. Gray traces this evolution through the writings of air leaders, the lectures given at the RAF Staff College that educated the generation of airmen who would lead the service in World War II, and by looking at RAF doctrine.

There is also a fine chapter on the organizational roots of Bomber Command. The RAF was founded in the Great War as a response to a specific threat—German bombing attacks—and a strong desire among the British populace for revenge. When the war ended, it was not foregone that the RAF would continue to exist; indeed, the Navy and Army sought to strangle that baby in its cradle. Trenchard realized that to justify an independent status, the RAF would have to claim an independent mission—strategic bombing of an enemy nation. In the short term, however, the RAF throughout the 1920s relied on the mission of air policing the Empire. It was not much of a mission, but it kept the funds flowing and the RAF going.

Regarding legitimacy, Gray quotes senior officials in the Air Ministry and the CAS himself that indiscriminate bombing was inappropriate and illegal. All targets must be of a narrowly defined military nature—troop concentrations, barracks, armories and the like. The RAF operations manual (AP 1300) of February 1940 stated that the civilian populace was not a legitimate target. Area bombing was rejected: "all air bombardment aims to hit a particular target" and in every case "the bombing crew must be given an exact target and it must be impressed upon them that it is their task to hit and cause material damage to that target."

This was not just a moral stance. Gray notes that expediency was also a determining factor. President Franklin Roosevelt made a speech in September 1939 as war broke out over Poland that called upon all belligerents to refrain from indiscriminate bombing of civilian areas. The British were keen to remain in the good graces of the US, and so it seconded the president's plea. In addition, British civilian and military leaders realized that London—the center of the empire's political, economic and social infrastructures—was far more vulnerable to German attack than was Berlin at the mercy of RAF bombers. The result was a decision to "not take the gloves off" first: as long as the Luftwaffe refrained from bombing British cities, the RAF would desist as well.

The war would bend and twist these beliefs. When the Luftwaffe began bombing British cities the people reacted—as they had in the Great War—by demanding retaliation. Winston Churchill was of a similar mind and Portal agreed with him. It is important to recall, given later condemnations, that Harris did not take over Bomber Command until *after* his civilian and

military superiors had already determined that area bombing of German cities would be the focus of the strategic bombing offensive.

Harris's job was to carry out this city-busting strategy. This he did with remarkable determination bordering on stubbornness. What of legitimacy? This is an old debate, and Gray covers it without drawing a conclusion.

The core of the book centers on how Harris reacted when confronted by dissent from his superiors and peers. Precision bombing (granted, a relative term) was increasingly possible as pathfinders and electronic bombing aids like *Gee*, *Oboe* and radar became widely used. Although Churchill and the RAF made an effort to convince the Americans to adopt a similar strategy, they would have none of it. Harris strenuously rejected alternative targeting strategies as "panacea mongering." Gray concludes that either Harris did not listen to alternatives, did not understand them, or simply did not care. He clung adamantly to an area bombing strategy, and by the end, it is apparent that Harris was stubborn to the point of foolishness, and that Portal was a veritable saint in putting up with his cantankerous subordinate. Gray concludes this was a sign of inspired and patient leadership on Portal's part.

As for getting along with peers, Harris had trouble—as did many others— with ACM Trafford Leigh-Mallory. The latter was a hero during the Battle of Britain and in early 1944 was named Commander-In-Chief of the Allied Expeditionary Air Force for the invasion. It soon developed that this was not an auspicious choice. Few RAF officers were close to Leigh-Mallory, who was seen as irascible and contrary. Worse from Harris's point of view, it was suggested that Leigh-Mallory would actually have the power his title indicated—he would be in charge of *all* airpower for OVERLORD. For Harris this was out of the question: he would not release control of his bombers to a tactical airman. His American counterpart, General Carl Spaatz, felt similarly. A command crisis—and the resulting political furor—were averted by Eisenhower naming Tedder as his deputy: he was well respected by both Harris and Spaatz. In consequence, all matters dealing with strategic targeting would go through Tedder—Leigh-Mallory was effectively cut off at the knees. It is debatable whether or not this melancholy situation demonstrated good leadership by any of the participants.

An important subject concerns effects. Yes, Harris had a clear vision of what he wanted his command to achieve and was resolute in his direction towards that vision. As for legitimacy, he was not alone in arguing that civilian workers were part of the German war-making machine as were soldiers in the field and therefore legitimate *military* targets. He also pointed out that the British starvation blockade of the Great War had killed nearly 800,000 German civilians and no one seemed eager to ban the weapon of blockade. This is fine as far as it goes—and such debates continue seventy years later—but one must then ask how did Harris know if he was achieving his vision despite its cost—was the area bombing campaign effective? Was it decisive in destroying the Nazi will or capability to carry on the war?

