= Yamato @-@ class battleship =

The Yamato @-@ class battleships ( ????? , Yamato @-@ gata senkan ) were battleships of the Imperial Japanese Navy ( IJN ) constructed and operated during World War II . Displacing 72 @,@ 000 long tons ( 73 @,@ 000 t ) at full load , the vessels were the heaviest battleships ever constructed . The class carried the largest naval artillery ever fitted to a warship , nine 460 @-@ millimetre ( 18 @.@ 1 in ) naval guns , each capable of firing 1 @,@ 460 kg ( 3 @,@ 220 lb ) shells over 42 km ( 26 mi ) . Two battleships of the class ( Yamato and Musashi ) were completed , while a third ( Shinano ) was converted to an aircraft carrier during construction .

Due to the threat of American submarines and aircraft carriers , both Yamato and Musashi spent the majority of their careers in naval bases at Brunei , Truk , and Kure ? deploying on several occasions in response to American raids on Japanese bases ? before participating in the Battle of Leyte Gulf in October 1944 , as part of Admiral Kurita 's Centre Force . Musashi was sunk during the battle by American carrier airplanes . Shinano was sunk ten days after her commissioning in November 1944 by the submarine USS Archerfish , while Yamato was sunk in April 1945 during Operation Ten @-@ Go .

= = Background = =

The design of the Yamato @-@ class battleships was shaped by expansionist movements within the Japanese government , Japanese industrial power , and the need for a fleet powerful enough to intimidate likely adversaries .

After the end of the First World War , many navies ? including those of the United States , the United Kingdom , and Imperial Japan ? continued and expanded construction programs that had begun during the conflict . The enormous costs associated with these programs pressured their government leaders to begin a disarmament conference . On 8 July 1921 , the United States ' Secretary of State Charles Evans Hughes invited delegations from the other major maritime powers ? France , Italy , Japan , and the United Kingdom ? to come to Washington , D.C. and discuss a possible end to the naval arms race . The subsequent Washington Naval Conference resulted in the Washington Naval Treaty . Along with many other provisions , it limited all future battleships to a standard displacement of 35 @,@ 000 long tons ( 36 @,@ 000 t ; 39 @,@ 000 short tons ) and a maximum gun caliber of 16 inches ( 406 mm ) . It also agreed that the five countries would not construct more capital ships for ten years and would not replace any ship that survived the treaty until it was at least twenty years old .

In the 1930s , the Japanese government began a shift towards ultranationalist militancy . This movement called for the expansion of the Japanese Empire to include much of the Pacific Ocean and Southeast Asia . The maintenance of such an empire ? spanning 3 @,@ 000 miles ( 4 @,@ 800 km ) from China to Midway Island ? required a sizable fleet capable of sustained control of territory . Although all of Japan 's battleships built prior to the Yamato class had been completed before 1921 ? as the Washington Treaty had prevented any more from being completed ? all had been either reconstructed or significantly modernized , or both , in the 1930s . This modernization included , among other things , additional speed and firepower , which the Japanese intended to use to conquer and defend their aspired @-@ to empire . When Japan withdrew from the League of Nations in 1934 over the Mukden Incident , it also renounced all treaty obligations . Japan would no longer design battleships within the treaty limitations and was free to build warships larger than those of the other major maritime powers .

Japan 's intention to acquire resource @-@ producing colonies in the Pacific and Southeast Asia would likely lead to confrontation with the United States , thus the U.S. became Japan 's primary potential enemy . The U.S. possessed significantly greater industrial power than Japan , with 32 @.@ 2 % of worldwide industrial production compared to Japan 's 3 @.@ 5 % . Furthermore , several leading members of the United States Congress had pledged " to outbuild Japan three to one in a naval race . " Consequently , as Japanese industrial output could not compete with American industrial power , Japanese ship designers developed plans for new battleships

individually superior to their counterparts in the United States Navy . Each of these battleships would be capable of engaging multiple enemy capital ships simultaneously , eliminating the need to expend as much industrial effort as the U.S. on battleship construction .

