Operation Vengeance

Still Offering Lessons after 75 Years

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The spring of 2018 marked the 75th anniversary of the execution of the first high-value individual (HVI)/target of opportunity (TOO) operation by airpower in history. On 18 April 1943, 18 Army Air Corps P-38 Lightning fighters took off from an airfield on Henderson Island in the south Pacific Ocean, slated to target Adm Isoroku Yamamoto, the commander of the Japanese Imperial Navy. Based on the successful intercept of the admiral's itinerary via the codebreakers working at Station HYPO (also known as Fleet Radio Unit Pacific) in Hawaii, the US knew of Yamamoto's plans to visit the Japanese base at Bougainville Island in Papua, New Guinea. The US fighters, maintaining radio silence and flying low over the ocean to evade Japanese radar, successfully ambushed the two Japanese bombers and six escort fighters, shooting down both bombers, one of which held the admiral. With the loss of only one plane, the US managed to eliminate one of the top military commanders in the Japanese military and score a huge propaganda victory.

Dubbed Operation Vengeance, this World War II operation set the precedence for modern HVI/TOO operations. Some of the core questions for targeting an HVI, especially via air assets, facing US military personnel in 1943 still apply in 2018 and will most likely apply to planners in the future. At present, most of these HVI/TOO operations occur in environments where US military dominance, particularly air superiority, is not at risk. Yet, as the American military attempts to evolve its warfighting capabilities beyond the counterterrorism (CT) wars of the 2000s and move toward engaging peer/near-peer states, the core questions first faced in 1943 require answers for any chance of success with the HVI/TOO operation. Those questions are:

1. Can America successfully target an HVI where air superiority is not verified?
2. Can American forces obtain, utilize, and protect the vital intelligence necessary to achieve a desired effect on an HVI?
3. Can American forces plan and execute such an HVI operation within a constrained time frame?
4. Will America have a full understanding/assessment of the impact of targeting an HVI? Operation Vengeance proved that airpower could prosecute an HVI

target, but it also established lessons and criteria that current and future air planners and operators need to answer.

Can America successfully target an HVI where air superiority is not verified?

Since the start of the CT wars, air superiority, whereby the US has achieved "that degree of control of the air by one force that permits the conduct of its operations at a given time and place without prohibitive interference from air and missile threats," is all but a planning fact.[1] In truth, most operations against HVIs have air supremacy, which is "that degree of control of the air wherein the opposing force is incapable of effective interference within the operational area using air and missile threats."[2] In Afghanistan and Iraq, the area of responsibility (AOR) of most of the recent HVI operations, air supremacy is a constant, as all types of air coverage, from remotely piloted aircraft to fixed-wing aircraft, operate with freedom unencumbered by adversary threat capabilities. Recent operations in Syria, where there are more air defense capabilities from the Syrian regime and Russian air assets, fall under the guise of air superiority. While some of those assets, particularly the newer Russian equipment such as the Sukhoi Su-35 and the S-400 Triumf launch vehicle (SA-21 Growler), could pose a significant threat to air operations, the deconfliction between the respective forces enables the US to exercise air superiority over its desired AOR.[3]

For the US in April 1943, planners and fliers could not assume air superiority. While US forces had successfully driven the Japanese out of Guadalcanal in February 1943 and established Henderson Air Field, the Japanese still possessed the capability to threaten US air operations in that region of the Pacific. As the planners at Henderson Field started work in their headquarters building, known as "the Opium Den," they made their plans to target Yamamoto flying in a G4M "Betty" bomber.[4] The Betty possessed some self-defense capabilities—with a 1 x 20 mm cannon and 4 x 7.7 mm machine guns—but that was not enough to ward off fighters on its own. The more concerning fact would be the expected presence of fighter escorts. The Japanese Mitsubishi A6M Zero, while not the dominant fighter it was at the start of the war, still presented a significant air threat, with its legendary maneuverability and 2 x 20 mm cannon and 2 x 7.7 mm machine guns.[5] To attack the Japanese, the US went with the P-38, a twin-engine fighter with long-range and heavy firepower (1 x 20 mm cannon and 4 x 0.50 machine guns). The P-38 could successfully compete with its Japanese Zero counterpart in a dogfight, which other US fighters in the Pacific at that time could not.[6]

