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A New View of Pearl Harbor: The U.S. Navy and Communications Intelligence

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"...the aspect of the Pearl Harbor disaster which is really surprising is that so many people failed to do either the obvious or the sensible things."

Washington Star, 1 September 1945

Could U.S. Naval Communications Intelligence (Comint) have predicted the attack on Pearl Harbor? Old intercepted Japanese Navy messages, discovered only recently, show that Navy communications analysts might have predicted the attack if they had been able to decrypt and translate those messages at the time. Why they could not and what the messages would have revealed to them is the subject of this article.

In 1940–41 the Japanese Navy employed simultaneously at least seven cryptosystems in its radio communications, including a fleet general purpose system introduced in 1940 which was designated by U.S. Navy cryptanalysts as JN-25. At the time of Pearl Harbor, none of these systems was consistently being exploited by U. S. Navy cryptanalysts due to manpower shortages and higher priorities. Unfortunately, most of the U.S. Navy cryptanalytic effort and linguistic capability were devoted to another Japanese cryptographic problem: recovering the daily cipher, translating the texts, and reading Japanese diplomatic messages. Thus, it was not radio silence or Japanese deception but lack of cryptanalytic resources which led to U.S. ignorance concerning the location of the Japanese Pearl Harbor Strike Force and to the absence of any Comint from messages concerning the forces which struck Malaya and the Philippines. In order to more clearly understand how the U.S. Navy found itself in this position despite planning for years for war with Japan, a brief review of the evolution of the Navy's communications intelligence organization (OP-20-G) is in order.

Between the two world wars, naval communications policymakers ignored the underlying intelligence value of intercepted foreign message traffic. Instead cryptanalysts were directed by OP-20-G to search for unique technical cryptographic features of codes and ciphers which might later be refined and employed by Navy cryptographers to improve U.S. communication security (Comsec). This practice lasted until 1940–41 when the world situation forced the Navy to reevaluate its approach to communications analysis. It was not until February 1942, however, that Captain Carl F. Holden, the Director of Naval Communications (OP-20), completely divested OP-20-G of Comsec responsibilities. Coupled with a reluctance to hire civilian trainees, this perception of the role of cryptanalysis in intelligence production seriously delayed the training of sufficient manpower to deal with a cryptanalytic work load which increased exponentially after 1939. Ultimately, in 1941, the interception and decryption of the messages between Japanese Ambassador Kichisaburu Nomura and the Japanese Foreign Ministry clearly exposed the value of attempting to read foreign message traffic.

This is not meant to minimize the value of the pre-Pearl Harbor efforts of Navy communications analysts. The efforts of the few cryptanalysts allotted to Japanese naval systems made possible the successes which came in early 1942. Even without the messages pertaining to the Japanese fleet, which the Navy was forced to put aside

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because they could not be exploited, the magnitude of the information pertaining to the Japanese 2nd, 3rd, and 4th Fleets and the Japanese 11th Air Fleet was overwhelming. The intimate details concerning strengths and intentions reported daily by Hawaii and Corregidor, however, were based not on the text of messages but on judgments drawn from analysis of Japanese Navy communications procedures, patterns, and practices – traffic analysis (T/A). Ironically the intelligence derived from traffic analysis was not accepted by the very commanders in whose service it had been developed. During the last half of 1941 intelligence from the Pacific based on traffic analysis was treated more as an elaborate rumor than trustworthy intelligence material. Commanders at the theater level and in Washington were not prepared to exploit the intelligence provided by this source, particularly when the message texts could not be read. In brief, a shortage of cryptanalysts and Japanese linguists merged with the problem of misplaced priorities and interservice rivalry to place the major focus of the Navy's cryptanalytic and linguistic efforts in 1941 on Japanese diplomatic messages and thus postpone, with fatal consequences, a vital all-out effort on Japanese Navy cryptosystems.

The U.S. Navy's communications intelligence (Comint) unit between 1924 and 1941 was a small but remarkable organization. Operating under the Director of Naval Communication it extracted both radio and traffic intelligence from intercepted foreign military, commercial, and diplomatic communications.[1] It was plagued from its inception by shortages in money, manpower, and equipment; the total absence of a secure dedicated communications system; and little real support from higher command authorities. Nevertheless, there always seemed to be enough support from a few senior individuals who could see the military, political, and even the international implications of effective cryptography and successful cryptanalysis to keep the operation going.

For the first seven years of its existence the future for an expanding Navy Comint effort in the Pacific looked relatively promising. Intercept stations were established at Shanghai (Station A, 1924); Guam (Station B, 1929); Olongapo, Philippines (Station C, 1930); Peking (1931); and Wailupe, Hawaii (1931). Two other stations were planned in the 13th Naval District. A cryptanalytic unit was established in Washington in January 1924. It had a complement of two: Lieutenant Laurance F. Safford and Agnes Meyer, both of whom were cryptanalysts/cryptographers. Their primary goal was to develop cryptographic systems for the U.S. Navy which would avoid the weaknesses they observed in foreign systems.

Beginning as a totally decentralized effort loosely managed from Washington by Safford, collection and local exploitation of plain text was controlled by Fleet and Naval District Commanders while Washington retained control of the cryptanalytic capability. With the exception of closing the sites at Peking and Shanghai in 1935 and 1940, respectively, the geographic posture of Navy Comint in the Pacific retained the modest form outlined above until the end of 1941. By 1935, the cryptanalytic effort had expanded to two officers and ten civilians. Most of the civilians were clerical assistants, however, not cryptanalysts.

Progress in the training of intercept operators and cryptanalysts was evident during the period 1926–41. In 1926 Ensign Joseph N. Wenger was the first officer to undergo training in a cryptanalysis "short course" in Washington. Officer training in cryptanalysis consisted of on-the-job training and semiformal instruction conducted by

1. For many years communications intelligence in the Navy was also known as traffic intelligence if derived from traffic analysis and radio intelligence when derived from decrypted messages.