= = Design = =

Preliminary studies for a new class of battleships began after Japan 's departure from the League of Nations and its renunciation of the Washington and London naval treaties ; from 1934 to 1936 , 24 initial designs were put forth . These early plans varied greatly in armament , propulsion , endurance , and armor . Main batteries fluctuated between 460 mm ( 18 @.@ 1 in ) and 406 mm ( 16 @.@ 0 in ) guns , while the secondary armaments were composed of differing numbers of 155 mm ( 6 @.@ 1 in ) , 127 mm ( 5 @.@ 0 in ) , and 25 mm ( 0 @.@ 98 in ) guns . Propulsion in most of the designs was a hybrid diesel @-@ turbine combination , though one relied solely on diesel and another planned for only turbines . Endurance in the designs had , at 18 kn ( 21 mph ; 33 km / h ) , a low of 6 @,@ 000 nmi ( 11 @,@ 000 km ) in design A @-@ 140 @-@ J2 to a high of 9 @,@ 200 nmi ( 17 @,@ 000 km ) in designs A @-@ 140A and A @-@ 140 @-@ B2 . Armor varied between providing protection from the fire of 406 mm guns to enough protection against 460 mm guns .

After these had been reviewed , two of the original twenty @-@ four were finalized as possibilities , A @-@ 140 @-@ F3 and A @-@ 140 @-@ F4 . Differing primarily in their range ( 4 @,@ 900 nmi ( 9 @,@ 100 km ) versus 7 @,@ 200 nmi ( 13 @,@ 300 km ) at 16 kn ( 18 mph ; 30 km / h ) ) , they were used in the formation of the final preliminary study , which was finished on 20 July 1936 . Tweaks to that design resulted in the definitive design of March 1937 , which was put forth by Rear @-@ Admiral Fukuda Keiji ; an endurance of 7 @,@ 200 nm was finally decided upon , and the hybrid diesel @-@ turbine propulsion was abandoned in favor of just turbines . The diesels were removed from the design because of problems with the engines aboard the submarine tender Taigei . Their engines , which were similar to the ones that were going to be mounted in the new battleships , required a " major repair and maintenance effort " to keep them running due to a " fundamental design defect " . In addition , if the engines failed entirely , the 200 mm ( 7 @.@ 9 in ) armor that protected that area would severely hamper any attempt to replace them .

The final design called for a standard displacement of 64 @,@ 000 long tons ( 65 @,@ 000 t ) and a full @-@ load displacement of 69 @,@ 988 long tons ( 71 @,@ 111 t ) , making the ships of the class the largest battleships yet designed , and the largest battleships ever constructed . The design called for a main armament of nine 460 @-@ millimetre ( 18 @.@ 1 in ) naval guns , mounted in three , three @-@ gun turrets ? each of which weighed more than a 1930s @-@ era destroyer . The designs were quickly approved by Japanese Naval high command , over the objections of naval aviators , who argued for the construction of aircraft carriers rather than battleships . In all , five Yamato @-@ class battleships were planned .

= = Ships = =

Although five Yamato @-@ class vessels had been planned in 1937 , only three ? two battleships and a converted aircraft carrier ? were ever completed . All three vessels were built in extreme secrecy , to prevent American intelligence officials from learning of their existence and specifications ; indeed , the United States ' Office of Naval Intelligence only became aware of Yamato and Musashi by name in late 1942 . At this early time , their assumptions on the class 's specifications were quite far off ; while they were correct on their length , the class was given as having a beam of 110 feet ( 34 m ) ( in actuality , it was about 127 feet ( 39 m ) ) and a displacement of 40 @,@ 000 ? 57 @,@ 000 tons ( in actuality , 69 @,@ 000 tons ) . In addition , the main armament of Yamato class was given as nine 16 @-@ inch ( 41 cm ) guns as late as July 1945 , four months after Yamato was sunk . Both Jane 's Fighting Ships and the Western media also misreported the specifications of the ships . In September 1944 , Jane 's Fighting Ships listed the displacement of both Yamato and Musashi as 45 @,@ 000 tons . Similarly , both the New York Times and the Associated Press reported that the two ships displaced 45 @,@ 000 tons with a speed of 30 knots ,

