

## “CATCHING THE FOX UNAWARE”

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### Japanese Radio Denial and Deception and the Attack on Pearl Harbor

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**T**he attack on the U.S. Pacific Fleet by the aircraft of the Japanese Striking Force (Kido Butai) at Pearl Harbor on the morning of 7 December 1941 was a total surprise to the American commands in Hawaii and Washington. The completeness of the operational surprise—the Imperial Japanese Navy had gathered the force, trained it, concentrated it, and sent it to the launch point without discovery by American intelligence, especially its radio component—was due largely to the success of the Japanese cover plan of radio denial and deception in hiding the existence, makeup, purpose, and timing of the attack. The Japanese navy’s denial and deception plan left American radio intelligence, known also as “communications intelligence,” with only scraps of information about the Japanese fleet’s movements during the weeks prior to the attack.

Even these wisps were intentionally misleading. Planners from Tokyo’s Naval General Staff and on the Combined Fleet (Kaigun) staff had developed a syn-

chronized plan for the Pearl Harbor Striking Force that combined the three elements of radio silence, active radio deception, and radio intelligence in a way that assured Tokyo that the U.S. Pacific Fleet was unaware of the approaching Kido Butai. Furthermore (and this is the subtle part of the Japanese planning) that the attack remained a complete surprise owed much to Admiral Isoroku Yamamoto’s scheme of supplanting the traditional strategic “decisive engagement”—a mid-ocean surface battle with the Pacific

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Fleet—with a preemptive strike. The measure of the plan's success was simply that Admiral Husband E. Kimmel, Commander in Chief, Pacific Fleet, and his command and intelligence staffs expected no attack, despite projections of air assaults on Hawaii as well as suspicious activity that morning.<sup>1</sup>

Technical parts of the radio deception and silence plan (the latter known as “denial” in modern military parlance) were executed in such a manner as to leave the American naval radio and fleet intelligence officers swaying between uncertainty as to the location of the Imperial Japanese Navy's carriers and conviction that these ships had remained in home waters in accordance with traditional Japanese doctrine and decades of exercises. The possibility that the Americans might have been victims of “self-deception,” the tendency of intelligence analysts to rely on assumptions in accommodating new data, as later claimed, does not mitigate the fact that the Japanese fed the Americans false data that the latter accepted as valid intelligence.

Some claim that the Striking Force did not maintain complete radio silence or that Tokyo's radio deception failed to fool the Americans. This dissent comes from two quarters: recent writings on the subject of Pearl Harbor intelligence and the statements of certain intelligence officers assigned to Hawaii at the time. The first group's claim can be dismissed easily. Its thesis is that the Kido Butai transmitted radio messages as it crossed the Pacific and was tracked by the U.S. Navy.<sup>2</sup> Its evidence has been expertly dismantled in books and articles.<sup>3</sup>

The second dissenting group consists of Lieutenant Commander Joseph Rochefort, the chief of Station H (or “Hypo”), the U.S. 14th Naval District's radio intelligence center, and Commander Edwin Layton, the fleet intelligence officer to Admiral Kimmel at the time. In statements and writings after Pearl Harbor, both officers insisted that the Japanese, though sailing in complete radio silence, could not have pulled off a successful radio deception against the U.S. Navy's Pacific area radio intelligence centers at Pearl Harbor and at Cavite (Station C, or “Cast”), in the Philippines.<sup>4</sup> Because of the prominent roles of both men in the events leading up to the Japanese attack, their claims will be considered against the evidence presented later in this article.

This article is based largely on extant Japanese and American records. While the Japanese destroyed the majority of their wartime records, some material relevant to Pearl Harbor was captured during the conflict. Another source comprises debriefs gathered during and after the war of knowledgeable Japanese prisoners of war and other personnel. More information emerged from the postwar decryption and translation of Japanese naval messages intercepted prior to Pearl Harbor. These translations, completed between late 1945 and early 1946, provide substantial insight and detail into the planning

for the Pearl Harbor strike, including aspects of the denial and deception plan.

This article will first briefly consider major changes the Japanese navy made to its strategy and to the operational organization of its carrier forces and how these changes facilitated the denial and deception plan. Second, it will examine the technical and operational details of the Japanese plans for radio silence, deception, and monitoring. Finally, the article steps through the chronology of the Japanese denial and deception, beginning with the Kido Butai rendezvous at Saeki Bay in the second week of November 1941 and following it to the attack. As we recount the Japanese actions, we also will consider the American intelligence estimates of those actions produced in the Pacific and Asiatic Fleet commands, as well as in Washington, D.C. This parallel examination should illustrate how the Japanese convinced American intelligence that their carriers, the spear point of the Imperial Japanese Navy, were still in the home islands on 7 December 1941.

#### THE IMPERIAL NAVY CHANGES ITS STRATEGY AND ORGANIZATION, 1941

The success of the Japanese strike at Pearl Harbor began with strategic and organizational innovations mandated for the Imperial Japanese Navy (IJN) by Admiral Yamamoto, commander in chief of the Combined Fleet, during the first four months of 1941. American naval intelligence did not detect these changes, much less recognize their implications. These shifts, especially in strategy, were to leave American intelligence critically susceptible to the radio denial and deception tactics used by the Japanese to protect the Striking Force.

For decades, the Japanese had planned for an encounter with the U.S. Pacific Fleet. Under the standard plan, while elements of the IJN would attack targets elsewhere, mostly to the south, the major part of the battle fleet, encompassing most of its carriers and battleships, would remain in home waters awaiting the expected riposte by the Pacific Fleet. (In fact, the American plan for a naval war with Japan, Plan ORANGE, envisioned in its most common form a phased movement westward, seizing Japanese-held islands along the way.)<sup>5</sup> The IJN would engage the Americans, when they arrived, in “decisive battle”—a concept that envisioned the attrition and eventual destruction in detail of an enemy fleet—somewhere in the Pacific Ocean east of the home islands. During the 1930s, as its carrier arm was expanded and modernized, the IJN’s exercises visualized the decisive battle taking place farther to the east than originally; by 1938, it was expected to happen near the Mariana Islands. But, no matter where the decisive battle was to be fought under successive versions of the Japanese war plan, the fleet always initially awaited in home waters for the approaching Americans.<sup>6</sup>

In January 1941, Yamamoto reversed this traditional “defensive-reactive” strategy: his carriers would strike first across the Pacific at the American fleet at Pearl Harbor. The Naval General Staff opposed Yamamoto’s plan, but by September 1941 it had agreed to his operation against Hawaii, war games having indicated a good chance for success with two new fleet carriers, *Zuikaku* and *Shokaku*.<sup>7</sup>

American naval intelligence missed this polar change and it continued to attribute a defensive character to Japanese planning. This view was based on long experience in analyzing Japanese fleet exercises. Since 1927, U.S. radio intelligence had eavesdropped and reported on the Japanese navy’s grand maneuvers in which the latter exercised its defensive strategy.<sup>8</sup> Even the most recent fleet maneuvers had run this same scenario. In early 1941, American naval radio intelligence still analyzed Japanese actions within the context of the old defensive strategy, wherein the main striking force of the Combined Fleet, which included the carrier divisions, would remain in home waters, refusing to gamble away the defense of the home islands.<sup>9</sup>

Yamamoto made a second significant change as well: reorganization of the Japanese carrier force. For more than a decade, the carriers had been operated in divisions of two flattops with their escorts. In the fleet maneuvers the carrier divisions had been allocated to the various fleets, sometimes in the roles of escorts or scouts but largely staying with the main force near Japan. However, in April 1941 all eight Japanese carriers (including those fitting out), plus their escorts and plane-guard ships, were formed into a new command, the First Air Fleet (1st AF, or *Itikoukuu Kantai*). This organization gave the Combined Fleet a mobile air force of nearly four hundred strike aircraft, under one commander.

Such an operational structure was totally innovative; Britain’s Royal Navy and the U.S. Navy still kept their carriers in small detachments and relegated them to the roles of raiders or scouts. For instance, the November 1940 British attack on the Italian naval base at Taranto was a one-carrier raid.<sup>10</sup> The 1st AF, in contrast, was a standing force and represented a concentration of naval air- and firepower that could sweep the seas—as it would, during the first four months of the war.<sup>11</sup> The six main carriers of the First Air Fleet, drawn from its 1st, 2nd, and 5th carrier divisions, constituted the heart of the *Kido Butai*. Other Striking Force ships were drawn from various surface combat units as escorts, along with a number of merchant vessels (*marus*) as the fleet train.