These are crucial questions, but it is not clear how Harris answered them. Rather, he believed the destruction of 40 to 50 percent of the principal German cities would have a devastating effect on the economy. What lead him to believe this? The "blue books" are famous for revealing how Harris measured results: these were large books containing detailed photographs of major German cities that were overlaid with acetate sheets. Following each raid, staffers would dutifully color them in with a blue pencil to show how many city blocks had been converted into rubble the night before. Was that the extent of Harris's analysis? Is destruction synonymous with effectiveness? It would seem the blunt instrument of Bomber Command was supported by an equally blunt measuring stick.

The final book is also important: Horst Boog, Gerhard Krebs and Detlef Vogel, ***Germany and the Second World War: Vol. VII: The Strategic Air War in Europe and the War in the West and East Asia 1943-1944/5*** (Oxford: Clarendon Press, 2006). Although this volume in the official history series was published seven years ago, its daunting price—around £200—ensured it did not receive a noisy reception. That is unfortunate because Horst Boog, the author of the extensive section on the strategic bombing campaign, gives great insight into the story from the German point of view.

The major theme of the book is to describe the decline and fall of the Third Reich: "There is evidence of the inescapable wearing-down of the German ability to fight in the air. In both quantity and quality the Luftwaffe had long lagged behind its enemies, who from the spring of 1944 onward enjoyed, at least in daylight hours, mastery of the skies over Germany." (p 5) The ensuing account is marked by a pervasive sense of doom giving way to despair as it became increasingly obvious to German military leaders that the war was lost, but they would be compelled to fight to the end anyway. Boog notes that Hitler and his senior leadership had expected a short war and not planned for an extended war of attrition on multiple fronts. As a result, the economy was not pressed into a maximum effort. When Albert Speer was appointed as Minister of Armaments this began to change, but these efforts were too little and too late. Allied production far outstripped that of Nazi Germany, despite the fact that it occupied much of Europe and could draw on the resources, factories and labor of its conquered territories. RAF's Bomber Command, for example, nearly quintupled in size from 1942 on, and its tonnage delivered grew as well. Moreover, the German hierarchy was "amazed" at how precisely Bomber Command could sometimes be in bad weather when using Oboe or other navigation aids.

The damage done to the German economy grew gradually but inexorably beginning in the spring of 1943. By then, "Germany's industrial base was being seriously threatened from the air." (p 159) From this point on the Luftwaffe began shifting its emphasis from offensive bombers to defensive fighters. General Adolph Galland, Commander of the fighter defenses, remarked that Germany was "a house without a roof," and his pilots were having difficulty in stopping Allied bombers. There would remain great victories for the Luftwaffe—the missions over Schweinfurt in August and October 1943 would almost break the 8AF, and it would forego

deep penetration strikes into Germany for several months thereafter. Still, Goering resisted Galland's pleas to centralize the interceptor force. Galland wanted to pull his aircraft back to German airspace and thus mass his forces to hit the bombers, but Goering insisted that the defenses remain forward: the German people needed to see the fighters overhead, and not simply unimpeded streams of enemy bombers.

The discussion of German fighter defenses, both in the air and on the ground, is one of the book's strengths. Boog gives statistics on the numbers of antiaircraft artillery (AAA) built and deployed, as well as single-engine fighters available. Regarding AAA, by November 1943 fully one-third of Luftwaffe personnel—1 million men—were in the flak arm, 800,000 more were employed building AAA weapons, and one-third of all gun barrels produced were for AAA. During the war, the AAA arm grew five-fold. The aluminum used to produce AAA munitions was enough to build 40,000 fighter planes. Yet, statistics showed that the gun batteries were not efficient in shooting down attacking bombers. By the end of 1943 it took 4,000 rounds of AAA to bring down a single bomber. At night, the accuracy was even worse due to the use of chaff—aluminum strips dropped by the bombers to blank German radars. And yet, Hitler insisted on the continued production of AAA weapons in ever increasing numbers. He believed the guns had a great psychological effect on the German populace: they needed to see the guns firing day and night against Allied bombers, even if they were not hitting much. (Actually, says Boog, far more bombers were damaged by AAA than interceptors, but once injured by flak, the bombers were usually downed by the fighters moving in for an easy kill.)