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Safford and Meyer. In 1928 the Navy established a school for enlisted Navy and Marine Corps intercept operators at the Navy Department in Washington, D.C. A classroom and eight intercept positions were erected on the roof of "Main Navy," probably as much for the sake of privacy as for the lack of space. The first class began on 1 October 1928. Out of twenty students, seven finished. All seven were sent to Guam to open that station in 1929. Two classes, number 5 and number 15, were made up entirely of U.S. Marines. The school operated until February 1941. Its objective was to train carefully selected military radio operators in specialized radio communications techniques, particularly Japanese intercept, traffic analysis, and simple cryptanalysis. Understandably, student graduates later became widely known as the "On The Roof Gang."[2]

In addition to its normal cryptanalytic efforts in the 1930s, OP-20-G regularly participated with the Asiatic Fleet and the 16th Naval District in following Japanese Fleet Maneuvers by intercepting Japanese Navy communications. The analytic results demonstrated vividly the strategic and tactical values of communication intelligence. The stations involved included Guam, Station C, Peking, USS *Goldstar* (AG-12), and USS *Augusta* (Flagship Asiatic Fleet). Both *Augusta* and *Goldstar* normally were mobile detachments taken from shore stations.

Collectively, these stations intercepted the communications of Japanese ships at sea and from participating Japanese shore stations. The Japanese maneuver activity, at its height, typically extended from fleet anchorages in Japan to Saipan in the Marianas and the Palau Islands east of Mindanao. The Comint reports prepared by personnel at the sites were later consolidated in Washington. U.S. analysts saw the 1930 Japanese Maneuver, for example, as a rehearsal for an invasion of Manchuria. Japan invaded Manchuria the following year.

Japanese decrypts and traffic analysis of Japanese message traffic also revealed Japanese plans for the complete mobilization of the Japanese Fleet, a comprehensive knowledge on the part of the Japanese of the current U.S. War Plan against the Japanese Fleet, and the unpleasant fact that the Japanese Navy was superior in strength to the U.S. Asiatic Fleet. The 1933 report revealed details of Japanese plans to defend the western Pacific from a counterattacking U.S. Fleet, actual ship movements, Japanese war plans vis-à-vis China, and a myriad of facts and details about air and sea deployment, tactics, communications practices and procedures, order of battle, and individual maneuver objectives.[3]

Admiral Frank B. Upham, Commander in Chief, Asiatic Fleet (CINCAF), was particularly impressed by the efforts of the communications analysts in 1933. Their work was based entirely on traffic analysis since the Japanese Navy's operational code (the Blue Book) had not been recovered by the time of the exercises. Not only did Upham visit Olongapo to personally compliment the men, telling them that one day their work would be of tremendous importance to the nation, but he prepared an equally unique endorsement for the report. His endorsement, forwarded to Admiral William H. Standley, Chief of Naval Operations (CNO), on 20 June 1934, contained several significant "Comint discoveries" including one entitled "Indications of Approaching Hostilities." This prophetic paragraph predicted that "any attack [by Japan] would be made without previous declaration of war or other intentional warning." In keeping with its origins in

2. Dedication of the Memorial to the OTRG (U), Cryptologic History Collection Series III.H.26, NSA.
3. SRH 222 223 224 225, Various Reports on Japanese Grand Fleet Maneuvers 1930, 1933, 1934, 1935, Records of the National Security Agency, Record Group 457, National Archives. Hereinafter cited as RG 457.

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traffic analysis, another finding stated that "preparations would be noticeable in increased radio activity." Admiral Upham also recommended a plan for observing movements of Japanese merchant ships. He believed Japan would try to save as many of these vessels as possible by withdrawing them to Japan prior to any outbreak of war. Ironically, the U.S. Navy did detect such a movement in November 1941.[4] Unfortunately, by the time of Pearl Harbor, Admiral Upham was dead and his report and recommendations lay forgotten in the files.

Another important contribution to the U.S. Navy's effort against Japan occurred in 1936 when cryptanalysts at OP-20-G read an intercepted message giving the results of the Japanese battleship *Nagato*'s postmodernization trials. This message greatly alarmed U.S. officials because it contained the *Nagato*'s new top speed which was in excess of 26 knots, the same as four new *Kongo*-class battle cruisers and considerably in excess of the 24-knot top speed currently planned for the redesigned U.S. battleships *North Carolina* and *Washington*. By inference the *Nagato*'s speed would be the prospective speed for other battleships being modernized and the minimum speed for new battleships of the *Yamato* class. As a direct result of the knowledge gained from this message, U.S. naval officials raised the required speed of modernized U.S. battleships to 27 knots and of new vessels to 28 knots.[5]

As noted earlier one critical function of the Navy's Comint effort, code breaking, was not decentralized. Due to OP-20-G management perceptions, the dearth of cryptanalysts, and a lack of supporting equipment, this function was performed exclusively in Washington until after the attack on Pearl Harbor. Whenever circumstances dictated, code recoveries were sent to the appropriate field station as they were made in Washington. To be useful to a field commander, however, exploitation of message traffic had to be accomplished at or near his headquarters or at a point linked to his headquarters by adequate and reliable communications. The primitive U.S. Navy radio communications, particularly outside the continental U.S., and the centralization of the cryptanalytic function precluded these developments. Therefore, even before they broke down completely when war began, these weak links in the cryptologic schema proved to be major liabilities.

These liabilities were never more evident than when the Japanese Navy began to introduce successively more sophisticated codes in 1938, a move which culminated in 1940 with a new general purpose code, JN-25. The JN-25 system required three books to operate: a code book, a book of random numbers, and an instruction book. The original code book contained some 30,000 five-digit numbers which represented Kana particles, numbers, place names, and myriad other meanings. The book of random numbers consisted of 300 pages each of which contained 100 numbers. These numbers were used as additives – they were added to the code groups digit by digit without the carryover used in customary addition – thus enciphering the code. The instruction book contained the rules for using the aperiodic cipher. The number of each page and the number of the line on the page where the selection of additives began served as "keys" which were included in each message at the beginning and end. This code subsequently became the most widely distributed and extensively used of all of Japan's naval cryptosystems.[6]

4. Jack S. Holtwick M/S, "Naval Security Group History to World War II," p. 131, SRH 355, RG 457. See also Gordon Prange with Donald M. Goldstein and Katherine V. Dillon, *Pearl Harbor, The Verdict of History* (New York: McGraw-Hill, 1986), p. 134. Hereinafter cited as Prange, *Verdict of History*. On 4 November 1941 an OPNAV message reported this fact to CINCPAC, CINCAF, and others.
5. L.F. Safford, "History of Radio Intelligence," 15 November 1943, SRH 305, RG 457.
6. Edwin T. Layton, *And I Was There* (New York: William Morrow and Co. Inc., 1985) p. 77.