U.S. naval radio intelligence recovered a reference to the 1st AF on 3 November 1941 but, as reported in a Pacific Fleet Communications Intelligence Summary of that date, could not ascertain its significance other than that the formation “seemed to be in a high position” in the Japanese naval air hierarchy.<sup>12</sup> The U.S. failure to discover and understand the Imperial Japanese Navy’s radical

turns in strategy and organization left American naval radio intelligence vulnerable to the later Japanese radio silence and deception. The radio “picture” the Japanese were to present would seem to fit all too well with the decades-old, standard Japanese naval strategy.

#### THE JAPANESE PLANS FOR RADIO DENIAL AND DECEPTION

From the surviving Japanese records, it is difficult to pinpoint when the Japanese began planning radio denial and deception for the Pearl Harbor attack. It is likely that the plan incubated in the Combined Fleet during the late summer or early fall of 1941 and culminated in the October conference mentioned below. The plan, which incorporated a mix of techniques and procedures, grew from a tradition of communications security that had been a fundamental tenet of the IJN since the 1905 Russo-Japanese War and had been featured in naval maneuvers preceding World War II.<sup>13</sup>

Much of the impetus for communications security arose from the high Japanese regard for American and British radio intelligence in the Far East. This respect was based on the success that Tokyo’s own radio intelligence element—the Fourth Bureau of the Naval General Staff—had achieved against Western naval communications in the 1930s. Specifically, it was an incident in mid-1941, when deception planning for the Pearl Harbor attack probably had started, that convinced the Japanese of the necessity of an effective radio denial and deception plan.

In early July, Japan occupied French bases, airfields, and other military facilities near Saigon and Cam Ranh Bay, in southern Indochina. To support the operation, the 2nd Carrier Division (*Hiryu and Soryu*) sailed south toward Formosa under radio silence. The Japanese communications plan called for the 1st Carrier Division (centered on *Akagi* and *Kaga*) to receive traffic for the 2nd Carrier Division, but not for *Hiryu* and *Soryu* themselves. Somewhere near Formosa, one of the carriers of the 2nd Carrier Division transmitted urgent messages to Tokyo. The British radio-intercept site in Hong Kong, on Stonecutter’s Island, was listening; it located the Japanese carriers and sent the information to the British Far East Combined Bureau in Singapore. A Japanese radio intelligence team aboard *Soryu*, in turn, intercepted the British direction-finding message. According to a Japanese officer, this incident taught the IJN that although the British could not read its codes, “they could plot and follow ship movement.”<sup>14</sup>

This insight reinforced the Japanese naval leadership’s healthy regard for British, as well as American, radio intelligence, which posed the main threat to the secure movement of the Pearl Harbor Striking Force. As we shall see, they incorporated a number of denial and deception measures to beat it. But was this high regard warranted?

### AMERICAN NAVAL RADIO INTELLIGENCE, 1941

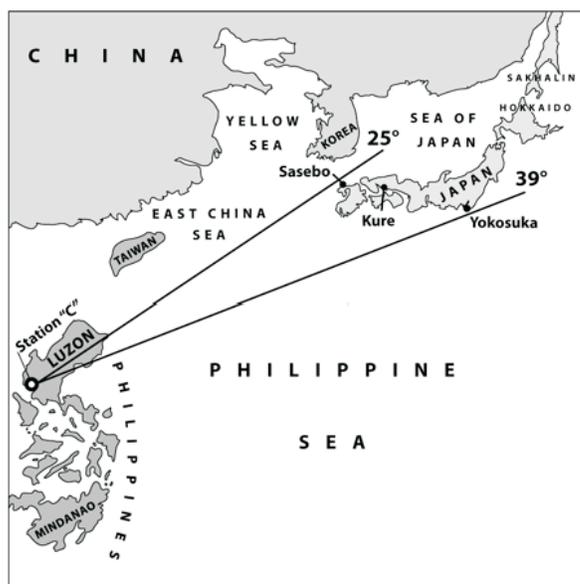
In late 1941, the American naval radio intelligence against Japan was conducted by the U.S. Navy's cryptologic organization, OP-20-G. The effort was anchored at three major sites: Washington, D.C. (whose station was known as "N," or "Negat"), Hawaii, and the Philippines. These three stations were involved in the collection and analysis of Japanese communications. All shared intelligence on the Japanese navy. Some of the intelligence was exchanged over radio circuits, among all three stations and to their supported commands. However, the bulk of the collected intelligence—transcripts of Japanese encrypted messages—was sent by mail to Washington for analysis. Other intercept, notably call signs, direction-finding results, and "operator chatter," was radioed to other centers only. The stations in the Pacific—in Hawaii and the Philippines—directly attacked current Japanese naval communications and message traffic. In Hawaii, the radio intelligence was performed at "Hypo" (or Station "H"), under Lieutenant Commander Rochefort. Hypo, though actually subordinate to the commander of the 14th Naval District, shared its work with Admiral Husband Kimmel's Pacific Fleet, Admiral Thomas Hart's Asiatic Fleet, and the 16th Naval District. Station "Cast," at Cavite, near Manila, was charged with solving the newest version of the IJN's main fleet operational code, known at the time as "AN-1." Little progress was made on this code, even with help from the British Far East Combined Bureau.<sup>15</sup>

Three main methods were used to gather radio intelligence against the Japanese navy: radio direction finding, traffic analysis, and cryptanalysis. In late 1941, these techniques produced a mixed bag of results. Radio direction finding (RDF, or DF) is the attempt to locate a radio station by determining the direction, or bearing, of its emissions relative to the monitoring site. Joseph Rochefort would testify during one of the Pearl Harbor investigations that the mid-Pacific DF net (which consisted of DF listening posts in Hawaii, Samoa, and the Aleutians) was not "as efficient or productive of results as it might have been. It lacked equipment and trained operators and the long distances involved [over two thousand miles] which rendered an efficient RDF operation rather difficult."<sup>16</sup> Ideally, all three DF posts would take bearings on a Japanese ship or station while it transmitted a message; the three bearings would intersect where the transmitter was. For a number of technical reasons, however, such as distance, propagation characteristics, and a lack of timely communications for coordination, this ability was available only occasionally.<sup>17</sup> Station Cast had a DF capability and was part of a separate western Pacific DF net with posts in Guam and Shanghai. It typically was able to obtain at least usable single bearings on Japanese naval transmissions from the home islands. Rochefort relied heavily on its results to assess Japanese naval activities. But a

single bearing is limited, since it gives only the direction, not the distance or location, of a transmitter.

DF bearings from Cast consistently placed the Japanese carriers within an arc between 20 and 35 degrees wide, which covered the Japanese home islands.<sup>18</sup> On the basis of these bearings and analysis of message traffic patterns, over the summer and fall of 1941 U.S. naval analysts at Hypo and Cast developed a composite profile of Japanese carriers. The ships, they found, routinely operated from various bases—such as Kure, Sasebo, and Yokosuka—in the Japanese home islands and near Formosa. In late November and early December 1941, the consistent plotting of the call signs of the Japanese carriers within this arc would be crucial in U.S. assessments of the ships' status.

**COMPOSITE DF BEARINGS  
15 OCTOBER–6 DECEMBER 1941**



Traffic analysis—the exploitation of “external” aspects of encrypted messages, such as call signs, volume of traffic, addresses, and relationships between recipients (but not code breaking to read the messages themselves, which is the province of cryptanalysis)—is dependent on the amount of radio traffic sent. In October 1941, Rochefort later stated, analysis of IJN communications was good, but in the month prior to Pearl Harbor information grew scarce, as the amount of exploitable communications decreased.<sup>19</sup> In addition, because intelligence derived from traffic analysis (or radio intelligence generally) is largely inferential, sometimes information was interpreted differently by Cast and Hypo.<sup>20</sup>

The two Pacific sites reported their traffic-analysis intelligence to commanders through technical summaries: Cavite issued TESTMs (apparently for “Technical Estimate Messages”), while Hypo distributed a daily “H Chronology.” The Pacific Fleet intelligence officer, Commander Layton, passed along a daily “Communications Intelligence Summary” to Admiral Kimmel based on the two stations’ reports. The Far East Section of the Office of Naval Intelligence in Washington used the TESTMs, chronologies, and COMINT summaries to issue every Monday an estimate of Japanese ship locations.

In the all-important area of cryptanalysis, the U.S. Navy was still trying to exploit the current version of AN-1 (in mid-1942 redesignated “JN-25B”), which

had been put into effect in December 1940. This system used some thirty-three thousand code groups, with several thousand additional groups for commonly used words, all of which were further encrypted with an additive key. The additive system had been solved, but this advance had revealed only the underlying code groups. Recovery of the plaintext values of the code groups, called “book breaking,” required officers who knew Japanese. Even with the cooperation of the Far East Combined Bureau, the far more difficult job of recovering the groups’ actual meanings had advanced only marginally after a year’s labor. Translators had made a partial recovery of about four thousand groups (about 10 percent of the total), but these consisted mostly of digits, phrases, and words from standardized, pro forma messages, such as ship movement reports.<sup>21</sup> Even this, however, did not mean that 10 percent of the contents of the Japanese messages, or 10 percent of all messages, could be exploited. The problem was far more difficult: it was analogous to trying to read a foreign-language tract with a dictionary in which only a random 10 percent of the words are defined.