The story for the fighter defenses was also grim, and here Allied bombing played an increasingly symbiotic role in depleting German defenses. In August 1943 there were approximately 600 day fighters, but the bombing of aircraft and engine factories was already cutting production by 25 percent. At the same time, the bombing of the German oil refineries and disruption of transportation facilities was having a marked effect as new Luftwaffe pilots were denied fuel for training—by spring 1943 training fuel had been cut by 60 percent. As pilots began flying operationally with barely sixty hours under their belts—and almost none at night or in bad weather—they became easy prey for the more experienced Allied fighters.

Boog scores the German high command for poor planning: the Luftwaffe was not producing sufficient pilots early in the war because they were not thought necessary. When the problem was finally realized and pilot output was increased, it was too late. Fuel was insufficient and instructor pilots had already been sent to operational commands where they were desperately needed. As for aircraft, even though production increased dramatically in 1944, the results were muddled. Aircraft were destroyed at the factory before they could be shipped; they were destroyed en route to operational units; or they were cannon fodder in the air when confronted by more experienced pilots flying better aircraft. The overwhelming superiority of the Allies became evident in February 1944 when during "Big Week" the Luftwaffe lost hundreds of planes and pilots, while also seeing the airframe and engine factories—along with the oil refineries—severely damaged. By D-Day there were nearly 30,000 Allied aircraft ringing

the Reich, two-thirds of which were in the west and south. To combat them, the Luftwaffe had 600 aircraft to contest the invasion force at Normandy, and only 57 percent of those were serviceable. On D-Day itself, the Allies flew over 12,000 sorties, but the defenders were able to send but a dozen aircraft to the beaches—ten of which dropped their bombs prematurely. The Luftwaffe was outnumbered from then on by more than 20 to 1. In the words of the official history: "There was … no Luftwaffe combat presence worth the mention in Normandy." (p 325) In startling examples, Boog notes that of 57 fighters sent from Wiesbaden to Normandy after D-Day, only 3 arrived; of 22 FW-190s sent from Cologne, only 2 made it to their destination.

There are several other factors contained here: rivalry between fighter and bomber pilots was every bit as strong as it was in the RAF and USAAF; Germany lagged behind Britain in electronic warfare, partly because ham/amateur radios were forbidden once the Nazis took power for fear the population would be polluted by ideas from elsewhere. One of the fallouts from this backwardness was the proximity fuze. One postwar US study showed that if the fuze had been available, the USAAF would have suffered 3.4 times more aircraft losses. We are also reminded that Hitler did nothing to quell the in-fighting between his subordinates: if they were busy fighting each other they could not unite against him. Finally, the canard that "if only Hitler had not interfered with Me-262 production, the jet fighter would have been available a year earlier" was rubbish. There were major, complex mechanical problems with the jet and its engines that were difficult to overcome. Regardless of what Hitler decreed, the fighter could not have been available much earlier than it was.

While all was collapsing around them, Nazi leadership—and especially Hitler—reacted in a chaotic and unsystematic manner, moving forces and personnel here and there, changing targets, revising priorities and generally making things worse. Boog compares this to the analytical approach of the Allies and concludes that "we find a great many ad hoc decisions being taken, and matters of opinion on even the tiniest detail being discussed when they should have been dealt with in subordinate bodies and certainly not by the Commander-In-Chief [Goering] of one of the armed services." (p 175) Micromanagement, lack of trust, and disloyalty were rampant throughout the Luftwaffe and was a major factor in its eventual defeat.

One other issue of note: Boog and his colleagues address the matter of morality in Luftwaffe bombing operations. Daylight raids were too costly, so the Luftwaffe retreated to the relative safety of night. The crews were not trained for such a mission, and navigation was poor. Worse, the equipment they employed was not geared for night operations and bombsights were inadequate even if aircrew could find a major target, such as London. The resulting imprecision—area bombing—was legally and morally justified because the Luftwaffe *wanted* to do better, but limitations in aircrew and equipment prohibited them from doing so. It is an argument that the Allies would use as well.

In total, these three excellent books shed new and important light on a vitally important subject. Intelligence, targeting, leadership and "the view from the other side of the hill" are

worthy topics and are covered by extremely capable historians and practitioners. There is much here for Air Officers to ponder and consider. The debates on these subjects are still as vital today as they were seventy years ago. A final word from the German history is compelling: "Though in modern warfare air power may not be the sole deciding factor, it is a sine qua non for success and its absence leads to failure." (p 333)