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In February 1939, only a few months after discovering the changes in Japanese naval communications, another shock struck the U.S. cryptanalytic community when the Japanese introduced the Type B machine on their high-level diplomatic circuits. Known as the "Purple" machine, it was 18 months before the efforts of William Friedman's staff at the U.S. Army's Signal Intelligence Service and the Navy Yard Machine Shop succeeded in producing full translations of intercepted diplomatic messages and the first prototype deciphering machine. By then, however, Army and Navy officials were competing for high-level attention within the Roosevelt administration. This competition ultimately led to formal agreements whereby the Navy and Army processed and distributed decrypted Japanese diplomatic messages to the White House on odd and even days, respectively. Though of some value, the processing agreement still produced an overwhelming workload for Navy cryptanalysts in Washington and siphoned off naval talent that might have been applied to Japanese Navy traffic.

The actual reading of current Japanese Navy messages in the general purpose code before Pearl Harbor was not to be. In fact, U.S. cryptanalysis of most Japanese Navy ciphers had outstripped the U.S. capability for code recoveries. That is, even though they understood a system and could reduce messages to the real code groups, OP-20-G and Corregidor had not recovered enough of the basic code group values. Therefore, decrypts could not be produced in time to play a part in U.S. policy or military decisions in 1941. This meant that thousands of intercepted Japanese Navy messages in JN-25 as well as other systems were not exploited.

In 1941 the OP-20-G policy of ignoring the underlying intelligence value of foreign message traffic proved costly indeed because communications analysts at Hawaii, Corregidor, and Washington never discovered the vital information contained in the untranslated messages. We now know that messages encrypted in JN-25, for example, contained important details concerning the existence, organization, objective, and even the whereabouts of the Japanese First Air Fleet, the Pearl Harbor Strike Force. Hidden in these messages was the full magnitude of the enterprise planned for Pearl Harbor by the Japanese. Had these messages been read on a current basis it is possible, even probable, given the analytic skills so evident in these centers, that the early course of the war would have been significantly altered.

Despite not being able to read the Japanese Navy's codes between July and December 1941, the Comint research unit in Hawaii under Commander Joseph J. Rochefort prepared daily Comint summaries for Admiral Husband E. Kimmel, Commander in Chief Pacific Fleet (CINCPAC). They were based on analysis of local collection and to some extent on technical and intelligence information from Corregidor. Hawaii's analytic contributions to the summaries were based on traffic analysis of message externals and direction finding results. Fleet Intelligence Officer, Lieutenant Commander Edwin T. Layton characterized these summaries after the war as containing "no hard intelligence."[7] This is a harsh judgment. It is true that they contained no Japanese message texts. Nevertheless, the individual summaries constituted the substance of Layton's daily reports to Kimmel. Collectively they revealed a wealth of information concerning Japanese naval activities particularly those of the 2nd, 3rd, and 4th Fleets and the 11th

7. U. S. Congress, Intelligence Reports by Pacific Fleet Intelligence Officer, *Pearl Harbor Attack Hearings before the Joint Committee on the Investigation of the Pearl Harbor Attack*, 79th Congress, part 17, p. 2643. Hereinafter cited as Pearl Harbor Hearings.

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Air Fleet underway in the Mandates, on the islands of Hainan and Taiwan, and elsewhere along the Chinese coast.

In many respects Hawaii's efforts and achievements in 1941 were similar to what had been accomplished with traffic analysis against the Japanese Imperial Fleet Maneuvers in the 1930s. The daily summaries clearly showed that Lieutenant Thomas A. Huckins and Lieutenant John A. Williams, who headed the traffic analysis unit, had solved both the strategic and tactical Japanese Naval communications structures. They understood the callsign generation system and were quickly able to reestablish order of battle data after routine callsign changes. This insight permitted unit identifications to the squadron level in ground-based air units and destroyers. It also allowed identifications to the individual warship level in battleships, cruisers, and carriers.[8] Unfortunately, the capability to exploit even these features of Japanese Navy communications ended about three weeks prior to the attack on Pearl Harbor when callsigns and callup and addressing procedures changed abruptly. Throughout the period U. S. analysts were also able to use their radio direction finding capability to produce unique information as well as to support evidence from traffic analysis. Hawaii was able to identify the Japanese Navy mainline shore establishment from Imperial and Combined Fleet Headquarters to principal line and staff subordinates within each of the fleets in both home and deployed locations. Based on the content of their daily summaries it is conceivable that communications being intercepted by Hawaii (Heeia) in 1941 encompassed the entire Japanese Navy communications system ranging from Japan to South China, to the Mandate Islands, and to the connecting ocean area.[9]

As early as July 1941, traffic intelligence reports prepared daily for Admiral Claude C. Bloch, Commandant, 14th Naval District, and Admiral Kimmel reflected Japanese air and naval concentrations "awaiting the assumed Southern operations." In fact, from July until 6 December, summaries from Hawaii made frequent allusions to the "formation of Task Forces," and forthcoming "hostile actions," and called attention to similarities between current activities and those which preceded earlier Japanese naval and military campaigns in South China and Indochina. Bearing in mind that Hawaii could not read the message texts, the accuracy of these reports was truly remarkable.[10]

While the United States attempted to maintain a level of strategic equality with Japan in the Pacific by offsetting losses of capital ships sent to the Atlantic with a buildup of long-range air power, the Japanese government formulated plans for amphibious warfare in the Pacific. The Japanese war plan for the Western Pacific campaigns began to unfold well before 10 November 1941, when General Count Hisaichi Terauchi, commanding the Southern Army, and Admiral Isoroku Yamamoto, commanding the

8. SRMN 012, RG 457. See also Prange, Verdict of History, pp. 443-53 which cites Kimmel's testimony at the Congressional Hearings when he said he had no reason to suspect the carriers had been converted into a "lost fleet" during November. In fact, before a 17 November callsign change it was clear that the carriers had been assigned to the 1st Air Fleet. On 3 November, COM-14 notes a "new" addressee reading 1st Air Fleet but unreadable messages contained this address as early as 4 October. See SRN 117453, RG 457.