The bottom line was that the American naval radio intelligence was fairly good at deriving useful information from analysis of Japanese communications and direction finding of the transmitters, provided messages were available in sufficient quantity and identities could be recovered. When Japanese communications were curtailed, usable radio intelligence declined. American naval intelligence needed other sources to fill the gap—aerial reconnaissance, visual observation, espionage, or open sources, such as newspapers. Unfortunately, due to stringent Japanese security measures and a lack of U.S. aviation resources, none of these were available. Foreign observers, like naval attachés, diplomats, and journalists, were kept away from the navy yards and training areas near Kyushu and the Inland Sea.<sup>22</sup> Japanese newspapers were censored. Foreign ships were screened from the sensitive zone. Those that got too close were held up in port, as happened in Naha, Okinawa, when, on 1 December, a Philippines-registered freighter was ordered held by the Sasebo Navy District headquarters and its radio sealed.<sup>23</sup> Attempts to elicit intelligence from Japanese sailors was pointless; most of the Pearl Harbor force’s personnel were not told of their target until the final assembly at Hitokappu Wan (Bay) on 22 November.<sup>24</sup>

As a result, as one assessment of U.S. intelligence stated at the end of November 1941, Washington’s and Hawaii’s estimates of the location of Japanese naval forces were “almost totally dependent on R[adio] I[n]telligence.”<sup>25</sup> This reliance on a single source would be the decisive vulnerability of American intelligence in the Pacific during late 1941.

### THE JAPANESE NAVY INSTITUTES NEW COMMUNICATIONS SECURITY MEASURES, 1941

For Japanese planners, the perceived American exploitation of their general naval communications system remained a constant and paramount worry. In early November 1941, the IJN instituted new general security features in its communications structure. First, a new fleet call-sign system, HYOO9 (producing kana-kana-numeral combinations, such as “HA FU 6”), came into operation on 1 November. This new system hampered the efforts of OP-20-G’s analysts in Washington, Hawaii, and the Philippines to identify Japanese ships, command, and stations. Fortunately for the U.S. analysts, the Japanese navy continued to use the previous call signs (“drill” call signs, sometimes called “secret” calls—numeral-kana-kana combinations like “8 YU NE”) in exercises and training.<sup>26</sup>

More important, though, was the 5 November change to Tokyo’s naval communications procedure. Prior to this date, Tokyo had transmitted messages specifically to recipients, using their individual call signs. Now it sent all messages to single general or collective call signs, such as for all ships or a shore-based radio station, listing actual, intended recipients only in the encrypted text. When Joseph Rochefort saw this new address system, he speculated that it signified the end of all message headings.<sup>27</sup> In postwar testimony, Edwin Layton characterized the traffic that resulted as “calls addressed to nobody from nobody; which everyone [Japanese] copied, and when they do that nobody is being talked to that you can identify and therefore the forces are pretty hard to identify in traffic.”<sup>28</sup>

The Kido Butai also received supplementary and detailed communications changes intended for it alone. These specific elements were integrated into the denial and deception plan most likely developed at a conference on force communications in Tokyo on 27 October attended by representatives of the Naval General Staff, the First Air Force, the Combined Fleet, and the Eleventh Air Fleet, along with the chiefs of staff of the other major fleets.<sup>29</sup> This meeting may have made use of the results of two Combined Fleet communications tests held from 18 through 24 October, which focused in major part on transmissions of the Kido Butai.<sup>30</sup>

### ELEMENTS OF THE KIDO BUTAI’S DENIAL AND DECEPTION PLAN

Although no copy of the resulting denial and deception plan for the Pearl Harbor Striking Force exists—most Japanese records were destroyed at the end of the war—much of it can be reconstructed from interviews with IJN officers, captured documents, and intercepts by the U.S. Navy’s radio-intercept stations. What emerges is a plan, consisting of three complementary parts, designed not only to hide the Kido Butai from American naval radio intelligence but to

monitor the latter's communications from Pearl Harbor so as to track the scheme's effectiveness. These parts were radio silence, radio deception, and radio monitoring.

### *Radio Silence*

Imperial Japanese Navy doctrine had long made provision for radio silence. The 1937 Standard Communications Procedures divided communications into two categories. In the first, known as "general," case, a communication between two navy ships or stations was complete when the receiving entity acknowledged receipt. However, a second method, "special communications," involved unilateral broadcasting; message acknowledgment was "not required from the radio receiving ship or station."<sup>31</sup> This method ensured that the Pearl Harbor Striking Force remained silent.

General communications instructions were later amended to give commanders more leeway. In early 1940, the naval Wireless Procedure Rules allowed the chiefs of staff of independent forces to issue their own orders for communications, within IJN guidelines.<sup>32</sup> By 1941, standard IJN-wide regulations mandated three degrees of radio silence, of which the two highest, "very strict" and "strict" radio silence, prohibited all communications from a unit or fleet except in emergency. In all three situations, local commanders controlled their own communications.<sup>33</sup>

For the attack on Pearl Harbor, known as the "Hawaiian Operation" (Hawai Sakusen), that commander was Admiral Chuichi Nagumo. On 5 November, Admiral Yamamoto issued Combined Fleet Secret Order 1, of which section 4 stipulated that the Striking Force, in accordance with instructions to be detailed by its commander, would maintain strict radio silence from the time of departure from the Inland Sea.<sup>34</sup> Admiral Nagumo reiterated these instructions, adding only the simple stricture "All transmissions of messages are strictly forbidden."<sup>35</sup> This radio silence was accomplished at two levels: by cessation of transmissions by individual ships and through the use of broadcast, or one-way, communications.

When the Striking Force deployed in mid-November to Hitokappu Wan, all shipboard radio transmitters were disabled or secured. All naval radio traffic was sent in manual Morse code; slips of paper were inserted between the contacts of transmitting keys to prevent emissions.<sup>36</sup> In other cases, fuses or portions of circuitry were removed from transmitters to make them unusable. The communications officer of the battleship *Hiei* put the transmitter key in a box, which he used as a pillow.<sup>37</sup> The day before the attack on Pearl Harbor, the transmitters having been shut down for almost twenty days, it was decided to test them on closed circuits ("dummy loads"). The radiomen found that many transmitters had been made inoperative by paper residue or rust buildup on the contacts of

hand keys. This testing perhaps saved the task force problems on the day of the attack, when it finally communicated with Tokyo and the tankers in its fuel train.<sup>38</sup>

A new detail of the radio silence plan was added at Hitokappu Wan. Initially, plans called for reconnaissance aircraft from the carriers to search ahead for enemy or neutral ships that might discover the Striking Force. However, the force's air chief, Commander Minor Genda, considered this a security risk. Genda argued that pilots might get lost and ask for navigational beacons or radio directions; the Americans would hear these transmissions.<sup>39</sup> His argument won out; the carriers would instead keep six planes ready on their flight decks to respond to emergencies.<sup>40</sup> The only reconnaissance aircraft dispatched were the scout planes from the cruisers *Tone* and *Chikuma* on the morning of the attack. Their reports were sent to the Striking Force "in the blind"—that is, without expecting acknowledgment. (These transmissions were not heard by the Americans.)

The major problem remaining was how to update the Kido Butai with new intelligence, weather, and orders as it sailed east. The Naval General Staff solved it by resorting to the naval broadcast method—one-way transmission to a ship or fleet using multiple frequencies and transmitters and the repeat of messages. Shore stations transmit messages several times on different frequencies; the receiving audience does not acknowledge the messages, but reception of at least one repetition, on at least one frequency, is considered all but guaranteed. All navies at the time used this method. The main Tokyo naval communications station would send messages to the Striking Force several times a day, on as many as three separate frequencies in the high-frequency (HF) band, 3–30 MHz, and another in the very-low-frequency (VLF, 3–30 KHz) range. U.S. radio intelligence in Hawaii noticed the repeat traffic but concluded that the Japanese were disguising traffic levels for security reasons.

Ultimate responsibility for reception and distribution coverage of broadcast messages belonged to the refitted battleships *Hiei* and *Kirishima*, of the 3rd Battleship Division, since they had the largest and most sensitive antennas and receivers. Once a message had been copied and decoded aboard one of these ships, its contents were disseminated throughout the Kido Butai, by semaphore flags during the day or narrow-beam signal lamps by night.<sup>41</sup> The ships sailed close enough to one another, usually less than a kilometer, to relay messages by visual means through the formation. The same signaling methods were used to arrange refueling and repositioning of ships.

