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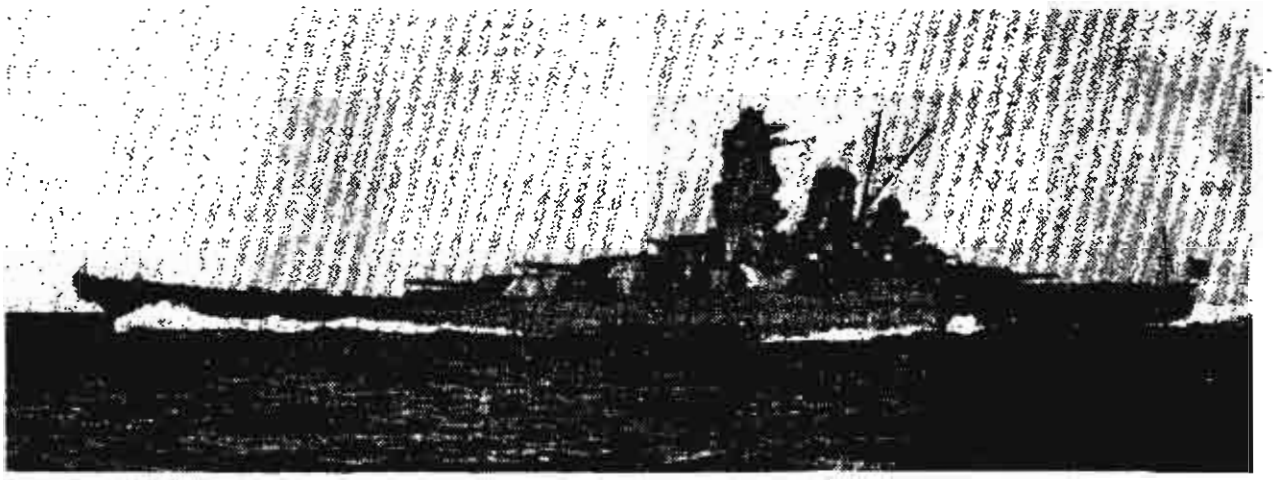
Comint and the Torpedoing of the Battleship Yamato



The *Yamato*

The Japanese superbattleship *Yamato*, unsurpassed in size and firepower, was a much-sought-after prize. Although built in secrecy, the existence and size of this behemoth had become known to the Allies. Sinking her would be a singular accomplishment, and Comint gave the U.S. Navy the opportunity to do just that, and present the nation with a unique Christmas present in 1943.[1]

Work on design of the *Yamato* had begun in 1935. Construction began in 1937 at the Kure Navy Yard, continuing there in an atmosphere of utmost secrecy. Launched in December 1941, the *Yamato* was described as a "singularly beautiful ship."

Believed to be unsinkable by the Japanese, *Yamato* and her sistership *Musashi* were the largest and most formidable battleships ever built.[2] Displacing 68,000 tons, and over 72,000 tons when fully loaded, *Yamato* had a main battery consisting of nine 18.11-inch guns, capable of hurling 3,200-pound projectiles over 22

[1] Comint, or "Radio Intelligence" as the Navy then called it, had been of great assistance to submarine—and other—operations in the Pacific. It was common practice for the Fleet submarine broadcasts to carry messages which told submarines on patrol to look for Japanese targets at known times and positions, or that a target of a certain category was expected to be at a particular location at a certain time. These messages were worded, in so far as possible, to avoid the use of actual names and numerals which had appeared in the decrypted text. They were encrypted for broadcast in a machine system which remained secure throughout the war.

[2] Another ship of the *Yamato* class, the *Shinano*, was converted during construction to an aircraft carrier, the largest such ship launched during the war.

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miles.[3] She measured 863 feet over-all, her engine rooms protected by 16.1-inch vertical and 7.9-inch horizontal armor plate. Originally planned to accommodate 2,200 officers and enlisted men, *Yamato* had its complement increased to over 2,700 with the addition of radar and extra antiaircraft guns. She also possessed remarkable speed for a ship her size, capable of cruising speeds of 25 knots and top speeds approaching 30 knots. She could easily outrun submarines, and she could outshoot any Allied ship.