and even after the sinking of Yamato in April 1945 , The Times of London continued to give 45 @,@ 000 tons as the ship 's displacement . Nevertheless , the existence of the ships ? and their supposed specifications ? heavily influenced American naval engineers in the design of the Montana @-@ class battleships , all five of which were to be built to counter the firepower of the Yamato class .

= = = Yamato = = =

Yamato was ordered in March 1937 , laid down 4 November 1937 , launched 8 August 1940 , and commissioned 16 December 1941 . She underwent training exercises until 27 May 1942 , when the vessel was deemed " operable " by Admiral Isoroku Yamamoto . Joining the 1st Battleship Division , Yamato served as the flagship of the Japanese Combined Fleet during the Battle of Midway in June 1942 , yet did not engage enemy forces during the battle . The next two years were spent intermittently between Truk and Kure naval bases , with her sister ship Musashi replacing Yamato as flagship of the Combined Fleet . During this time period , Yamato , as part of the 1st Battleship Division , deployed on multiple occasions to counteract American carrier @-@ raids on Japanese island bases . On 25 December 1943 , she suffered major torpedo damage at the hands of USS Skate , and was forced to return to Kure for repairs and structural upgrades .

In 1944 ? following extensive antiaircraft and secondary battery upgrades ? Yamato joined the Second Fleet in the Battle of the Philippine Sea , serving as an escort to a Japanese Carrier Division . In October 1944 , as part of Vice Admiral Takeo Kurita 's Center Force for the Battle of Leyte Gulf , she used her naval artillery against an enemy vessel for the only time , helping sink the American escort carrier Gambier Bay and the destroyer Johnston before she was forced away by torpedoes from Heermann , which put her out of combat . Lightly damaged at Kure in March 1945 , the ship was then rearmed in preparation for operations . Yamato was sunk 7 April 1945 by 386 American carrier aircraft during Operation Ten @-@ Go , receiving 10 torpedo and 7 bomb hits before capsizing ; 2 @,@ 498 of the 2 @,@ 700 crew @-@ members were lost , including Vice @-@ Admiral Seiichi It? . The sinking of Yamato was seen as a major American victory , and Hanson W. Baldwin , the military editor of The New York Times , wrote that " the sinking of the new Japanese battleship Yamato ... is striking proof ? if any were needed ? of the fatal weakness of Japan in the air and at sea " .

= = = Musashi = = =

Musashi was ordered in March 1937 , laid down 29 March 1938 , launched 1 November 1940 , and commissioned 5 August 1942 . From September to December 1942 , she was involved in surface and air @-@ combat training exercises at Hashirajima . On 11 February 1943 , Musashi relieved her sister ship Yamato as flagship of the Combined Fleet . Until July 1944 , Musashi shifted between the naval bases of Truk , Yokosuka , Brunei , and Kure . On 29 March 1944 , she sustained moderate damage near the bow from one torpedo fired by the American submarine Tunny . After repairs and refitting throughout April 1944 , Musashi joined the 1st Battleship Division in Okinawa .

In June 1944 , as part of the Second Fleet , the ship escorted Japanese aircraft carriers during the Battle of the Philippine Sea . In October 1944 , she left Brunei as part of Admiral Takeo Kurita 's Centre Force during the Battle of Leyte Gulf . Musashi was sunk 24 October during the Battle of the Sibuyan Sea , taking 17 bomb and 19 torpedo hits , with the loss of 1 @,@ 023 of her 2 @,@ 399 @-@ man crew .