To ensure further that all traffic was received, however, every ship was required to listen to the broadcast. Many copied the same messages, if at different times. For example, Combined Fleet Order 11, the 3 December notification from Admiral Yamamoto to the Imperial Japanese Navy that all vessels

belonging to Panama, Norway, Denmark, and Greece were to be treated as enemy, was received by the 5th Carrier Division flagship on 4 December at 1130 (11:30 AM, Tokyo time) and by the 1st Destroyer Squadron flag at 1350 (1:50 PM) on 3 December.<sup>42</sup>

Not all American intelligence officers were convinced the broadcast method was used to communicate to the Striking Force. Edwin Layton admitted after the war to a joint congressional committee that he had believed that the radio silence went “both ways”—that Tokyo had not transmitted anything, even the famous “Climb Mount Niitaka” (actually, Niitakayama) order. Or, he speculated, the Japanese might have used special antennas with narrow beams.<sup>43</sup> Neither was the case. In fact, the ships of the Kido Butai sailed silently eastward to Pearl Harbor, receiving current intelligence and orders as they went.

### *Radio Deception*

Radio silence could shield the Striking Force from detection by the American listening posts spread around the Pacific. But Japanese naval officers feared that the abrupt and continued complete cessation of radio traffic by the ships, especially after a period of training that had featured extensive communications, would catch American attention and perhaps tip off the operation. It was not the silence itself that concerned the Japanese but what the Americans might deduce from it—that the carriers were on the move.<sup>44</sup> The only way to convince the Americans that the ships of most interest to the U.S. Navy, the carriers of the First Air Fleet, were still at their ports or active in the Inland Sea was through radio deception. A subtle and extensive radio deception plan was put into motion that allowed for a seamless shift to false radio traffic when the carriers went silent, followed by seemingly real transmissions until the Kido Butai reached Hawaii.<sup>45</sup>

To set the stage for the deception, in early November 1941 the Naval General Staff ordered the First Air Fleet and other ships, under the direction of the DF Control Center of the 1st Combined Communications (that is, radio intelligence) Unit in Tokyo, to establish a regular schedule of drill communications. From 8 November through the 13th, *Akagi*, *Hiei* (the flagship of the 3rd Battleship Division), and the 24th Division of Ships (Destroyers) were to communicate with the Tokyo communications center three times a day—at 0600, 1200 (noon), and 2000 (8 PM), all Tokyo time. The participation of the DF Control Center was significant, suggesting that it was monitoring the radio traffic for purposes of evaluating the transmissions for later imitation, as well as for security.<sup>46</sup>

On 15 November, the Combined Fleet discreetly substituted new drill call signs for the various task forces, including the Striking Force.<sup>47</sup> The stations involved in the radio deception were to use the old drill calls of the carriers, principally *Akagi*, and other ships of the Kido Butai for the next three weeks. These

false communications were to be sent by regular radio operators from the major ships of the Kido Butai who had been sent ashore to bases at Kure, Sasebo, and Yokosuka. A communicator's "fist," or the characteristic unique way a radioman taps out characters on Morse keys, was a method of identifying operators and, by extension, their ships. So, when American listening posts heard the familiar fist of an operator known to have sent messages from *Akagi*, using that ship's call sign, they construed the carrier to be on the bearing taken of his transmissions—in this case, in the direction of one of the home-island bases.

As the carriers departed the Inland Sea and their air squadrons flew out to join them, other aircraft, from the 12th Combined Air Group, arrived at the newly vacated air bases. Their role was to keep up flight activity levels and associated radio traffic with the carriers and bases, as if the previous several weeks of training were continuing. The false traffic included call signs, procedural chatter, and dummy messages between notional aircraft and carriers, along with communications with other vessels. This "useless" traffic was sent according to guidelines set out in the "Naval Dummy Messages and Jamming Rules" (Kaigun Giden Booghin Kitei) promulgated by the Navy Ministry on 4 November 1941. In order to avoid confusion or inadvertent compromise of actual information, all false traffic consisted of dummy groups or meaningless text.<sup>48</sup>

The Japanese did not, however, reassign the carrier call signs to destroyers stationed in the Inland Sea. This claim was made after the war. Edwin Layton responded in an April 1942 memorandum that stated the Japanese shifted the Striking Force carrier radio calls to "fishing boats in the Mandated Islands."<sup>49</sup> Both assertions were wrong.

While the radio silence hid the Kido Butai's location, then, radio deception strove to convince American communications intelligence that the strike element of the Combined Fleet, its carriers, was still in home waters.

### *Radio Monitoring*

With the radio-silence and deception parts of the plan in operation, the Japanese needed a way to verify that the plan was working and that the Americans at Pearl Harbor remained unaware of the approaching task force. The Naval General Staff in Tokyo accordingly tasked its own radio intelligence units to monitor American naval communications from Hawaii for any indication of an alert. The principal Japanese intercept station that covered Pearl Harbor communications, Detachment 1 of the 6th Communications Unit, was on Kwajalein Island with the IJN radio communications station. While the Japanese could not read encrypted U.S. naval messages, they could identify urgent messages and individual ships, units, and aircraft, as well as locate Pacific Fleet ships and planes via direction finding. American patrol aircraft were of special concern, since aerial

searches north of the Hawaiian Islands might detect the Kido Butai. The Japanese analyzed communications for any change in the Pacific Fleet's operational readiness; this information would be relayed to the Striking Force.<sup>50</sup>

A small radio-intercept detachment aboard *Akagi* performed the same mission. When the Kido Butai approached Pearl Harbor, this unit also monitored Hawaiian commercial radio stations, KGU and KGMB, for any hint that the Americans were aware of the approaching task force.<sup>51</sup>

#### DENIAL, DECEPTION, AND AMERICAN REACTION, 8 NOVEMBER–7 DECEMBER 1941

After Admiral Yamamoto issued his secret order dictating radio silence once the task force departed for the Kurile Islands, the Kido Butai began a period of training, replenishment, and redeployment to the final assembly point at Saeki Wan, in the Oita Prefecture, in northeast Kyushu. First, from 6 to 9 November, most of the major units of the force headed for Kure or Sasebo to make ready for the operation. *Kaga* arrived at Sasebo on 7 November, *Akagi* on the 9th. The 5th Carrier Division's *Shokaku* and *Zuikaku* made Kure on 9 November. *Hiryu*, under way for Kure, lost an anchor and had to return to Sasebo on 10 November. Escort cruisers and destroyers sailed to Kure on 9 November.

It was during this repositioning that the Tokyo DF Control Center–managed communications drill involving the Tokyo communications center, the carrier *Akagi*, *Hiei*, and the 24th Division began. From 8 through 13 November, as noted, these ships communicated three times a day with Tokyo. The Americans monitored these communications, and the 10 November Pacific Fleet Communications Intelligence Summary correctly reported *Akagi* at Sasebo and other carriers at Kure.<sup>52</sup>

On 12 November, the 16th Naval District reported Admiral Yamamoto's flagship, the battleship *Nagato* (call sign 9 HE FU), near Kure. Actually, the ship, with Yamamoto embarked, was at the Iwakuni Naval Air Station, about thirty miles west of Kure; but this was close enough, based on the DF bearing of 30 degrees taken by Cavite.<sup>53</sup>

The next day, Cavite reported *Akagi* near Sasebo. The carrier had left the base that day to pick up its aircraft complement near Kagoshima, about sixty miles to the south. Whether the DF bearing of 27 degrees was of *Akagi* or a station deceptively using its call sign depends upon when the transmission was heard. This information, though, is not in the report; it is possible that the bearing was taken on 14 November. If this interpretation is correct, the transmission should be considered deceptive, since at the time the ship actually was heading to the rendezvous at Saeki Wan to pick up the Striking Force

commander, Admiral Nagumo, and his staff.<sup>54</sup> The Pacific Fleet COMINT summary reported that the carriers were relatively “inactive” and had been in home waters from 13 to 15 November.<sup>55</sup>

On 14 November, units of the Kido Butai assembled at Saeki Wan and the nearby port of Beppu, except for the battleship *Hiei*, which had sailed northeast to Yokosuka to pick up staff intelligence officers before continuing to Hitokappu Wan. For the next three days the ships stayed at Saeki, and the Pacific Fleet COMINT summaries reported that “the carriers are mostly in the Kure and Sasebo and with the exception of a few in the Kyushu area.”<sup>56</sup> While this statement could be interpreted as covering all the possibilities, the specific locations mentioned were centers for radio deception, and this suggests that false radio traffic may have supported Hawaii’s conclusion.