Yet, air superiority is more than just weapons. The US faced the daunting challenge of flying over Japanese-held airspace en route to Bougainville.[7] The Japanese maintained various radar and listening posts throughout the region, which could result in detection and a threat to the mission. At that time, US fighters did not have airborne radar, and thus, had to rely on navigation via charts and flight discipline.[8] If the P-38s ran into any trouble, they could not communicate for assistance, and even if they could, they couldn't expect additional support to arrive in a timely

fashion. Given that most of the flying was over ocean, and the fighters had to fly barely 50 feet above the water to avoid Japanese detection, the US also ran the risk of running into a stray Japanese ship, which, armed with various antiaircraft weapons, could disrupt the planning and timing of the air operation.[9]

If the US entered into a conflict with a peer/near-peer today, the American forces would bring more capabilities to achieve air superiority. Advances in navigation, weaponry, communications, and overall battlespace awareness make the mission planning in the Opium Den seem prehistoric. Air-to-air refueling offers considerably more flexibility with the use of fighter aircraft, enabling more time for combat operations. The use of space-based assets and the evolution of cyber offer ways for American forces to track adversaries, as well as a more accurate and timely picture of target and threat movements for such HVI operations. This can also enable a faster and more accurate battle damage assessment (BDA) against the target.

However, the increase in technological advancements comes with its own set of vulnerabilities. Even with modern capabilities, the fog and friction of warfare can leave modern air planners and operators as uncertain about adversary threat activity and capabilities as in 1943. Additionally, American dependency on its space-based capabilities, while offering a decisive edge in air operations in Iraq and Afghanistan, may prove a critical vulnerability in an engagement with a peer/near-peer. Nations such as Russia and China continue to evolve their counterspace capabilities, and if the US found itself in an engagement with such a nation, the degradation—if not outright loss—of its space-based capabilities could seriously limit American air operations.[10]

Additionally, while the aviators in 1943 might have longed for radar, they likely would not have wanted to fight in an electronic warfare environment with jamming and electronic attacks disrupting radar and communications. Doctrinally, the US attempts to train to fight in a degraded environment but did not face many of those threats in the CT wars. With the shift toward countering "peer/near-peer" threats, the DOD stated a goal to counter what it sees as a significant vulnerability in future combat.[11] The potential for future engagements with technologically more advanced adversaries will likely grow in the future, so US aviators need the ability to operate in less-than-optimum conditions, especially when it comes to HVI/TOO operations.

Currently, few HVI operations occur in areas where air supremacy is not a given, but if the HVI in question was rated critically that American aviators needed to deal with significant air-to-air and surface-to-air threats, could American forces manage? This is not to say that American forces do not train to engage and defeat peer/near-peer adversaries in aerial engagements, but the US has few combat aerial engagements since 1991 to leverage for experience.[12] In 1943, the pilots selected for Operation Vengeance all possessed air-to-air combat experience against the Japanese.[13] While the US can consider itself fortunate not to have many significant air-to-air engagements in recent wars, the lack of combat experience is not a benefit. Planners and operators need to be mindful of the threats and challenges as the US shifts from the CT wars to potential engagements against peers/near-peer adversaries.

Can American forces obtain, utilize, and protect the vital intelligence necessary to achieve a desired effect on an HVI?

When dealing with the threat capabilities of an adversary to engage an HVI, intelligence is a critical component. For Operation Vengeance, the genesis of the operation sprang from an intelligence coup. For the duration of the war in the Pacific, the US possessed a significant advantage over the Japanese in the realm of signals intelligence. In particular, US cryptologists broke the Japanese military naval code—JN-25—in 1940.[14] It was through the efforts of these analysts, living in the basement of Commander in Chief Pacific Fleet Headquarters at Naval Station Pearl Harbor, Hawaii—Station Hypo—that the US leveraged its intelligence advantage to swing the critical Battle of Midway in June 1942.[15] Ten months later, that same office intercepted a message from a member of Yamamoto's staff, indicating his plans to visit the island of Bougainville on 18 April.[16] The intercepted itinerary provided an outline of the timing of his visit from his headquarters in Rabaul to Bougainville, as well as the mode of transportation, recommended uniform wear, and instructions for commanders on Bougainville.[17] Station HYPO worked feverishly to complete the intercept and translation of the message and finished on the night of 14 April 1943, leaving only a few days to authorize, plan, and execute such a mission.[18]