= = = Shinano = = =

Shinano , originally Warship Number 110 , was laid down as the third member of the Yamato class , albeit with a slightly modified design . Most of the original armor values were slightly reduced , including the belt , deck , and turrets . The savings in weight this entailed meant that improvements could be made in other areas , including added protection for fire @-@ control and lookout positions

. In addition , the 12 @.@ 7 cm ( 5 @.@ 0 in ) secondary armament on the first two Yamatos was to have been replaced by the 10 cm ( 3 @.@ 9 in ) / 65 caliber Type 98 gun . Although smaller , this gun was superior to the 127 mm , possessing a significantly greater muzzle velocity , maximum range , anti @-@ aircraft ceiling and rate of fire .

In June 1942 , following the Japanese defeat at Midway , construction of Shinano was suspended , and the hull was gradually rebuilt as an aircraft carrier . She was designed as a 64 @,@ 800 @-@ ton support vessel that would be capable of ferrying , repairing and replenishing the airfleets of other carriers . Although she was originally scheduled for commissioning in early 1945 , the construction of the ship was accelerated after the Battle of the Philippine Sea ; this resulted in Shinano being launched on 5 October 1944 and commissioned a little more than a month later on 19 November . Shinano departed Yokosuka for Kure nine days later . In the early morning on 29 November , Shinano was hit by four torpedoes from USS Archerfish . Although the damage seemed manageable , poor flooding control caused the vessel to list to starboard . Shortly before midday , she capsized and sank , taking 1 @,@ 435 of her 2 @,@ 400 @-@ man crew with her . To this day , Shinano is the largest naval vessel to have been sunk by a submarine .

= = = Warships Number 111 and 797 = = =

Warship Number 111 , never named , was planned as the fourth member of the Yamato class and the second ship to incorporate the improvements of Shinano . The ship 's keel was laid after Yamato 's launch in August 1940 and construction continued until December 1941 , when the Japanese began to question their ambitious capital ship building program ? with the coming of war , the resources essential in constructing the ship would become much harder to obtain . As a result , the hull of the fourth vessel , only about 30 % complete , was taken apart and scrapped in 1942 ; materials from this were used in the conversions of Ise and Hy?ga to hybrid battleship / aircraft carriers .

The fifth vessel , Warship Number 797 , was planned as an improved Shinano but was never laid down . In addition to the modifications made to that ship , 797 would have removed the two 155 mm ( 6 @.@ 1 in ) wing turrets in favor of additional 100 mm guns ; authors William Garzke and Robert Dulin estimate that this would have allowed for 24 of these weapons . Yamato was eventually modified in 1944 to something akin to this .

= = Specifications = =

= = = Armament = = =

Although the primary armament of the Yamato class was officially designated as the 40 cm / 45 caliber ( 15 @.@ 9 in ) Type 94 , it actually took the form of nine 46 cm / 45 caliber ( 18 @.@ 1 in ) guns ? the largest guns ever fitted to a warship ? mounted in three 3 @-@ gun turrets , each of which weighed 2 @,@ 774 metric tons . Each gun was 21 @.@ 13 metres ( 69 @.@ 3 ft ) long and weighed 147 @.@ 3 metric tons ( 145 @.@ 0 long tons ) . High @-@ explosive armour @-@ piercing shells were used which were capable of being fired 42 @.@ 0 kilometres ( 26 @.@ 1 mi ) at a rate of 1 ½ to 2 per minute . The main guns were also capable of firing 1 @,@ 360 kg ( 3 @,@ 000 lb ) 3 Shiki tsûjôdan ( " Common Type 3 " ) anti @-@ aircraft shells . A time fuze was used to set how far away the shells would explode ( although they were commonly set to go off 1 @,@ 000 metres ( 1 @,@ 100 yd ) away ) . Upon detonation , each of these shells would release 900 incendiary @-@ filled tubes in a 20 ° cone facing towards incoming aircraft ; a bursting charge was then used to explode the shell itself so that more steel splinters were created , and then the tubes would ignite . The tubes would burn for five seconds at about 3 @,@ 000 ° C ( 5 @,@ 430 ° F ) and would start a flame that was around 5 metres ( 16 ft ) long . Even though they comprised 40 % of the total main ammunition load by 1944 , 3 Shiki tsûjôdan were rarely used in combat against enemy aircraft due to the severe damage the firing of these shells inflicted on the barrels of the main guns ;