9. Pearl Harbor Hearings, part 17, p. 2643, Daily COM-14 RI Summaries. See also SRMN 012, RG 457.

10. See SRMN 012: COM-14 Daily Comint Summaries for 16 July, 31 July, 28 September, 2 October, 16 October, 21 October, 22 October, 23 October, 6 November, 21 November, 29 November, and 2 December, RG 457. See also footnote 1 in Prange, *Verdict of History*, p. 446 which refers to Kimmel's testimony before Congress (Part 6 beginning on p. 249). Clearly reflecting Layton's assessment of traffic analysis and D/F as sources, Kimmel describes information thus derived as "open to serious doubts" unless supported by readable messages. Examples cited, however, show how closely he was following T/A reports from both COM-14 and COM-16.

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Combined Fleet, formally concluded a "Central Agreement" which outlined an ambitious scheme of Japanese conquests.[11] According to the agreement, the first operational stage was divided into three phases: (1) attacks on the Philippines, Malaya, Borneo, Celebes, Timor, Sumatra, and Rabaul (also Guam, Wake, and Makin); (2) capture of Java and the invasion of southern Burma and; (3) conquest of all Burma (see fig. 1). The Japanese then envisioned pacification of the area, the creation of a Greater East Asia Co-Prosperity Sphere, and probably a defensive struggle against the United States to maintain their hold on the region. A second operational stage also covered by the agreement was to "occupy or destroy as speedily as operational conditions permit" eastern New Guinea, New Britain, Fiji, Samoa, the Aleutians, Midway, and "strategic points in the Australian area" (see fig. 2). This is as far as Japanese planning went.[12]

The Japanese Navy, which was to execute an attack on Pearl Harbor and provide cover and escort for the remainder of these operations, had been preparing for its various roles for several weeks. It consisted of 10 battleships, 6 fleet carriers, 4 light fleet carriers, 18 heavy and 20 light cruisers, 112 destroyers and 65 submarines. In addition, Japan had large numbers of auxiliary vessels, tenders, minesweepers, and escorts. The fleet was organized into nine Naval Stations in the homeland area, the China Area Fleet and the Combined Fleet. The Combined Fleet, which consisted of five Mobile Fleets (1st, 2nd, 6th Fleets, 1st Air Fleet, 11th Air Fleet) and three localized fleets (3rd, 4th, and 5th Fleets), was destined to carry the burden of the southern strategy as well as to conduct the strike on Pearl Harbor.[13]

In the opening campaigns of the first phase the Combined Fleet was divided into four Task Forces. Force 1 – a carrier strike force consisting of all six fleet carriers, two battleships, and three cruisers under Admiral Chuichi Nagumo – was to conduct a separate attack on Pearl Harbor.[14] Force 2 – the South Seas Force (4th Fleet), extensively reinforced with land-based air units from Japan and submarines from the 6th Fleet, under Admiral Shigeyoshi Inoue – was to seize Rabaul, Wake, Guam, and Makin using a reinforced infantry regiment of 5,000 men (the South Seas Detachment). Force 3 – the Southern Force consisting of units from the 2nd and 3rd Fleets, the 11th Air Fleet, and the China Area Fleet under Admiral Nobutake Kondo, Commander in Chief, 2nd Fleet, and the Southern Army under General Count Hisaichi Terauchi – was to attack the Philippines, Thailand, and Malaya (the Kra Peninsula and Singapore). It was to follow this up with attacks on the Netherlands East Indies and Burma.[15] In addition to providing escort and cover for the Malay/Thailand invasion, the role of the 2nd Fleet included being the Fourth "Distant Cover Force" for the forces invading the Philippines. Command of Naval Forces directly covering invasion of the Philippines was given to Commander in Chief, 3rd Fleet, Vice Admiral Sankichi Takahashi.[16]

Details of the formation, training, and assembling of each of these Japanese naval elements, except for the Pearl Harbor Attack Force, and the supporting Japanese air

11. Samuel Elliot Morison, *The Rising Sun in the Pacific 1931 – April 1942*, Vol. III (Boston: Little, Brown and Co., 1975), p. 71.
12. John B. Lundstrom, *The First South Pacific Campaign; Pacific Fleet Strategy Dec 1941–June 1942* (Annapolis: Naval Institute Press, 1976), pp. 8–11. See also Mitsuo Fuchida and Masatake Okumiya, *Midway, the Battle that Doomed Japan* (Annapolis: U.S. Naval Institute Press, 1955), pp. 48–63.
13. Ibid.
14. On or about 5 November 1941, Combined Fleet Operation Order #1 revealed Pearl Harbor as the Strike Force objective. Gordon W. Prange, *At Dawn We Slept* (New York: McGraw-Hill, 1981), pp. 326–33.
15. H. P. Willmott, *Empire in the Balance* (Annapolis: Naval Institute Press, 1982), pp. 80–82.
16. Morison, Vol. III, p. 161.