The planners targeting Yamamoto took advantage of the US military's decent understanding of the patterns and tendencies of the Japanese admiral. During the interwar years, Yamamoto spent multiple assignments in the US, attended Harvard from 1919–21, and returned in 1925 as a naval attaché in Washington, DC. While it gave Yamamoto the chance to learn more about a potential adversary, the US also came to learn about Yamamoto. People who worked with him noted that Yamamoto was a punctual person who maintained timelines and schedules, thus earning the nickname of the "On-Time Admiral."[19] Along with punctuality, Yamamoto's penchant for taking risks—from his love of gambling at card games or in operational planning, as seen at Pearl Harbor and Midway—further aided the planners because Yamamoto seemed unlikely to abort his risky flight to Bougainville. Thus, when the planners saw the time frame of when it would be best to try to intercept him (en route to the island), they felt confident that Yamamoto would make every effort to meet that schedule, regardless of the dangers.

In modern HVI operations, the study and long-term collection of Yamamoto's tendencies qualify as establishing patterns-of-life (PoL). PoLs call for an analysis of "the specific set of behaviors and movements associated with a particular entity over a given period of time."[20] Many of the HVIs in the CT wars drove US forces to establish PoLs in a condensed timeline. Obtaining information about Yamamoto's personal tendencies, such as his punctuality and his risk-taking nature, came through years of interaction and collection of biographic data. Yamamoto did not start World War II as a confirmed target for action; the knowledge and understanding gained in the years before the war served as a form of PoL, vital in the target development of HVIs. In Yamamoto's case, when the TOO arose after the intercept of his itinerary, the long-established understanding about his patterns saved the US military critical time in planning such a risky venture.

Few could argue about the changes in intelligence collection and analysis methods since Operation Vengeance. The basic requirements for intelligence have not changed, but now the availability and accessibility of information offer both advantages and disadvantages. What would the planners in 1943 have given to have access to the resources of 2018? Imagery of the airfields for the Betty flights, intercepts of communications devices, geolocation of planes based on transmission emanating from the plane all could have made the operation go smoother. Yet, what if the Japanese also had access to the same resources? What if the Japanese knew about the flights of P-38s leaving Henderson Field in near- real-time? While this was a possibility even in 1943, access to modern technology could see a real-time change to the flight plans of the two bombers, even up to their final approach to Bougainville.[21]

Leveraging and securing an intelligence advantage is a significant challenge in modern warfare. In 1943, the Japanese still did not accept that the US had broken their naval codes.[22] However, the Japanese periodically altered their ciphers and issued new codebooks two weeks before Operation Vengeance. However, due to logistical challenges, the codebooks did not make it to Rabaul and Bougainville. Had the Japanese managed to get the new ciphers out, it is unlikely the US could have deciphered the new codes in time for the 18 April mission.

Additionally, when word got out about how the US successfully engaged and killed Yamamoto, some of the reporting of the story offered potentially damaging insight into just how the US managed to execute the intercept.[23] As the men in the Opium Den started to plan the mission to kill Yamamoto, officials briefed the military personnel at Henderson Field that Australian coast watchers intercepted the itinerary that proved the basis for the mission.[24] Even as the Navy and US government cracked down on some journalists and some of the fliers involved for potential compromise of national secrets, the Japanese did not delve too deeply into the reporting.[25] The concern about the possible leaking of "special intelligence" dogged the US military since the victory at Midway, when within days of the decisive victory, driven as much by the success at Station HYPO, several US newspapers carried headlines that implied the Navy had advance information on the Japanese attack at sea.[26] In particular, the *Chicago Tribune* came under legal proceedings from the Navy, but eventually, the USN dropped the charges with the US intelligence advantage still maintained, however precariously.[27] The fear of another leak of US capabilities after Operation Vengeance terrified the Navy, with allies infuriated about the raid. So instead of receiving a hero's reception, the men who led the mission faced the wrath of an especially riled-up Adm William Halsey Jr.[28]

In modern times, there is a fine line between revealing too little or too much. Many point to Osama bin Laden, noting that after the 1998 cruise missile strikes that missed him by a couple of hours, he learned that the US could track his movements via personal communication devices.[29] Thus, he came to rely on human couriers, complicating targeting efforts against him.[30] HVIs in the CT wars attempted to limit their signatures, limiting mobile communication usages and reducing their public interactions with groups such as al-Qaeda resorting to human couriers for communication, a time- and resource-consuming effort to track by American forces.[31] Adversaries at the peer/near-peer level have greater resources for counter-

ing US intelligence efforts. Additionally, the multiple disclosures of classified capabilities in the past decade further complicate all types of operations, including HVI planning and execution.