In the midafternoon of 17 November, Admiral Yamamoto, aboard *Nagato*, arrived at Saeki Wan for one last meeting with many of the staff and officers of the Kido Butai. He spoke to them of his confidence in the success of the mission. Around 1600 (4 PM), the first ships of the task force, the 2nd Carrier Division (*Soryu*, *Hiryu*) and their escorting destroyers, slipped out of Saeki Wan, headed southeast out the Bungo Strait past Okino Shima Island, and then turned northeast toward Hitokappu Wan in the Kuriles. The rest of the Striking Force followed in groups of two or four ships.

For the next few days, the Pacific Fleet intelligence barely mentioned the Japanese carriers. The COMINT summary of 16 November associated unspecified carrier divisions with the 1st Destroyer Squadron, in the Mandates. The destroyer unit was believed to have worked previously with the carriers and the 3rd Battleship Division.<sup>57</sup> The 18 November summary placed the carrier divisions—again, which ones were not specified—with the same battleship division but this time the 2nd Destroyer Squadron. This summary added that the commander of the Japanese Second Fleet may have been in command of a large task force with elements of the Third Fleet, combined air fleets, some carrier divisions, and the 3rd Battleship Division.<sup>58</sup> The same COMINT summary situated the 4th Carrier Division, specifically the carriers *Zuikaku* and *Shokaku* (the latter, call sign SI TI 4), near Jaluit Island in the Marshalls, two thousand miles southeast of Japan.<sup>59</sup> The summary assessed these latter identifications of the carriers as doubtful.<sup>60</sup>

As the ships sailed north to the cold and foggy Kuriles, the Tokyo broadcast sent out a message from Commander, Carrier Divisions of the Combined Fleet to all carrier units, Commander, 1st Destroyer Squadron, and Commander, 3rd Battleship Division that beginning at midnight 19 November Tokyo time, fleet frequencies in the HF band would be on “Battle Control” status, while those in VLF would assume “Alert Control.” This order, Striking Force Operational Order 1, meant that the HF broadcast would carry operational traffic, while the

VLF broadcast would transmit if the traffic volume became excessive.<sup>61</sup> It did not order radio silence—the ships already had been ordered into HF silence, and they could not transmit on VLF frequencies.

Japanese radio deception may have begun to bear fruit by this time. The 19 November Pacific Fleet COMINT summary observed that *Hiei* “appears today at Sasebo”—that is, on the southwest coast of Kyushu.<sup>62</sup> In reality, as we have seen, *Hiei* was in Yokosuka, on the east coast of Honshu, several hundred miles northeast of Sasebo.<sup>63</sup>

From 20 to 23 November, the ships of the Kido Butai slipped into Hitokappu Wan, an isolated bay at Etorofu Island, in the southern Kuriles. The last ships to arrive were the Striking Force’s three submarines, *I-19*, *I-20*, and *I-23*, and the carrier *Kaga*. The gunboat *Kumajiri*, entering the bay ahead of the force, had ordered the local post office to curtail post, telephone, and telegraph service. When the task force itself arrived, all shipping activity at the harbor was suspended. Back in the home islands, further communications drills for the Combined Fleet—except for the Striking Force—were ordered to begin on 22 November. One drill was set to run two days, while an air-defense communications exercise involving the naval district at Sasebo and the Eleventh Air Fleet was scheduled to last three weeks.<sup>64</sup>

The clouds of secrecy created by the silence and deception now descended to shroud the Kido Butai from American naval intelligence. On 22 November, Cavite took a bearing of 28 degrees on *Akagi* (call sign 8 YU NA), which placed the carrier in Sasebo. On the same day, Cavite took a bearing of 40 degrees on SO SA 2, the fleet call sign of the commander of the First Air Fleet, and placed him in Yokosuka.<sup>65</sup> Of course, at the time Admiral Nagumo was at Hitokappu Wan, aboard *Akagi*, where he was conducting meetings to incorporate recent intelligence about Pearl Harbor into the attack plan.<sup>66</sup>

On 23 November, Cavite reported that the drill call sign (1 KI RA) of the large carrier *Zuikaku* bore 30 degrees, which placed it at the naval base of Kure.<sup>67</sup> The COMINT summary for that day had little to say, except that the “carrier divisions were relatively quiet, but that Carrier Division Three was definitely associated with 2nd Fleet operations.” The summary added that the identifications remained valid, although there were indications of an imminent move to the south and of the massing of additional covering forces in the Mandates.<sup>68</sup>

For the next two days, Nagumo and his staff aboard *Akagi* were briefed on the latest Pearl Harbor intelligence by an officer from Yokosuka brought by *Hiei*. The Striking Force’s air chief, Genda, put the naval pilots through classroom briefings and training in flight formations and tactics to be used in the attack. The necessity for radio silence during the voyage to Hawaii and the flight to Pearl Harbor was emphasized.<sup>69</sup>

On 24 November, Cavite took another bearing of 28 degrees on *Akagi*, call sign 8 YU NA, locating it at Kure. Given the vagaries of direction finding, which had placed the ship in Sasebo two days earlier, Cast concluded that it was in the Inland Sea.<sup>70</sup> The Pacific Fleet COMINT summaries for 24 and 25 November carried minimal information on the all-important carriers. That of the 24th reported “no definite indications of locations [for the carriers].”<sup>71</sup> The next day’s summary mentioned that the fleet radio traffic level was still high and that one or more carrier divisions were “present in the Mandates.”<sup>72</sup> On 25 November, the Far East Section of the Office of Naval Intelligence (OP-16-F2), headed by Commander Arthur McCollum, issued its weekly location of the Japanese fleet, placing all Japanese carriers in the ports of Sasebo or Kure.<sup>73</sup>

On the same day, Tokyo broadcast Yamamoto’s Combined Fleet Operational Order 5 ordering the Striking Force to depart with the “utmost secrecy” the next day and advance to its standby point northwest of Hawaii, to arrive by the evening of 3 December.<sup>74</sup> At six o’clock on 26 November, the ships of the Kido Butai raised their anchors, slowly steamed into the northern Pacific, and settled into a cruising formation, within a box some thirty kilometers on a side. Initially, the three submarines scouted ahead on the surface. (The submarines were later pulled back, because high swells and mist slowed them and hindered their ability to sight ships.) The six carriers followed behind a screen of destroyers and cruisers in line abreast. The battleships *Hiei* and *Kirishima* tailed the flattops by six kilometers. The seven tankers were spread among the formation. The Striking Force sailed in complete radio silence, its transmitters disabled or disconnected. The only connection to Tokyo was the broadcast, which continued to repeat vital traffic.

American intelligence reports for 26 and 27 November, each covering the previous twenty-four hours of intercept, reflected the continuing effectiveness of Japanese radio deception. The 16th Naval District transmitted an intelligence summary stating that “our best indications are that all known First and Second Fleet carriers are still in the Sasebo–Kure area.”<sup>75</sup> On 25 November, Hypo, Rochefort’s unit in Hawaii, noted that *Kirishima* was believed to be in Yokosuka. On 26 November, “H” reported that “several carriers were near Sasebo, including Car[rier] Div[ision] 4” (*Zuikaku* and *Shokaku*, which was call sign NE RU 8). Rochefort also reported that during the evening the carriers were heard using their “secret [drill] calls” on 4963 kilohertz, a tactical frequency, but that no bearings were available.<sup>76</sup> The Pacific Fleet COMINT summary for 26 November mentioned no carriers but commented that the Third Fleet, with which the carriers usually were associated, had not yet left the Sasebo area.<sup>77</sup>

At about the 1000 (Tokyo) on 27 November, Cavite took bearings of 30 degrees on the drill call signs for *Akagi* and *Hiryu* (9 RU SI), which put them in the

Kure area. Cavite also heard on the same bearing the call sign 8 RO SA, which it identified as the “carrier” *Koryu*; an unidentified merchant ship (6 MI TA); and another, unidentified, call sign, 7 ME NE—placing them all in the Kure area.<sup>78</sup> Station H still plotted the carriers at Sasebo with the Third Fleet but noted that activity at the base was “light.”<sup>79</sup>

The Pacific Fleet Communications Intelligence Summary of 27 November carried an entry that “an air unit in Takao [Taihoku, on Formosa] addressed a message to the *Koryu* and *Shokaku*. The carriers are still in the Home Waters.”<sup>80</sup> The Office of Naval Intelligence in Washington added in its report for that day that all carriers were in the “Sasebo–Kure area” (see the figure—the bases are nearly two hundred miles apart, on different islands, but are on nearly the same bearing as measured from Cavite) with the commander in chief of the Combined Fleet.<sup>81</sup> In reality, by this date the Striking Force had been at sea a day and was some thousand miles to the northeast.