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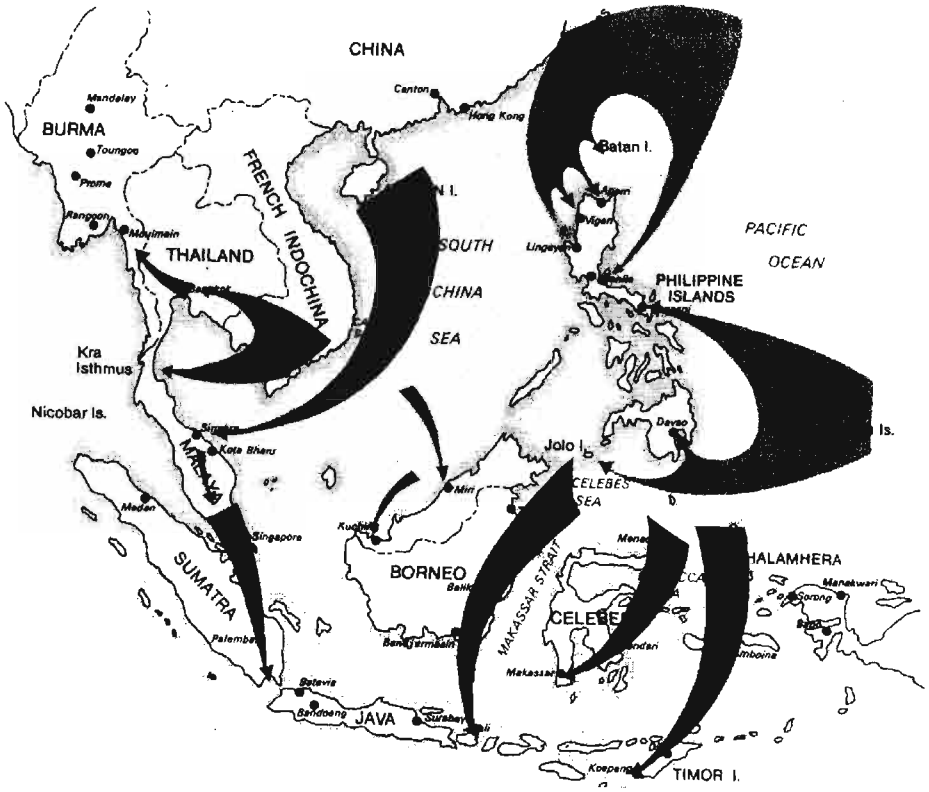

Fig. 1

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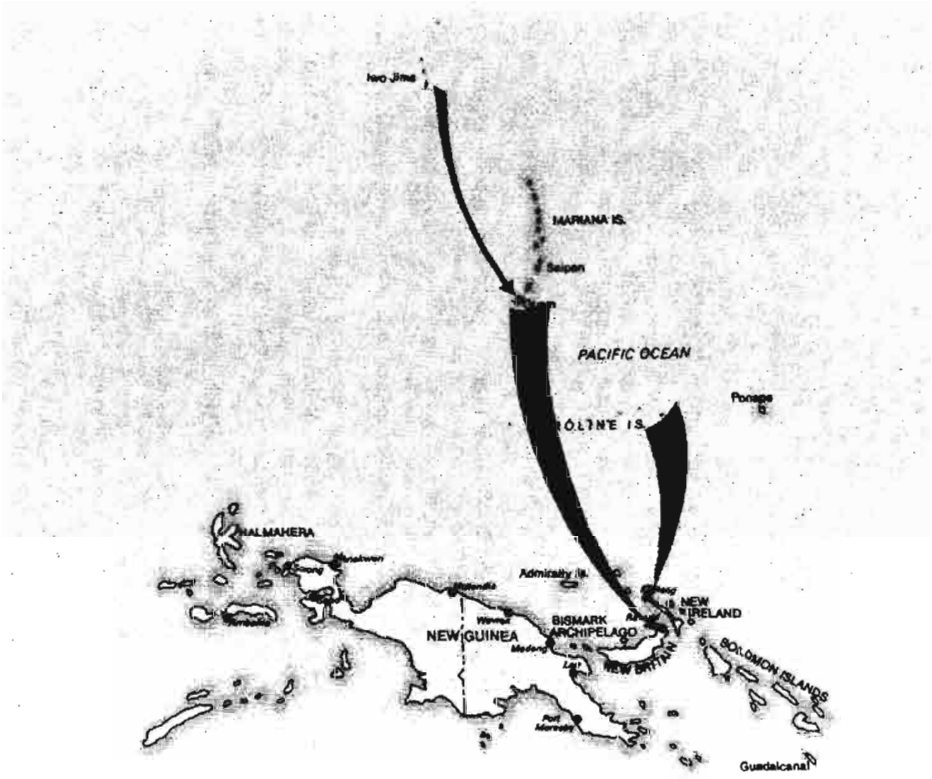

Fig. 2

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elements involved in the Southern operations were reported daily by the Comint centers in Hawaii and Corregidor. Specifically, the centers observed Japanese air and naval forces gathering in the vicinity of Takao and Keeling on Taiwan and Mako in the Pescadores, a group of islands between Taiwan and China. They also noted Japanese assault forces gathering on Amami Oshima north of Okinawa and in the Palau Islands in the Mandates. Air support for the Philippine assaults was also seen assembling in the Palaus and on Taiwan.

Because JN-25 messages as well as naval messages in other cryptosystems were largely unreadable throughout the last few months of 1941, they were usually exploited for what their externals revealed (e.g., addresses, callsigns, association with others) and sent to Washington where concentrated work on code and key recoveries was conducted. Had the JN-25 messages been exploitable at the time, their stunning contents would have revealed the missing carriers and the identity of other major elements of the 1st Air Fleet. Not only did the messages, which were finally decrypted and translated in 1945 and 1946, provide the existence and identity of the 1st Air Fleet's Strike Force, but they revealed the Strike Force's objective through analysis of its exercise activities and its movements prior to 26 November 1941.[17]