indeed , one of the shells may have exploded early and disabled one of Musashi 's guns during the Battle of the Sibuyan Sea . The shells were intended to put up a barrage of flame that any aircraft attempting to attack would have to navigate through . However , U.S. pilots considered these shells to be more of a pyrotechnics display than a competent anti @-@ aircraft weapon .

In the original design , the Yamato class ' secondary armament comprised twelve 15 @.@ 5 cm / 60 Type 3 guns mounted in four triple turrets ( one forward , one aft , two midships ) , and twelve 12 @.@ 7 cm / 40 Type 89 guns in six double @-@ turrets ( three on each side amidships ) . These had become available once the Mogami @-@ class cruisers were rearmed with 20 @.@ 3 @-@ centimetre ( 8 @.@ 0 in ) guns . With a 55 @.@ 87 @-@ kilogram ( 123 @.@ 2 lb ) AP shell , the guns had a maximum range of 27 @,@ 400 metres ( 30 @,@ 000 yd ) at an elevation of 45 degrees . Their rate of fire was five rounds per minute . The two midships turrets were removed in 1944 in favor of additional 25 @-@ millimetre ( 0 @.@ 98 in ) light anti @-@ aircraft guns .

Heavy anti @-@ aircraft defence was provided by a dozen 40 @-@ calibre 127 @-@ millimetre Type 89 dual @-@ purpose guns in six twin turrets , three on each side of the superstructure . When firing at surface targets , the guns had a range of 14 @,@ 700 metres ( 16 @,@ 100 yd ) ; they had a maximum ceiling of 9 @,@ 440 metres ( 30 @,@ 970 ft ) at their maximum elevation of 90 degrees . Their maximum rate of fire was 14 rounds a minute ; their sustained rate of fire was around eight rounds per minute .

In addition , the Yamato class originally carried twenty @-@ four 25 mm Type 96 anti @-@ aircraft guns , primarily mounted amidships . In 1944 , both Yamato and Musashi underwent significant anti @-@ aircraft upgrades in preparation for operations in Leyte Gulf using the space freed up by the removal of both midships 15 @.@ 5 cm ( 6 @.@ 1 in ) secondary battery turrets , and ended up with a complement of twenty @-@ four 12 @.@ 7 cm ( 5 @.@ 0 in ) guns , and one hundred and sixty @-@ two 2 @.@ 5 cm ( 0 @.@ 98 in ) antiaircraft guns , The 25 mm anti @-@ aircraft guns could tilt at 90 @-@ degree angles to aim at planes directly overhead , but their mountings ' lack of protection made their gunnery crews extremely vulnerable to direct enemy fire . These 25 @-@ millimetre ( 0 @.@ 98 in ) guns had an effective range of 1 @,@ 500 ? 3 @,@ 000 metres ( 1 @,@ 600 ? 3 @,@ 300 yd ) , and an effective ceiling of 5 @,@ 500 metres ( 18 @,@ 000 ft ) at an elevation of + 85 degrees . The maximum effective rate of fire was only between 110 and 120 rounds per minute because of the frequent need to change the fifteen @-@ round magazines . This was the standard Japanese light AA gun during World War II ; it suffered from severe design shortcomings that rendered it a largely ineffective weapon . According to historian Mark Stille , the twin and triple mounts " lacked sufficient speed in train or elevation ; the gun sights were unable to handle fast targets ; the gun exhibited excessive vibration ; the magazine was too small , and ... the gun produced excessive muzzle blast " . The ship was also provided with two twin mounts for the licence @-@ built 13 @.@ 2 mm Type 93 anti @-@ aircraft machine guns , one on each side of the bridge . The maximum range of these guns was 6 @,@ 500 metres ( 7 @,@ 100 yd ) , but the effective range against aircraft was only 1 @,@ 000 metres ( 1 @,@ 100 yd ) . The cyclic rate was adjustable between 425 and 475 rounds per minute ; the need to change 30 @-@ round magazines reduced the effective rate to 250 rounds per minute .