On 28 November, Hawaii repeated Cavite’s previous day’s bearing reports and supplemented them with the assessment that Commander, Carrier Division and “several” carriers were in the Kyushu area. Rochefort also stated two additional items: that the commander of Carrier Division 4 was at Sasebo and that the “secret” (or drill) call sign for the Combined Air Fleet was being heard on two different frequencies.<sup>82</sup> Later that day Cavite reported no new bearings, and 16th Naval District had nothing else either. The Pacific Fleet COMINT summary reported that messages had been sent to Carrier Divisions 5 and 7, the latter probably an error in identification.<sup>83</sup>

Through 30 November, the Kido Butai continued to push eastward, reaching on that day “Point B,” nearly a thousand miles east of the Kuriles. The sailors and airmen kept reviewing their attack plans, while the staff received updates via the Tokyo broadcast about the weather along the intended course, orders, updates on the diplomatic fencing between Washington and Tokyo, intelligence from the consulate in Honolulu, and radio intelligence from Kwajalein. Among other items passed by from the latter was that American reconnaissance planes still patrolled only to the south and west of Pearl Harbor—that is, the area to the north, from which the air strike was to be launched, was not being searched.

Going into the last day of November, American estimates still placed the all-important carriers in Japanese waters. The COMINT summary stated that *Hiei* had exchanged messages with elements of the Second and Third fleets.<sup>84</sup> Station H placed the carriers in the Kyushu area.<sup>85</sup> On that day, in the 1000 hour (Tokyo), perhaps the most critical deceptive Japanese transmission was picked up by the Americans. Cavite heard *Akagi* and an unidentified station (call sign 8 RO TA), perhaps a *maru*, on a bearing of 27 degrees, placing them near Sasebo. These call signs were heard on the same tactical frequency, 4963 kilohertz, as

before. The summary added that the carrier had been in contact with several *marus*.<sup>86</sup> Rochefort and Layton interpreted this new intercept differently; but neither suspected that the transmission might have been phony. In testimony in mid-1945 before the Hewitt Inquiry, one of the Pearl Harbor hearings conducted by the Navy, Rochefort suggested that the radio activity on the tactical circuit indicated that some sort of exercise or operation, like a fleet problem or maneuver, was beginning.<sup>87</sup> Layton, testifying in 1946 before the joint congressional Pearl Harbor investigation, said he had told Admiral Kimmel that he thought *Akagi* was talking to “some tanker *Marus*.”<sup>88</sup> (Thirty years later, Layton changed his story, claiming that Cavite had misidentified the call sign 8 YU NA [it had not] and that the carrier had been in radio silence—thereby implicitly refusing to acknowledge the Japanese deception.)<sup>89</sup>

On 1 December, the Japanese completely replaced the current service, or fleet, call-sign system. This change hindered recovery of ship and formation identity and, coming only a month after the previous, expected call-sign replacement, led Layton and Rochefort to believe the Japanese were “preparing for active operations on a large scale.”<sup>90</sup> They also observed that four to five days prior to the change the Japanese stations had been repeating old messages to the old call signs, probably in an attempt to minimize undelivered traffic. The COMINT summary reported “no change” with respect to the carriers.<sup>91</sup>

Despite the paucity of intercepted carrier communications—or, conversely, and more likely, because of the very same handful of apparently valid intercepts and DF bearings—U.S. naval intelligence estimates at all levels continued to place the Japanese carriers in home waters, with one or two possibly near the Marshall Islands. Layton, in his 1 December location report, placed at least four carriers near Formosa and one in the Marshall Islands. When asked by Admiral Kimmel about the other carriers, he said he had no current information but that if pressed, he believed they were in the Kure area, probably refitting from operations six weeks earlier.<sup>92</sup> For Kimmel’s command, the main interest was the “all important Japanese naval movements south,” whereas the carriers seemed to be in Japanese waters.<sup>93</sup>

In Washington on the 1st, Commander McCollum published his weekly estimate, placing all six of the Kido Butai carriers in Kyushu or Kure and the battleships *Hiei* and *Kirishima* in Sasebo or Kure.<sup>94</sup> This estimate was passed to the Chief of Naval Operations. Down the hall from McCollum, Captain Richmond Kelly Turner, head of War Plans, placed three Japanese carriers in the Mandates, in his Daily Information Summary.<sup>95</sup>

For the next six days the Pacific Fleet’s radio intelligence and other intelligence centers maintained the same estimate, that the majority of Japanese flat-tops were in home waters while a few light carriers of the Carrier Division 3 or 4

had deployed to the Mandates or near Formosa. The only additional intercept of note was a DF bearing by Cavite of 30 degrees on *Akagi*'s call sign on 4 December in the noon hour (Tokyo), which placed the carrier near Kure.<sup>96</sup> Cavite's 5 December TESTM reported an odd incident, that it had heard the fleet call sign YU NE 8, which was not identified at the time. Why this call sign, which was in fact the First Air Fleet's call under the new system that became effective 1 December, had been used is unclear; it might have been an oversight or an intentional twist in the deception plan by the radio operator. The remainder of the reports and summaries during this last week before the attack had little different to offer. Station H on 3 December "believed the carriers are in Sasebo." On 4 December the carriers were plotted in the "vicinity of Kyushu," and on 5 December Hypo reported that "it is believed they [carriers] remain in the vicinity of Kyushu."<sup>97</sup> Layton's COMINT summaries during this period did, however, note how "silent" the carriers had become. The 2 December summary reported a "complete blank of information on the carriers," followed by "no information" on 3 December and by a 5 December report of "no traffic from the Commander Carriers." It seemed that the Japanese flattops had disappeared.<sup>98</sup> The "silence" of the carriers and the lack of traffic or information are relative statements. The "transmissions" that were believed to be emanating from the carriers had declined in volume, and it was to this situation that Layton's comments referred.

Yet the carriers' silence did not unduly disturb Layton, Rochefort, or Kimmel. Admiral Kimmel, in his statement to the 1946 congressional investigating committee, suggested the absence of Japanese carrier radio traffic after 1 December was "not [an] unusual condition since during the six months preceding Pearl Harbor when there were seven periods of similar uncertainty."<sup>99</sup> The fact that the carriers were not originating radio traffic, he added, did not mean that the carriers were on a secret mission.<sup>100</sup> In 1944, Rochefort stated before the Hart Inquiry, a wartime hearing on Pearl Harbor by the Navy, that while "there was great unease over the lack of [carrier] traffic . . . [,] the inability to locate more . . . carriers was not considered in itself, as a bad sign."<sup>101</sup> Layton added a technical nuance to this rationalization: "Radio silence would have been a 'give-off' if they had been in the traffic, but they were not in the traffic at all though the fact that the carriers were not addressed had led us to the belief erroneous as it was, that they were unconcerned and were remaining in home waters."<sup>102</sup> Layton also considered that silence might have indicated preparations for future operations.

Another possibility, according to testimony by Rochefort and Layton, was that the Japanese had been holding the carriers back because they could not afford to lose them in the initial fighting and would need them for the "decisive" battle.<sup>103</sup> That the Japanese had never before attempted such a large-scale radio silence was discussed at the time, but the implications were not addressed. The

few intercepts and less than a dozen DF bearings on various Japanese carriers placing them in home waters only reinforced the above impression of the disposition of the Japanese flattops.

Meanwhile, as the Striking Force moved closer to Hawaii, Japanese radio intelligence gathered up tidbits from American transmissions indicating that the deception was holding. On 4 December the Japanese intercepted an urgent, priority message from the commander of the 14th Naval District (Hawaii) to a number of ships and local commands. Although the Japanese analysts could not read the message, they believed that it might have been related to the sighting of an oil slick from a submarine. The Japanese had seen this type of message a month earlier. However, there was no evidence that the Striking Force had been compromised, and this reassurance was broadcast to it.<sup>104</sup> Through 6 December, Japanese radio intelligence detected no special alerts. Patrol planes continued to fly south of the islands, and a few had deployed to Midway and Johnston islands. Aboard *Akagi*, the Japanese team monitoring the Honolulu commercial radio stations detected no evidence of an alert in the American fleet. The path was clear.