The Japanese messages intercepted between 21 October and 27 November 1941 revealed the method of attack and objective of the Japanese Strike Force. On 21 October 1941, Carrier Divisions 1, 2, and 5 began a series of exercises and training maneuvers which involved specially modified torpedoes.[18] These exercises, which probably ended on 6 November 1941 when Carrier Divisions 1 and 2 "are to launch (torpedoes) against *anchored capital ships*" (italics added) in Saeki Bay, amply demonstrated that the Strike Force had a naval objective. Furthermore, the extraordinary measures taken by the Combined Fleet to insure adequate fuel supplies for the Strike Force demonstrated that the naval objective was at a distant point far removed from shore-based fuel and even beyond the normal Japanese resupply capability. Between 4 October and 1 December 1941, the COS Combined Fleet, CINC 1st Air Fleet (Commander Strike force), units of the Strike Force, and many Japanese navy yards exchanged messages which revealed that three of the carriers (*Akagi, Soryu, Hiryu*) would carry fuel oil as deck cargo and in spare fuel tanks,[19] that additional oilers had been requisitioned into the Strike Force and modified for refueling at sea,[20] and that carriers and their escorts would practice extensive refueling while underway.[21]

By 12 November 1941, the carriers in the Strike Force had completed necessary repairs and had returned to their respective home ports or navy yards. Virtually all preparations for the Pearl Harbor assault were complete. Two exceptions were the final deployment of the Strike Force to its point of departure, Hitokappu Bay in the Kuriles,[22] and completion of modifications to some oilers which were probably those involved in refueling the Strike Force on its return trip[23] (see fig. 3). On 11 November 1941, however,

17. SRN 116866 – Radio silence was imposed on the entire Combined Fleet on 26 November 1941.
18. SRN 117453, 116476, 117301, and 116323. See also Gordon W. Prange, *At Dawn We Slept* (New York: McGraw-Hill, 1981), pp. 320-25 and Prange, *Verdict of History*, chapter 25 which discuss Japanese efforts to modify torpedoes and Kimmel's conviction that torpedoes could not run in the shallow waters of Pearl Harbor after being launched from a plane. Had he seen these messages he would no doubt have changed his mind.
19. SRN 117013, 117150, 116566, RG 457. See also Prange, *At Dawn We Slept*, pp. 320-25.
20. SRN 117031, 116672, 116588, 116630, 116589, RG 457.
21. SRN 116239/116901, 115709, 116588, 116140, 116131, 116583, RG 457.
22. Morison, Vol. III, p. 88.
23. See SRN 115398, RG 457. See also Edwin T. Layton, *And I Was There* (New York: William Morrow and Co. Inc., 1985), p. 232 where, in footnote 34, he cites an earlier message from the same vessel.

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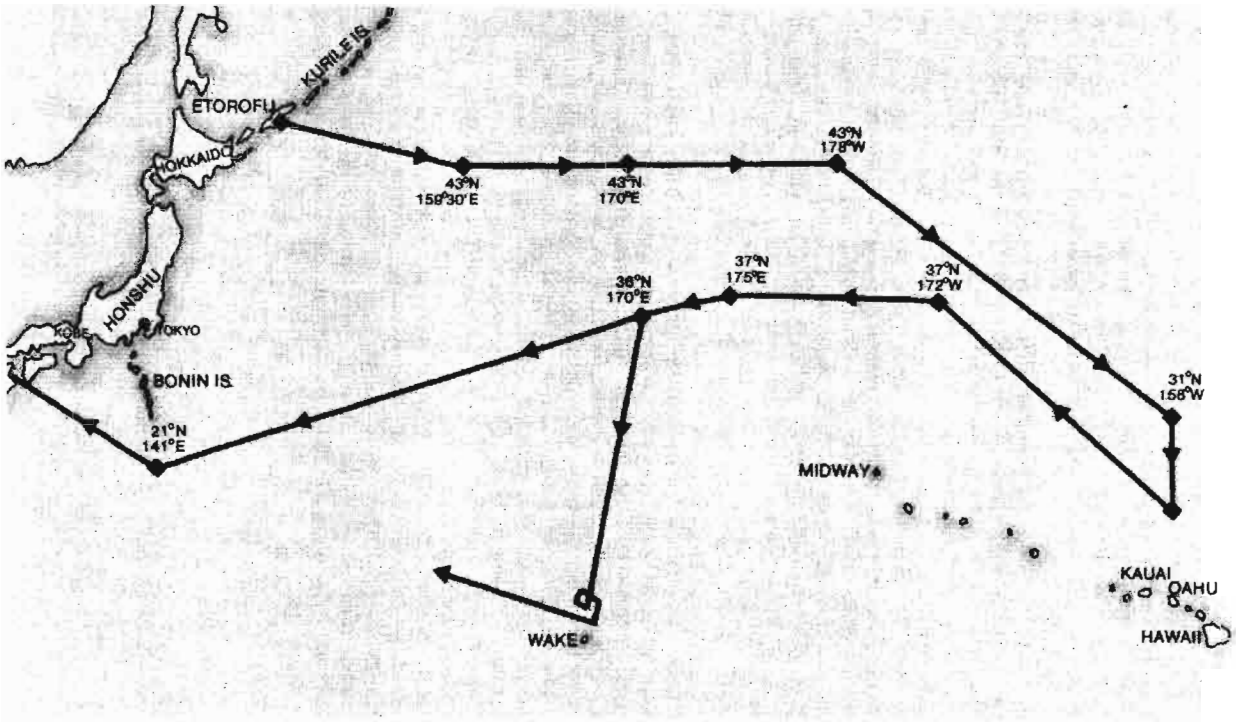

Fig. 3. Route of Pearl Harbor Striking Force (Nov.–Dec. 1941)

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Commander in Chief, 1st Air Fleet, issued a routine movement message containing a plan for anchoring Carrier Divisions 1, 2, and 5 and several escort units and *marus* (cargo vessels) in Saeki Bay in the Inland Sea at an unspecified future date.[24] There is no intercepted message confirming their arrival and, while it is entirely possible that not all elements of the Strike Force deployed to the Kuriles, the routine-appearing message, augmented on 1 December 1941 by deceptive radio broadcasts from Tokyo, probably represented an attempt on the part of the Japanese to deceive U.S. monitors because other Japanese naval messages now available clearly indicated that the Strike Force would be at sea during November.