However, the use of equipment on-board air assets is one area where modern forces far exceed their predecessors even if US forces found access to adversary operating environments limited/degraded. The P-38s used for this mission did not come equipped with cameras, even though there were models of that airframe used for such purposes. Nowadays, air assets, such as the F-16s that engaged Abu Musab al-Zarqawi in 2006, come equipped with a vast array of sensors that can aid in target engagement and initial postmission assessments. A major controversy about the Yamamoto operation centered on who exactly shot down the admiral's bomber. Initially, the US could only go on the word of the pilots engaged in the operation with no corroborating information. While the Japanese discovered the admiral's body a day after the engagement, they did not make a formal announcement until a month after his death. A faster processing capability of BDA in modern times, even in a degraded environment, is one advantage modern planners and operators can use in the execution of HVI operations.

Can American forces plan and execute such an HVI operation within a constrained timeframe?

One of the more remarkable aspects of Operation Vengeance centers on the timeline of the mission. By the time Station HYPO decrypted and translated Yamamoto's itinerary, and the Pacific Fleet chain of command determined that they could and would attempt to intercept Yamamoto, the aviators at Henderson Field had less than 48 hours to plan and execute this unprecedented mission.[32] While the Navy held overall command of Guadalcanal, the Opium Den at Henderson Field held representatives from the Army, Army Air Corps, and the Marine Corps. At first, the Navy planners sought a navy solution to this mission, debating whether to use a destroyer or frigate to try to intercept the admiral. That plan did not develop further, as it became more likely that the planners would have to make the intercept by plane. However, the expected range of the mission eliminated any available Navy air assets, thus, leaving the planners to turn to the P-38s. By the time the leadership at Henderson Field turned to the air intercept solution, the planners had less than 24 hours to develop and execute this short-notice mission.[33]

Once the mission planning began, despite the secrecy of the source material, the base gradually learned about the mission and the intended target. In the frantic hours to get the mission ready for execution, the Opium Den became crowded with an array of aviators and other military personnel seeking to be a part of the mission that would get the man who led the attack on Pearl Harbor.[34] Given the distance, timing, and threat concerns, the aviators faced a difficult task. To avoid detection, the fliers could not use their radios. Additionally, they needed to fly approximately 30 feet above the ocean to stay below known Japanese radar coverage.[35] Once at the target area, with only enough projected fuel for 10 minutes of combat time, the fliers could not spend much time waiting if the target was late.[36] Much had to go right

and depended on matters outside of the planner's control. In this case, with the loss of only one plane, the Opium Den succeeded.

When it comes to mission planning and the execution of HVI operations, a lot has changed since 1943. The combined efforts of 1943 are codified today as a joint operation. The US armed forces rarely deploy into combat or any significant military operations as a single service, as some sort of joint command or joint task force gets set up to cover the planning and operational requirements of the mission. For air operations, the individual squadrons would still do mission planning for their specific assets, but some of the decisions that the planners at the Opium Den made would have been decided at a higher level. For example, where the planners at the Opium Den needed to decide what type of asset could support the mission (air or naval) and then when they decide on an air asset, they had to determine the optimum air asset. Today, those decisions happen at a higher echelon with the primary air apportionment occurring at the air operations center (AOC), where representatives from all the services can make inputs on planning and executing air operations in support of operations. Additionally, the AOC would resolve many of the concerns that the Opium Den planners had to deal with, such as the current threat picture. In some cases, it might have made the job of planning and executing the mission simpler for the Opium Den.