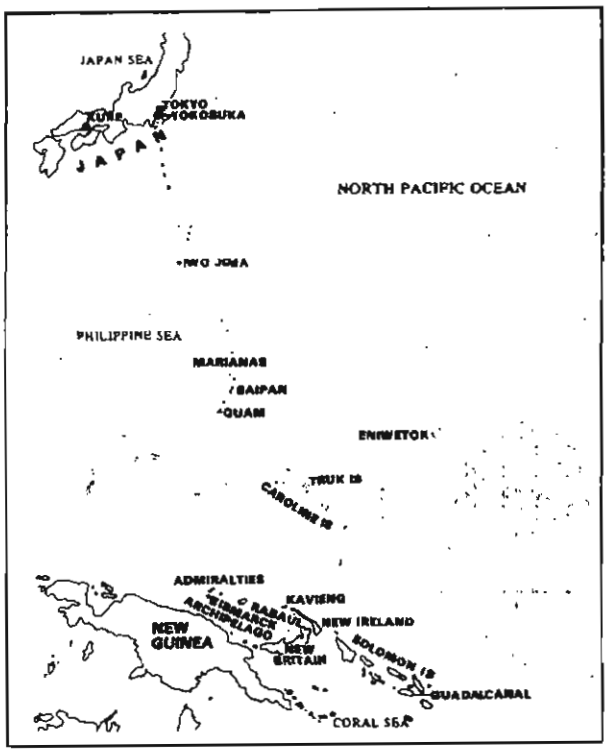
By late 1943, the Japanese situation in the South Pacific was becoming desperate. Japanese shipping had taken heavy losses, and it was becoming increasingly necessary to transport soldiers and equipment by warships to reinforce beleaguered garrisons. Even the mighty *Yamato* was pressed into such service, to assist in transporting troops and equipment to the Japanese garrison at Kavieng, New Ireland.

Designated the "E Transportation Operation" by the Japanese, this resupply effort was to be divided into two groups. One, designated the "E-1 Transportation Group," included *Yamato* and the destroyers *Tanikaze*, *Yamaguno*, and *Akigumo*, all modern ships. The E-1 operation was to be in effect from 17 December until arrival at Truk.[4] Another group, the "E-2 Transportation Group," consisted of two destroyers and the heavy cruisers *Haguro*, *Myoko*, and *Tone*. Comint also provided information that all ships of this latter group were in various stages of repair. *Haguro* and *Myoko*, comprising CRUDIV 5, were conducting post-repair trials in the western Inland Sea. The two destroyers were scheduled to complete repairs on 18 December, and *Tone* on an unknown date.

On 2 November 1943, a decrypted message revealed that the *Yamato* had been assigned an anchorage at Truk. That she was indeed at Truk was confirmed on 4 November in an intercept of a "traffic-routing" message.

On 11 December, *Yamato* sent a "movement report" noting that the ship and several others would arrive at Yokosuka, Japan, on 17 December. The message, however, could not be read until more than a month later.[5]

As a consequence, the next relevant Comint concerning the battleship was not obtained until 17 December, when a message from *Yamato*, announcing her arrival at Yokosuka, was intercepted. And the next day the Navy's Washington processing center (OP-20-G) published this report of *Yamato's* arrival at Yokosuka.



On 19 November, a longer and far more pertinent message was published by FRUPAC,[6] the Navy's processing center at Makalapa, Hawaii. This intercepted message, originated by Commander-in-Chief, Combined Fleet, provided the details of the "E Transportation Operation" noted above.

[3] By comparison, the largest U.S. battleships ever built were four of the *Iowa* class, displacing 45,000 tons each and armed with main batteries of 16-inch guns.

[4] Truk Atoll was the principal Central Pacific anchorage of the Japanese Combined Fleet at that time.

[5] In December 1943, the primary Japanese Navy cryptographic system used for operations and administration was a large five-numeral enciphered code. The code had been in use since August 1943, but the cipher changed every four to six weeks, and the one primarily of concern here was in effect from 1 December through 9 January. The code had been recovered, but the cipher, which consisted of close to 100,000 randomly arranged five-numeral groups, had not, especially during the first three weeks of use. The result was that various messages were not read until after their period of potential exploitability had expired. Nevertheless, much timely and useful information was produced. Also, the two call sign systems in use at that time were in a good state of recovery.

[6] Fleet Research Unit, Pacific.

The next relevant Comint was obtained on 20 December, when the Air Supply Depot at Yokosuka informed its counterparts at Truk and Rabaul, New Britain, that 250 belly tanks for Type-Zero fighters would be shipped in *Yamato*, departing on the 21st. This Comint was highly significant in that it provided the initial reference to the departure date of *Yamato* from Yokosuka. It was published by CINCPAC about 30 hours after the time of origin—about 12 hours after *Yamato* sailed—leaving ample time to arrange an ambush at Truk North Channel.