On the morning of the attack on Pearl Harbor, Cavite took a bearing on what it believed was *Akagi* and reported that the flagship of the First Air Fleet was in the area of the Nansei Islands, south of Kyushu. This item was reported to Kimmel's command just as the first wave of torpedo and dive-bombers hit the anchored American fleet.<sup>105</sup>

In Washington, just about three hours before the attack, Secretary of State Cordell Hull met with Secretary of War Henry Stimson and Secretary of the Navy Frank Knox to review the latest Japanese diplomatic messages and intelligence. Among the papers in their folders was a report on the location of combat ships of nations around the world, including Japan. Compiled by the Office of Naval Intelligence, the report combined recent information that, in turn, primarily relied on radio intelligence reports from Hawaii and the Philippines. It placed all six carriers and the two battleships of the Striking Force in either Sasebo or Kure.<sup>106</sup>

About six hours later, after the Japanese attack, American naval radio monitors on Oahu intercepted the Kido Butai's first transmission since mid-November—a message from the commander of the First Air Fleet aboard *Akagi* to its supply train organizing a refueling rendezvous. But efforts to pursue the Japanese went awry, because the U.S. Navy's DF equipment could not discriminate between the transmission's "front and rear azimuth"—that is, whether the transmission had come from north or south of Pearl Harbor. Layton would say later that Kimmel eventually decided to send search planes to the south, because of earlier intelligence of possible carriers in the Marshall Islands.<sup>107</sup>

In early 1941, Admiral Yamamoto's chief of staff, Admiral Shigano Fukudome, speculated about the plan to attack Pearl Harbor: "But to carry the war to the threshold of the enemy's power, he must catch the fox unaware." The radio silence and deception plan supporting the Pearl Harbor Striking Force worked as well as any of the Japanese planners could have hoped. The American command at Pearl Harbor was caught totally unaware. Even the last-moment discovery of a Japanese minisubmarine could not crack the conventional assessment by the Americans that the Japanese navy was set in its prewar defensive posture. American naval intelligence held to this view largely because the Japanese radio silence and deception supplied seemingly valid intelligence that substantiated it.

The individual techniques of the denial and deception parts of the plan would never have worked as effectively had it not been for the complete change in Japanese strategy and the organization of the carrier force carried out under Admiral Yamamoto in early 1941. U.S. naval intelligence missed that change and clung to the opinion that Japan's navy would act as it had exercised over the previous decade—the carrier force would remain with the bulk of the Combined Fleet awaiting the American Navy's move across the Pacific.<sup>108</sup> In late 1941 the intelligence officers and analysts in Cavite, Pearl Harbor, and Washington interpreted the carriers' seeming inaction and radio silence, as well as the occasional intercepts and DF bearings of carrier transmissions, in that light—as indications that they were still in home waters, awaiting orders or preparing for the probable foray against Japan by the Pacific Fleet.

Even the fact that relatively few deceptive transmissions were intercepted by the Americans—a dozen at best—may have worked in favor of the Japanese. Such limited intelligence would not move the Americans from their conclusion that the carriers were still in Japanese waters. The impression the deceptive transmissions created moved right up the chain of American naval intelligence reporting—from field-site messages to fleet summaries to the estimates created in the intelligence and planning staffs of the Navy Department—and was presented to the leadership of the Roosevelt administration as late as the morning of the attack. In a sense, Joseph Rochefort was correct in that there was an element of "self-deception" here. The self-deception, though, was grounded in intelligence that seemed valid within the context of presumed Japanese strategy. The only problem for the Americans was that Yamamoto had changed the script.

In postwar testimony before the various Pearl Harbor hearings, Rochefort, Layton, and others suggested that they had not been certain at the time of Pearl Harbor about what the radio intelligence implied about the carriers' actions. Yet nowhere do their prewar reports reflect any question, doubt, or suspicion about the validity of any of the intercepts or bearings. If there was doubt or

uncertainty, it arose because the carriers were not heard for a few days. Layton and Rochefort later admitted that there had never been any sense that the carriers might be involved in a surprise attack. In any case, their conclusions about the location of the carriers in Japanese waters were accepted at Pacific Fleet Headquarters in Pearl Harbor and in the Chief of Naval Operations staff in Washington. In the weeks leading to 7 December, all levels of American naval intelligence unanimously reported to their seniors that the main Japanese carrier forces were at their bases in Japan.

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#### NOTES

1. David C. Evans and Mark R. Peattie, *Kaigun: Strategy, Tactics, and Technology in the Imperial Japanese Navy, 1887–1941* (Annapolis, Md.: Naval Institute Press, 1997), pp. 129–32.
2. Principally Robert B. Stinnett, *Day of Deceit: The Truth about FDR and Pearl Harbor* (New York: Free Press, 1999), pp. 43–47, 182–85, inter alia; Timothy Wilford, “Watching the North Pacific: British and Commonwealth Intelligence before Pearl Harbor,” *Intelligence and National Security* 17, no. 4 (Winter 2002), pp. 141–50. A variant of this revisionist thesis is that the British were reading JN-25B at the time and this exploitation enabled them to track the Kido Butai across the Pacific. This claim is presented in James Rusbridgers and Eric Nave, *Betrayed at Pearl Harbor: How Churchill Lured Roosevelt into World War II* (New York: Summit Books, 1991), pp. 133–34, inter alia.
3. See Philip H. Jacobsen, “Radio Silence and Radio Deception: Secrecy Insurance for the Pearl Harbor Strike Force,” *Intelligence and National Security* 19, no. 4 (Winter 2004), pp. 695–718; “Pearl Harbor: Who Deceived Whom?” *Naval History* (December 2003), pp. 27–32, and “Radio Silence of the Pearl Harbor Strike Force Confirmed Again: The Saga of Secret Message Serial (SMS) Numbers,” *Cryptologia* 31, no. 3 (July 2007), pp. 223–32; Stephen Budiansky, “Closing the Book on Pearl Harbor,” *Cryptologia* 24, no. 2 (April 2000), pp. 119–30; and Marty Bollinger, “Did a Soviet Merchant Ship Encounter the Pearl Harbor Strike Force?” *Naval War College Review* 60, no. 4 (Autumn 2007).
4. U.S. Congress, *Hearings before the Joint Committee on the Investigation of the Pearl Harbor Attack*, 79th Cong. (Washington, D.C.: U.S. Government Printing Office, 1946) [hereafter PHH], part 36, p. 37, and pp. 128–30; Edwin T. Layton, *And I Was There: Pearl Harbor and Midway—Breaking the Secrets* (New York: William Morrow, 1985), pp. 228–29.
5. American naval planning took its cues from plans at different echelons of command, from RAINBOW FIVE to War Plan PACIFIC-46. See Edward S. Miller, *War Plan Orange: The U.S. Strategy to Defeat Japan, 1897–1945* (Annapolis, Md.: Naval Institute Press, 1991), pp. 286–312.
6. Evans and Peattie, *Kaigun*, pp. 285–91; Gordon W. Prange, *At Dawn We Slept: The Untold Story of Pearl Harbor* (New York: McGraw-Hill, 1981), pp. 10–15; Donald M. Goldstein and Katherine V. Dillon, eds., *The Pearl Harbor Papers: Inside the Japanese Plans* (Dulles, Va.: Brassey’s, 2000) [hereafter PHP], pp. 5–7.
7. Evans and Peattie, *Kaigun*, pp. 286–91, 471–77; Prange, *At Dawn We Slept*, pp. 15–19.
8. See U.S. National Security Agency [hereafter NSA], *Report on the Japanese Grand Fleet Maneuvers, May–June 1930*, Special Research History [SRH] 222 (Fort George G. Meade, Md.: OP-20, 12 January 1983), *Various Reports on Japanese Grand Fleet Maneuvers, June–August 1933*, SRH-223 (13 January 1983), and *Various Reports on Japanese Grand Fleet Maneuvers (July–September 1935)*, SRH-225 (18 January 1983).
9. PHH, part 32, p. 582.
10. Lt. Col. Angelo N. Caravaggio, Canadian Forces, “The Attack at Taranto,” *Naval War College Review* 59, no. 3 (Summer 2006).