On 9 November 1941, the Commander of Destroyer Squadron 1, a Strike Force element, while coordinating his activities with the Naval General Staff Tokyo, sent a message which revealed that, on 15 November 1941, Fleet carrier *Hiryu* of Carrier Division 2 would be conducting a refueling drill in southern Japan off Ariake Bay while towing the *Kokuyoo Maru.*[25] In addition, examination of movement reports between 17 and 20 November 1941 revealed that the Strike Force Flagship at that time was the battleship *Hiei* and that it was located at Hitokappu Bay (approximately 45N, 147-40E).[26] Finally, on 19 November 1941, Commander in Chief, Combined Fleet, announced to all Flagships a communication exercise on 22/23 November 1941, which excluded "the forces presently *enroute to the standby location* (italics added)."[27] Collectively, although not definitively, these messages strongly suggest that since 15 November 1941, instead of anchoring in Saeki Bay, major elements of the Strike Force had, in fact, been at sea probably moving to the high north latitudes of the Kuriles or, in the case of late departures, toward the east on the 30° line.

While the above information from message traffic was not available at the time, both Hawaii and the Philippines provided daily traffic intelligence reports based on traffic analysis of communications of the Japanese 2nd, 3rd, and 4th Fleets. These reports concerned events in the western and west-central Pacific areas. The reports were mailed to Washington where, after about two weeks enroute, they formed the basis of biweekly OP-20-G summaries prepared for the Office of Naval Intelligence.[28] Although the material was at times more than a month old, a factor which became critical in November and December 1941, officials in Washington did have access to the same Japanese Naval Comint available to Kimmel at Pearl Harbor and Admiral Thomas C. Hart, Commander in Chief, Asiatic Fleet, at Manila.

On occasion, such as on 26 and 27 November, Comint summaries prepared for the Commandants of the 14th and 16th Naval Districts, because of their content, were sent to Washington as messages. These specific messages, though considerably less alarming than other summaries issued by Hawaii during the October–November 1941 period, appeared at the same time as the translations of the famous "Winds Execute" messages

24. SRN 115787.
25. SRN 115784, RG 457.
26. SRN 117673, 117674/117666, 116990/116329, 116436, 116643, 116920, RG 457. See also Prange, *At Dawn We Slept*, pp. 342-52.
27. SRN 116588, RG 457.
28. John V. Connorton, *The Role of Radio Intelligence in the American-Japanese Naval War*, Vol. I, Appendix I, Part 2, SRH 012, RG 457. Hereinafter cited as Connorton. Calculations based on this source suggest that OP-20-G began these biweekly reports in February or March 1941.

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and contributed to the developing sense of crisis in Washington.[29] Hawaii's report for 26 November 1941, for example, was a comprehensive summary of the Japanese naval and air buildup assembling for a southern operation. It conveyed a distinct sense of alarm:

> Since the latter part of October, the Commander-in-Chief of the Second Fleet has been forming a Task Force consisting of: Second Fleet, Third Fleet (including First and Second Base Forces, and First Defense Division) Destroyer Squadron Three, Submarine Squadron Five, Combined Air Force Air Squadron Seven. Possibly vessels of the Third Battleship Division in the First Fleet. Third Fleet units are believed to be moving in the direction of Takao and Bako. It appears that the Seventh Cruiser Division and the Third Destroyer Squadron are an advance unit and may be enroute to South China. The Combined Air Force has assembled in Takao, and indications are that some of it has already moved to Hainan Island. It seems that the Second Base Force is transporting equipment of the Air Force to Taiwan. Radio calls for the South China Fleet, the French Indo-China Force, and the Naval Stations at Sama, Bako, and Takao appear also in headings of dispatches concerning this task force. The Resident Naval Officer, Palao, and the Third Base Force at Palao have communicated extensively with the Commander-in-Chief of the Third Fleet. It is thought that a strong force of submarines and air groups are in the vicinity of the Marshall Islands. This force includes the 24th Air Squadron, at least one aircraft carrier, and probably one-third of the submarine fleet. [This may mean one-third of the fleet submarines.] The 14th Naval District Communications Intelligence Unit evaluates the foregoing information to indicate that a strong force may be preparing to operate in Southeastern Asia while component parts of the Task Force may operate from the Marshalls and Palao.[30]

Corregidor's report on the 27th identified in even greater detail the existence of both a Japanese southern force and a Mandates force, including several Japanese ground force units in the Mandates.[31] Corregidor's message confirmed and enlarged on Hawaii's speculation regarding Japanese carriers in the Mandates.[32] In a curious and unexplained reversal, however, Corregidor stated that Hawaii's report "cannot be confirmed." It is also in this confusing context that Corregidor reassuringly and incorrectly reported that, as of 26 November 1941, "all First and Second Fleet carriers are still in (the) Sasebo-Kure area." The two summaries from Hawaii and Corregidor on 26 and 27 November 1941 are thus unique, not because of their imperfections but because they clearly showed Washington the current military situation in the Pacific as perceived by Radio Intelligence Centers in the Pacific and Asiatic Fleets. It is entirely possible, as Layton later claimed, that the OPNAV warning message of 29 November 1941 was a direct result of the impact of these summaries on the Chief of Naval Operations. In view of the evidence, however, an even more likely possibility is that all the OPNAV warning messages of November were stimulated by Comint. Japan's hostile intentions were

29. Two messages from Tokyo to Washington on 19 November contained instructions for Japanese embassies to listen to Japanese news broadcasts/general intelligence broadcasts for "Winds Execute" messages which would be a signal to destroy all codes, papers, etc. The second message was translated first on 26 November; the first message was translated on the 28th. Both caused a sensation in official circles in Washington since the trigger for a message was to be a diplomatic emergency involving the U.S., England, or Russia. Connorton, Vol. I, Section A.

30. COM-14 260110 Nov 41 to OPNAV, Info CINCPAC, CINCAF, COM-16 Japanese Navy Organization of Fleets.

31. COM-16 261331 Nov 41, to CINCPAC, COM-14, OPNAV. CINCAF Japanese Navy-Organization of Fleets Date of Issue – 27 November 1941.