The responsibility for intercepting *Yamato* fell to the submarine *Skate*, stationed north of the North Channel to Truk. *Skate* had been patrolling in this general area since late in November, during which time it sank a merchant ship, the *Terukawa Maru*.

But a major question remained—when would *Yamato* arrive at Truk? The author has been unable to locate intercepts giving in advance her arrival time at Truk—or other relevant information about the voyage—though it is probable, as will be shown later, that such data was available. But even if Comint were not available in this regard, it would have been possible—given her date of departure, her standard cruising speed, and the distances involved—to estimate *Yamato's* arrival date at Truk with a fairly high degree of accuracy.

In any event, on 23 December CINCPAC Bulletin 647 noted "possibility *Yamato* and 2 destroyers carrying Army troops may arrive at Truk 25th from Japan."[7] And Bulletin 650, issued at 0322Z on the 26th, provided still more detail when it noted that "E-1 Transportation Group (*Yamato* plus 2 DDs) believed due Truk 25th, thereupon this group dissolved. E-2 Transportation Group (CRUDIV 5 plus *Tone* and 1 or 2 destroyers) departed Kure area 23rd for Rabaul via Truk. Almost 1,700 Army troops for Kavieng on board this group." The 25th as the Truk arrival date for *Yamato* could have, as noted previously, been estimated, but the rest of this new information had to have come from intercepts, although the author has been unable to locate them to date.[8]

Lending further credence to the possibility that Comint had pinpointed *Yamato's* time of arrival and location was the war-patrol report of *Skate*. This report, like all action and reconnaissance reports, could not contain any Comint. Nevertheless it did contain two rather revealing statements. One was to the effect that at the time of initial radar contact, a navigational fix had just been obtained by *Skate*, and it was "discovered that we were to the east of our desired position on the line for a dawn attack." The second statement noted that it was "too dark for a satisfactory attack."

The former strongly suggests that the interception of *Yamato* was expected, and was to be made at a predetermined location in order to take advantage of the situation where the darkness in the west would help hide the submarine and the light of dawn in the east would silhouette the targets.[9] That essentially the reverse occurred may have been simply bad luck, but it fits the implication in the second statement that darkness reduced the effectiveness of the attack. Also, another entry in the patrol report notes that it was too dark to make out the targets distinctly after the submarine submerged. Radar could not have been used then, and tracking had to be done visually through the periscope, aided by sound bearings and ranges. The report also notes that a bow-tube attack had been planned, but sound bearings indicated the ships had changed course and were passing astern of *Skate*, and that while it was possible to obtain good bearings, the ranges were doubtful. Thus, by the time he had to fire, at a range of about 2,200 yards, the mathematical problem may not have been solved to the Captain's satisfaction, but he could not expect to better his opportunity. *Yamato's* speed would not permit another chance. Four torpedoes were fired by *Skate* from the stern tubes, with a one-degree spread. One hit the target.[10]

From postwar Japanese information, there is a facet of the story which may be hyperbole, but it is to the effect that when the hit occurred, the Officer of the Deck failed to note any signs of it until the ship heeled slightly to starboard, and an escorting destroyer sent him a message noting that "your ship may have received a hit, as we saw a high column of water on your side aft." Although there is nothing in this information about six depth charges heard by *Skate*, the screening destroyers would no doubt have tried to locate the possible submarine and attack it. In any case, *Yamato*, according to her log, arrived at Truk on Christmas day. Also, she sent a movement report which, although not deciphered until nearly a month later, noted that *Yamato* and *Tanikaze* arrived there at

[7] Throughout most of the war a daily CINCPAC Bulletin was issued in a cryptographic system held only by Comint recipients in the Pacific Fleet, plus CNO and COMINCH in Washington. These bulletins were the vehicles used for rapid distribution of Comint provided to CINCPAC by the Radio Intelligence organization.

[8] It is virtually certain that CINCPAC had to have had a Comint source to provide the specifics published in Bulletin 650. Such a message could have given the precise speed, track, and schedule for the E-1 Group as well as the unique information regarding the place and date of departure of the E-2 Group and the size of its contingent of soldiers. That the speed, track and course information was not in the Bulletin would have been consistent with normal practice, since it would have been of use only to COMSUBPAC, who would have gotten it by direct service from FRUPAC.