11. Evans and Peattie, *Kaigun*, p. 349.
12. NSA, *Traffic Intelligence Summaries with Comments by CINCPAC War Plans/Fleet Intelligence Sections, 16 July 1941—31 December 1941*, SRMN-012 (Fort George G. Meade, Md.: 14th Naval District Combat Intelligence Unit, 6 September 1985), part 1, Communications Intelligence Summary, 3 November 1941, p. 196.
13. Evans and Peattie, *Kaigun*, pp. 84, 428.
14. Prange, *At Dawn We Slept*, pp. 166–67. This incident is also reported in Headquarters, Army Forces Far East, *Operational History of Naval Communications, December 1941—August 1945* (Washington, D.C.: Office of the Chief of Military History, Department of the Army, 1953), pp. 68–69. This latter version places the incident in January 1941, when the Japanese dispatched naval forces to pressure both Thailand and French Indochina to end the border conflict in eastern Cambodia.
15. For more on the concurrent British effort and sharing of information with the Americans see H. L. Shaw, *History of HMS Anderson* (1946), chap. 3, The National Archives: Public Record Office, HW/4/25.
16. PHH, part 26, p. 223.
17. There were other U.S. naval DF stations along the U.S. west coast, assigned to the 12th and 13th naval districts. These stations were tasked primarily with locating Japanese merchant ships and the occasional opportunistic Japanese naval transmission.
18. “Translations of Intercepted Enemy Radio Traffic and Miscellaneous World War II Documentation,” National Archives and Records Administration, Washington, D.C. [hereafter NARA], record group [RG] 38, entry 344, box 1356, “Akagi.”
19. *Ibid.*
20. PHH, part 29, p. 2362.
21. “GY-1 History,” NARA, RG 38, entry 1040, box 115, folder 5750/198, “OP-20-GY History”; “History of the Able and Baker Solutions,” NARA, RG 38, entry 1040, box 116, folder 5750/202, “History of GYP-1,” pp. 25–26. For a good summary of these files see Stephen Budiansky, “Too Late for Pearl Harbor,” U.S. Naval Institute *Proceedings* (December 1999), pp. 47–51. The tally of JN-25B (AN-1) code recoveries (vice additives used to encrypt code groups) from a report of December 1941 shows that while 2,380 groups were recovered during the month of December 1941, the total recoveries as of 31 December 1941 were 6,180, indicating that a little fewer than four thousand groups could be read prior to Pearl Harbor.
22. Thomas G. Mahnken, *Uncovering Ways of War: U.S. Intelligence and Foreign Military Innovation, 1918–1941* (Ithaca, N.Y.: Cornell Univ. Press, 2002), pp. 81–82. Also see “Tokyo to Washington, 17 November 1941,” 711.94/2447, PHH, part 14, pp. 1058–60, in which Ambassador Grew reports restrictions on attachés.
23. Japanese Naval Translations [SRN] 117693, NARA, RG 457, entry 9014.
24. PHP, pp. 149, 181.
25. PHH, part 36, p. 14.
26. Japanese navy numeral-kana-kana calls were generally referred to as “drill calls,” being used in fleet maneuvers, but OP-20-GT (Traffic Analysis Section) preferred the term “tactical calls.” See “GZ” comments to Japanese navy translation GZ 0107Z, 12/04/1945, NARA, RG 457, entry 9032, box 1457, “Z Translations.”
27. SRMN-012, 6 November 1941, p. 199.
28. PHH, part 10, p. 4893.
29. SRN 115957, NARA, RG 457, entry 9014.
30. SRNs 117143–4 and SRN 117089, issued 3 April and 5 April 1946, NARA, RG 457, entry 9014.
31. Headquarters, Army Forces Far East, *Operational History of Naval Communications*, pp. 190–91.
32. “Navy Wireless Procedure Rules,” 1940, NARA, RG 457, entry 9032, box 203, folder 991.
33. Headquarters, Army Forces Far East, *Operational History of Naval Communications*, p. 41.
34. NARA, RG 38, Commander Naval Security Group [CNSG] Library, box 94, folder 5750/37.
35. PHH, part 13, JCC exhibit 8, p. 717.
36. PHP, p. 296.

37. David Kahn, *The Codebreakers* (New York: Scribner's, 1996), p. 33.
38. PHP, p. 296.
39. During the Battle of the Coral Sea, U.S. radio monitors detected the carrier *Shokaku* transmitting a homing beacon and thereby located the ship. See CINCPAC messages 071852 and 071031, 7 May 1942. Author's personal collection.
40. Prange, *At Dawn We Slept*, p. 227.
41. PHP, pp. 135, 238.
42. *Ibid.*, pp. 223, 240.
43. PHH, part 10, p. 4906.
44. *Ibid.*, part 6, pp. 2522–23, for Admiral Kimmel's take on the silent Japanese carrier force.
45. PHP, p. 143; PHH, part 13, p. 715.
46. SRN 116602, NARA, RG 457, entry 9014.
47. SRN 115428, NARA, RG 457, entry 9014.
48. "Naval Dummy Messages and Jamming Rules," TR/PJ/491/NID 15.9.45, NARA, RG 457, entry 9032, folder 1007.
49. Layton, *And I Was There*, p. 227; "Black Magic in Communications," CSP 1494(A), 15 April 1942, NARA, RG 38, entry 1029 (Crane Library), box 66.
50. See "CI Activities of the Japanese Navy," NARA, RG 457, entry 9032, box 1343; and "Japanese Analysis of US Message Headings—November 1941," NARA, RG 457, entry 9032, box 151, folder 646.
51. "PH Investigations: Interrogation Reports of Japanese Personnel, Interrogation 10, 28 November 1945, Captain Minoru Genda," NARA, RG 38, CNSG Library, box 167, folder 5830/78.
52. SRN 116602; PHH, part 35, p. 66.
53. Prange, *At Dawn We Slept*, p. 340; Cavite TESTM 141511, NARA, RG 38, box 15, folder 2000/1, "Inactive Stations," "SI Genser" message files.
54. Prange, *At Dawn We Slept*, p. 341.
55. PHP, pp. 67–68.
56. PHH, part 35, p. 70.
57. *Ibid.*, p. 69.
58. *Ibid.*, p. 71.
59. American naval intelligence confused the Japanese 5th Carrier Division with the 4th. This error was due to lack of current intelligence on the status of the carriers *Shokaku* and *Zuikaku*.
60. PHH, part 35, p. 71.
61. SRN 115397, NARA, RG 457, entry 9014.
62. PHH, part 35, p. 71.
63. Prange, *At Dawn We Slept*, p. 348.
64. SRNs 15678 and 117814, NARA, RG 457, entry 9014.
65. Philip Jacobsen, "No RDF on the Japanese Strike Force: No Conspiracy!" *International Journal of Intelligence and Counterintelligence* 18, no. 1 (Spring 2005), pp. 142–49.
66. Prange, *At Dawn We Slept*, pp. 366–68.
67. Jacobsen, "No RDF on the Japanese Strike Force."
68. PHH, part 35, p. 74.
69. Prange, *At Dawn We Slept*, pp. 376–79.
70. Jacobsen, "Pearl Harbor," p. 30.
71. PHH, part 35, p. 75.
72. *Ibid.*
73. PHH, part 15, pp. 1882–83.
74. PHP, p. 105.
75. PHH, part 37, p. 1060.
76. "Ops Logs—Stations H, M, S, W & J, 24 November—6 December 1941," NARA, RG 38, CNSG Library, box 164, folder 5830/58, "Station 'H' Chronology."
77. PHH, part 35, p. 76.
78. TESTM 281511, NARA, RG 38, box 15, folder 2000/1, "Inactive Stations," "SI Genser" message files.
79. "Ops Logs—Stations H, M, S, W & J, 24 November—6 December 1941."
80. SRMN-012, 27 November, p. 224.
81. PHH, part 15, pp. 1889–90.
82. "Station 'H' Chronology," NARA, RG 38.
83. PHH, part 36, pp. 76–77.
84. *Ibid.*, part 35, pp. 77–78.
85. "Station 'H' Chronology."
86. PHH, part 35, p. 78.
87. *Ibid.*, part 36, p. 36.

88. Ibid., part 10, pp. 4835–36.
89. Layton, *And I Was There*, p. 227.
90. PHH, part 35, p. 79.
91. Ibid.
92. PHH, part 16, p. 2359.
93. Ibid., part 26, pp. 232–33.
94. Ibid., part 15, pp. 1895–96.
95. “1 December Information Summary,” NARA, RG 80, entry 167, box 4.
96. TESTM 1544, NARA, RG 38, box 15, “Inactive Stations.”
97. “Station ‘H’ Chronologies,” 2, 3, and 5 December 1941, NARA, RG 38, CNSG Library, box 164.
98. SRMN-012, pp. 230–34.
99. U.S. Congress, *Investigation of the Pearl Harbor Attack: Report of the Joint Committee on the Investigation of the Pearl Harbor Attack* (Washington, D.C.: U.S. Government Printing Office, 20 July 1946), pp. 155–57; also PHH, part 6, p. 2523.
100. PHH, part 10, pp. 4839–40, and part 15, pp. 1895–96.
101. Ibid., part 26, pp. 220–23.
102. Ibid., part 10, p. 4903.
103. Ibid., part 26, p. 235; part 10, p. 4840; and part 32, p. 582.
104. PHP, p. 226.
105. Dispatch, COM 16 to OPNAV, info CINCPAC, 8 December 1941, 08033, NARA, RG 38, entry 1030, box 161; also PHH, part 6, p. 2522.
106. “Locations of U.S. Naval Forces in the Atlantic, Pacific, and Far East: Also Foreign Naval Forces in the Pacific and Far East: As of 7 Dec. 1941,” PHH, part 20, pp. 4121–31.
107. PHH, part 10, pp. 4906–907.
108. “War Plan Pacific 46,” NARA, RG 80, Pearl Harbor Liaison Office, entry 167EE, box 120, Exhibit 114, p. 21.