32. SRMN 012, RG 457. See also SRH 012, RG 457.

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deduced from the diplomatic messages. The likely targets were concluded from the daily traffic intelligence reports from Hawaii and Corregidor.[33]

No review of the Navy's Comint contribution to U.S. knowledge of Japanese pre-Pearl Harbor intentions would be complete without citing the benefits U.S. officials derived from the messages exchanged by Japanese diplomats in Washington and Tokyo. Although the credit for initial U.S. success against Japanese diplomatic machine systems must go to Army cryptanalysts, the Navy did play a significant role in providing collection, and, after October 1940, by providing the bulk of its cryptanalytic and linguistic resources to the exploitation effort. Unfortunately, as Safford had foreseen, the small Navy cryptanalytic effort in Washington was almost overwhelmed by the volume of diplomatic messages.[34] Little time and fewer resources were left over to attack JN-25, the key Japanese Naval Code code which, if read, would have provided operational details concerning the Japanese Fleet.

Collectively the diplomatic messages conveyed an alarming picture of unmistakably hostile intention toward the United States, particularly after 26 November when the U. S. delivered its ten-point response to the Japanese note of 20 November.[35] They never contained, however, any Japanese naval or military information specifically concerning movements of the Japanese fleet. Messages between Tokyo and Washington concerned the ongoing discussions between Secretary of State Cordell Hull, Japanese Ambassador Kichisaburo Nomura, Minister Reijiro Wakasugi, and later, Saburo Kusuru, Japanese Ambassador Extraordinary. Circular messages between Tokyo, Washington, and other diplomatic posts frequently concerned Japanese espionage activities and their efforts to obtain military information concerning U.S. naval and air dispositions in Panama, Hawaii, Manila, and various locations on the U.S. West Coast.

Receiving the actual Japanese diplomatic messages, therefore, would have done neither Kimmel nor Hart any particular service aside from their obvious value in pinpointing areas of Japanese intelligence objectives and validation of Japan's hostility. Accordingly, after July 1941, as a matter of policy and as a practical security precaution, no intelligence material – known as MAGIC – derived directly from this diplomatic source was sent to U. S. commanders in either Hawaii or the Philippines.[36] As we have seen, however, the three warning messages from Washington in November were probably inspired in part by the contents of the diplomatic correspondence.

Despite the fact that all messages in Japanese diplomatic channels were not available by 7 December and that the daily reports mailed from Hawaii and Corregidor were at least two weeks enroute to Washington, by late November 1941 U.S. Navy officials in Washington, Pearl Harbor, and Manila well knew that war with Japan was imminent.[37] Made aware of hostile Japanese intentions by a profusion of intelligence, most of it

33. The OPNAV message of 24 November 1941 to both CINCPAC and CINCAF warned of possible Japanese "aggressive movement . . . in any direction." It specifically mentioned the Philippines and Guam as possible objectives. On 27 November 1941 an OPNAV War Warning message alerts all Pacific commands to "an aggressive move . . . within the next few days." Possible objectives mentioned are the Philippines, Kra peninsula, Thailand, or Borneo. Guam and Samoa are directed to take measures against sabotage. On 29 November 1941 the final War Warning message is sent by OPNAV. The text indicates that Army elements have also received the same warning. Connorton.

34. The messages were usually seen by authorized recipients on the day they were translated.

35. Roberta Wohlstetter, *Pearl Harbor Warning and Decision* (California: Stanford University Press, 1962), pp. 176–86.

36. Ibid.

37. Connorton.

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Comint, Admiral Stark, Chief of Naval Operations, after 23 November 1941 repeatedly sent messages warning his Pacific commanders of impending Japanese attacks, placing restrictions on ship movements, and ordering codes destroyed. The weight of evidence overwhelmingly favored a Japanese Air/Naval strike against the Philippines, and this locale actually appeared in the U.S. warning messages of 24 and 27 November as a likely Japanese objective. It is significant that Navy losses in the Philippines on 8 December 1941 consisted of one gun boat, the *Wake*, and two PBY aircraft.

In summary, the U.S. Navy's radio intelligence program from 1924 to 1941 is a story of trial and error. Through much of the period, particularly the closing months of 1941, the tactical and strategic benefits from cryptanalysis and traffic analysis were not clearly understood or appreciated. Despite some early successes against Japanese naval communications, most U.S. Navy decision-makers either ignored or forgot the utility of such information. Plagued by shortages in personnel and equipment, problems of communication and interservice rivalries, this small program, nevertheless, developed a core intercept and analysis program at Pearl Harbor and Corregidor which would prove invaluable but not until after Pearl Harbor.

The year 1941 ended with a series of disasters for the United States Navy, not the least of which, with the subsequent evacuation of Station C from Corregidor, was the effective if temporary loss of 50 percent of its strategic cryptologic capability in the Pacific. Not until the battles of the Coral Sea and Midway did the U.S. gain the offensive from the Japanese and not until OP-20-G was permitted to drop the Japanese diplomatic effort, concentrate on the Japanese Navy's codes, and place support detachments with Task Force Commanders did Comint realize the major role it was to play in the next phase of the Pacific War. The Japanese naval communications and the information they contained were the keys to the intelligence war in the Pacific in 1942. Unfortunately these communications were not fully exploited until after Pearl Harbor because the U.S. Navy had concentrated its cryptanalytic effort on Japanese diplomatic messages. It was an opportunity lost.

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~~(FOUO)~~ **After his retirement in January 1984, with 32 years of service, Mr. Parker returned to the Agency as a reemployed annuitant. He is assigned to the Office of History and Publications (T542) as a Historian/Writer. Early in his career, Mr. Parker held positions as Traffic Analyst, Special Research Analyst, and Staff Officer, including various supervisory assignments. Later on Mr. Parker served as Budget Officer and Planning Officer in DDO and ADPR and head of the Manpower Standards Program in ADPR. He served in the U.S. Marine Corps from 1943-45 and 1950-52.**

STATUTORILY EXEMPT

He is certified in Special Research Analysis and Resources Management. This article is a synopsis of a more detailed monograph (to be published separately) which examines both the period between 1924 and 1941 and the events leading up to the Japanese attack on Pearl Harbor, including a daily chronology of military and diplomatic events, both reported and unreported, reflected in Comint.