[9] *Yamato* was intercepted by *Skate* about 100 miles north-northwest of the North Channel entrance to Truk Atoll.

[10] In *Silent Victory*, Clay Blair, Jr. states that two torpedoes hit *Yamato*.

1600 local time on the 25th. Two destroyers were with her at the time of the attack, but the arrival of the second one was not mentioned in this message. And, as noted previously, three destroyers were to have sailed with *Yamato* from Japan, although it appears that one did not make the voyage.

Several attack-related messages were intercepted and later read. One conveyed an order to *Yamato* from the Commander-in-Chief, Combined Fleet, directing the ship to turn in about two-thirds of her antiaircraft ammunition to the Truk supply depot and a similar portion of "all usable repair materials" to an unidentified ship. Although sent on 2 January 1944, this message was not read until 13 January. Earlier, on 29 December, *Yamato* made a report of hull damage resulting "from torpedo attack." Although not published until 8 February, it noted that (1) the ship had a hole about 11 meters in diameter, (2) there were three flooded, though empty, compartments, and (3) one magazine was flooded. Damage to several other compartments, causing leaks, was also mentioned, including the powder-supply room for the number 3 turret.

On 8 and 9 January both OPNAV and FRUPAC published a message sent on the 7th by Tokyo to the Commander-in-Chief, Combined Fleet, and to the Kure Navy Yard, requesting the schedule of *Yamato's* return to Japan and urging that the ship be there for dry-docking on 15 January, or as soon thereafter as possible. The CINCPAC Bulletin for 9 January, on the basis of this intercept, stated that *Yamato* would leave Truk soon for docking at Kure Navy Yard and that she had been "possibly torpedoed on December 25th while en route Truk from Japan." [11]

Also, on 9 January *Yamato* sent a message informing 15 addressees that the ship would leave Truk at 0600, 10 January, and arrive in Kure at 1100 on the 16th. Average speed would be 17 knots, and 10 navigational positions, with times and course changes, were given for the six-day trip. Three destroyers were to accompany her. Also, surface and air antisubmarine protection was requested for the last day of the trip. This message was published by the Washington center about 20 hours after its time of origin, and the CINCPAC Bulletin for 10 January noted that *Yamato* and three destroyers left Truk on the 10th and would arrive in Japanese waters at about noon on the 15th. A "communications guard schedule," sent by Truk to Kure and relayed via Saipan and Chichijima, was also read on the 10th, confirming the dates of the voyage.

The final item relating to the incident was in the form of an antisubmarine warning sent at 1130 (Tokyo time) on 12 January, reporting a surfaced submarine. Reliability was labeled as "certain." Reported in Comint at 1116Z on 12 January, an accompanying comment, published by Washington, noted that *Yamato* should have been very close to this position at the time given. *Yamato*, however, was not attacked on its return voyage, despite the abundance of Comint concerning its course, speed, locations, etc. She was apparently lucky on that occasion and had several more campaigns to go, before being sunk on 7 April 1945 by carrier planes in the Okinawa campaign.[12]

Skate returned to the Submarine Base, Pearl Harbor, about mid-day on 7 January. On 13 January, COMSUBPAC, in his "confidential endorsement" to *Skate's* war-patrol report, gave the submarine credit for damaging a 20,000-ton cruiser or battleship in the Christmas morning attack, but he did not disclose that he knew it was the superbattleship *Yamato*.

Admiral Schulz, a graduate of the Naval Academy and a veteran of almost 35 years of Naval service, has held a number of senior positions in the cryptologic community, including Head, Naval Security Group; Chief, NSA Pacific; and Assistant Director, NSA, for the National Cryptologic Staff. During World War II, he served in the Map Room at the White House, and as a communications officer on the staff of the Commander-in-Chief, U.S. Pacific Fleet. He served in a number of positions afloat and ashore, including Executive and Commanding Officer of the battleship *USS Indiana*. Since his retirement in 1971 Admiral Schulz has worked part-time in the history program of the National Cryptologic School, researching and writing a history depicting the role Comint played in the Central Pacific campaigns of World War II.

[11] *Skate's* war-patrol report provides no indications that the submarine made any radio transmissions during her return trip; therefore, the fact she had made the attack had perhaps not yet reached the writer of the Bulletin item.

[12] *Yamato's* sistership, *Musashi*, was sunk earlier—on 24 October 1944—in the Battle for Leyte Gulf in the Philippines.