However, the additional changes can also bring their share of problems. There are significant vulnerabilities within the current system. The effectiveness of relaying information up and down the chain of command is only as strong as the interconnectivity between echelons. Systems issues, whether from latency or possible outside disruption, can severely hamper planning timelines, and for missions such as this, timing is critical. Additionally, the current military environment is far more complex and integrated than in 1943. The Opium Den planners only had to worry about their planes getting to the target, engaging, and getting back. Now, they would have to account for deconflicting with other assets, airspace restrictions, space-based capabilities, aerial refueling, integrating with other intelligence, surveillance, and reconnaissance assets to relay information/updates, and all of this while dealing with a dangerous and capable air adversary.

Along with deconflicting with other tactical and operational assets, air planners have to contend with the blessing and curse of a more interconnected command structure. In 1943, when the Pacific Fleet relayed its request to higher leadership in Washington for permission to execute the mission, and when the approval came back down the chain, the higher command left it to the planners to execute the mission. Part of that was the fact that communication methods for situational awareness lacked the capabilities that currently exist. Now, from the Situation Room in the White House to the respective combatant command headquarters, admirals and generals can observe—and at times direct—tactical missions in near real-time. Occasionally, it can help, as tactical planners can receive confirmation about command intent and approval in a rapid fashion. It can also lead to delays and claims of micromanagement, as one individual further up the chain can derail the success of the mission.[37]

Additionally, with more people in the know of a given operation, the greater the chance for some sort of compromise, which proved a significant concern in the

post-Operation Vengeance euphoria. In the success of the bin Laden mission, many details leaked out shortly after the raid, to include the newer design of a helicopter that flew the men in the Abbottabad compound and the compromise of a human intelligence asset that aided in the location of bin Laden.[38] This highlights the dangers of too many people in the know of a given operation; what worked once may not be able to work again, as adversaries become familiar with newer tactics, techniques, and procedures.

While the technology and doctrine of planning and executing air operations evolved in the 75 years since Operation Vengeance, ingenuity and determination remain important for current time-sensitive mission planning. Given a task and pressing requirement, air planners and operators will work to come up with a solution. Could higher command deal with the lack of situational awareness they faced in 1943, especially if going after a target like Yamamoto? Not easily, but if the situation required it, they could adapt. The risks might be greater, but if command gives the approval and accepts those risks and the planners receive their guidance, they will do what they can to execute the mission.

Will America have a full understanding/assessment of the impact of targeting an HVI?

While there is a significant increase in the resources required and used for modern HVI operations, especially when leveraging airpower to support and execute the missions, there is still a classic question associated with any HVI: Why are we going after the target and after a successful engagement of that target, and what is the impact of that move? Killing or incapacitating key leaders can sometimes throw adversary forces into chaos. Many targeting strategies look to hit at the center of gravity for an adversary, and for a number of foes, it is leadership. In the case of Yamamoto, most viewed him as a key leader in the Japanese fight.[39] His innovative and aggressive style of command directed the Japanese Navy to its stunning defeat of the US Navy at Pearl Harbor and in subsequent engagements until Midway. Additionally, Yamamoto became the face of the Japanese military as far as most Americans were concerned. The alleged quote of Yamamoto "marching down the streets of Washington to dictate peace terms," combined with his role in the surprise attack at Pearl Harbor, made him the ultimate villain for many Americans.[40] While the US did not have a deliberate strategy or process for going after HVIs in World War II, the US military improvised quickly. There is some debate as to who ultimately authorized the strike, but it was a precursor to the processes of today, when certain levels of authority are given to decision makers about engaging a target, especially an HVI.[41]

However, the death of Yamamoto did not result in a significant collapse or change in the decline of the Japanese military. After Midway, the Japanese Navy never regained the offensive initiative, and while it still managed to score some tactical victories in the battle of Guadalcanal, it could not overcome the losses in men and materials. Yamamoto still inspired confidence from his subordinates and fear from his American counterparts.[42] Yet, it is unlikely he could have completely

reversed the American offensive momentum. The Japanese Navy still fought on for two years after the loss of its commander. Perhaps if Yamamoto had been at the Battle of the Philippine Sea, nicknamed the "Great Marianas Turkey Shoot" or the Battle of the Leyte Gulf, some outcomes might have changed, but if he had lived, Yamamoto, the consummate card player, would come to see that he held a losing hand. Additionally, while it was a great morale boost for Americans to see the death of the man behind Pearl Harbor, it did not significantly alter American military actions in the Pacific.

Much like Yamamoto, one can question the impact of successfully targeting HVIs via airpower. In the CT wars, Air Force fighter assets (F-16s) delivered the coup de grâce on al-Zarqawi, the leader of al-Qaeda in Iraq (AQI).[43] It received international headlines as the US eliminated the most visible leader of AQI. Yet, much like Yamamoto, al-Zarqawi's death did not result in the immediate decline in the potency of AQI. Even when the US changed strategy in 2007, adding more US troops and increasing cooperation with Iraqi Shia and those tired of AQI, AQI did not disappear. Eventually, AQI evolved into the Islamic State in Syria and Iraq, which arguably became more powerful at its peak. It was important to try to eliminate the threat of al-Zarqawi, but the death or incapacitation of an HVI does not automatically mean that it will automatically lead to rapid glory.

Depending on the adversary, the targeting of HVIs via airpower can potentially achieve the desired effects. Against an adversary with a centralized command structure, the elimination of the top echelon or leaders can potentially lead to significant degradation of an adversary's fighting capacity, if not outright collapse. Concurrently, the elimination of an HVI could eliminate the main target, but sometimes, planners and operators may not be aware of the second- or third-order effects of such an action.

Conclusion

The targeting and prosecution of key individuals in warfare is an old concept, going back to the beginnings of armed conflict. Given that much of the fighting was within visible range, the targeting of key individuals happened right on the field of battle. However, as warfare evolved, key leaders found themselves moving farther away from the front lines. By World War II, advancements in radio and radar enabled key leaders to direct operations hundreds of miles away from the actual fighting. At Midway, Yamamoto's flagship never got closer than 300 miles of the main engagements, and a major reason for his travel to Bougainville was to engage directly with his fighting forces. Given those conditions, airpower proved the only way for the US to engage an HVI like Yamamoto.

Much of what transpired with Operation Vengeance reveals itself in modern HVI operations. The basic requirements of target development, via research, PoLs, focused and successful intelligence collection, and analysis, which all enabled the US military to make its plans against Yamamoto, still remain requirements for modern HVI operations. Planners and operators should account for threats to the mission, as well as determine the impacts of said operations. Additionally, given the perishable nature of most intelligence associated with HVIs, planners and operators

should be ready to plan and execute on extremely short timelines. Determining the appropriate level for decision making to engage an HVI and acting decisively after receiving that information is also critical, as the decisiveness that Adm Chester W. Nimitz and his subordinates took in executing that mission remains a requirement for HVI operations today. ✪

Notes

1. DOD, *DOD Dictionary of Military and Associated Terms*, February 2018, 15, http://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/dictionary.pdf?ver=2018-02-21-153603-643.
2. Ibid., 16.
3. Guy Plopsky, "Russia's Air Defenses in Syria: More Politics than Punch," BESA Center Perspectives Paper No. 618, The Begin–Sadat Center for Strategic Studies, 18 October 2017, https://besacenter.org/wp-content/uploads/2017/10/618-Russian-Air-Defenses-in-Syria-Plopsky-final-2.pdf.
4. Donald A. Davis, *Lightning Strike: The Secret Mission to Kill Admiral Yamamoto and Avenge Pearl Harbor* (New York: St. Martin's Press, 2005), 237.
5. Maj Adonis C. Arvanitakis, *Killing a Peacock: A Case Study of the Targeted Killing of Admiral Isoroku Yamamoto*, School of Advanced Military Studies Class 2015-01, (Fort Leavenworth, KS: US Army Command and General Staff College, 2015), 22.
6. Ibid.
7. Davis, *Lightning Strike*, 234.
8. Ibid., 241.
9. Ibid., 243.
10. Aaron Bateman, "In Outer Space, the US is Vulnerable to China and Russia," *The Hill*, 20 July 2017, http://thehill.com/blogs/pundits-blog/defense/342992-in-outer-space-the-us-is-vulnerable-to-china-and-russia.
11. Jim Garamone, "DOD Must Train for 'Degraded' Environments," *DOD*, 9 February 2011, http://archive.defense.gov/news/newsarticle.aspx?id=62750.
12. John Stillion, *Trends in Air-to-Air Combat: Implications for Future Air Superiority*, Center for Strategic and Budgetary Assessments, 14 April 2015, 23, http://csbaonline.org/research/publications/trends-in-air-to-air-combat-implications-for-future-air-superiority.
13. Davis, *Lightning Strike*, 244.
14. John T. Wible, *The Yamamoto Mission: Sunday, April 18, 1943*, (Fredericksburg, TX: The Admiral Nimitz Foundation, 1988), 7.
15. Stephen Budiansky, *Battle of Wits: The Complete Story of Codebreaking in World War II* (New York: The Free Press, 2000), 16.
16. Davis, *Lightning Strike*, 222. The Japanese transmitted the message about Yamamoto's itinerary on 13 April 1943, eschewing recommendations to hand-carry the itinerary to Bougainville.
17. Ibid., 222.
18. Ibid., 227. Upon completion of the intercept, the officer leading the decryption/translation of the message exclaimed "We've hit the jackpot. This is our chance to get Yamamoto."
19. Ibid., 8.
20. The State and Future of GEOINT of 2017," United States Geospatial Intelligence Foundation, 2017, 24, http://usgif.org/system/uploads/4897/original/2017_SoG.pdf.
21. Davis, *Lightning Strike*, 242.
22. Budiansky, *Battle of Wits*, 319.
23. Joseph Conner, "Have You Heard?" *World War II* 31, no. 5, January–February 2017, 36.
24. Arvanitakis, *Killing a Peacock*, 11. The idea to attribute the intercept to Australian coast-watchers worked not only to reduce compromise from American forces, it also fit into Japanese assessments, as they held the capabilities of these coast watchers in high regard, and thus, the US had some plausibility in the source of the intercept without compromising they had cracked the Japanese codes.
25. Ibid., 38.
26. Budiansky, *Battle of Wits*, 255.

27. Ibid., 257.

28. Arvanitakis, *Killing a Peacock*, 39–40. In the case of the Allies, Winston Churchill was particularly upset, as any potential revelation about US cryptologic capabilities against Japan could reveal the Allied successes against the Nazis. With the infamous meeting with Bull Halsey, the admiral noted that the fliers, instead of being considered for the Medal of Honor, should be held for a court-martial. As it was, the admiral downgraded the Medal of Honor citations to Navy Crosses, an honor that is a mere step down from the Medal of Honor.

29. Benjamin Runkle, *Wanted Dead or Alive: Manhunts from Geronimo to Bin Laden* (New York: Palgrave MacMillan, 2011), 210.

30. Ibid., 210.

31. John Keegan, *Intelligence in War* (New York: Vintage Books, 2002), 316.

32. Arvanitakis, *Killing a Peacock,* 24.

33. Ibid.

34. Davis, *Lightning Strike*, 243.

35. Adam Leong Kok Wey, "Special Operations by Airpower: Strategic Lessons from World War II," *Air Power History* 64, no. 1 (Spring 2017): 38, http://www.afhistory.org/air-power-history/2017-air-power-history-archive/.

36. Arvanitakis, *Killing a Peacock*, 26.

37. Micah Zenko, "Does the Military Need a Micromanager?" *Foreign Policy*, 12 September 2017, https://foreignpolicy.com/2017/09/12/does-the-military-need-a-micromanager/.

38. Mark Bowden, *The Finish: The Killing of Osama Bin Laden* (New York, Atlantic Monthly Press, 2012), 226, 257.

39. Davis, *Lightning Strike*, 229.

40. Conner, "Have you Heard?" 32.

41. Davis, *Lightning Strike*, 231. Once aware of the significance of the message and the confidence that his intelligence personnel had in the work, Adm Chester W. Nimitz forwarded his concerns about direct targeting to Washington. History is not sure if the call went all the way up to President Franklin D. Roosevelt to authorize the mission. Still, Nimitz gave Adm William Halsey Jr., who commanded naval forces at Guadalcanal, the go-ahead, noting, "It's down in Halsey's bailiwick." Originally, the strike against Adm Isoroku Yamamoto was to use naval assets until the ranges involved forced the use of the P-38 Lightning. In turn, this led to Halsey's headquarters sending the message to his subordinate commanders, "Talleyho X, let's get the bastard."

42. Ibid., 228.

43. Runkle, *Dead or Alive*, 203.

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