The armament on Shinano was quite different from that of her sister vessels due to her conversion . As the carrier was designed for a support role , significant anti @-@ aircraft weaponry was installed on the vessel : sixteen 12 @.@ 7 cm ( 5 @.@ 0 in ) guns , one hundred and twenty @-@ five 2 @.@ 5 cm ( 0 @.@ 98 in ) anti @-@ aircraft guns , and three hundred and thirty @-@ six 5 @-@ inch ( 13 cm ) anti @-@ aircraft rocket launchers in twelve twenty @-@ eight barrel turrets . None of these guns were ever used against an enemy vessel or aircraft .

= = = Armour = = =

Designed to engage multiple enemy battleships simultaneously , the Yamatos were fitted with heavy armour plating described by naval historian Mark Stille as providing " an unparalleled degree of protection in surface combat " . The main belt of armour along the side of the vessel was 410 millimetres ( 16 in ) thick , with additional bulkheads 355 millimetres ( 14 @.@ 0 in ) thick beyond

the main @-@ belt . Furthermore , the top hull shape was very advanced , the peculiar sideways curving effectively maximizing armor protection and structural rigidity while optimizing weight . The armour on the main @-@ turrets surpassed even that of the main @-@ belt , with plating 650 millimetres ( 26 in ) thick . Armor plates in both the main belt and main turrets was made of Vickers Hardened , which was a face @-@ hardened steel armor . Deck armour ? 75 millimetres ( 3 @.@ 0 in ) thick ? was composed of a nickel @-@ chromium @-@ molybdenum alloy . Ballistics tests at the proving ground at Kamegabuki demonstrated the deck alloy to be superior to the homogeneous Vickers plates by 10 ? 15 % . Additional plating was designed by manipulating the chromium and nickel composition of the alloy . Higher contents of nickel allowed the plate to be rolled and bent without developing fracture properties .

The relatively new procedure of arc welding was used extensively throughout the ship , strengthening the durability of the armour plating . Through this technique , the lower @-@ side belt armour , included in the ships as a response to gunnery experiments upon Tosa and the new Japanese Type 91 shell which could travel great lengths underwater , was used to strengthen the hull structure of the entire vessel . In total , the vessels of the Yamato class contained 1 @,@ 147 watertight compartments , of which 1 @,@ 065 were beneath the armoured deck .

However , the armour of the Yamato class still suffered from several shortcomings , many of which would prove fatal in 1944 ? 45 . In particular , poor jointing between the upper @-@ belt and lower @-@ belt armour created a weak @-@ point just below the waterline , causing the class to be susceptible to air @-@ dropped torpedoes . Other structural weaknesses existed near the bow of the vessels , where the armour plating was generally thinner . The hull of the Shinano was subject to even greater structural weaknesses , having been equipped with minimal armour and no watertight compartments at the time of her sinking .

= = = Propulsion = = =

The Yamato class was fitted with 12 Kanpon Boilers , which powered quadruple steam turbines . These , in turn , drove four 6 @-@ metre ( 20 ft ) propellers . This powerplant enabled the Yamato class to achieve a top speed of 27 knots ( 50 km / h ) . With an indicated horsepower of 147 @,@ 948 ( 110 @,@ 325 kW ) , the Yamato class ' ability to function alongside fast carriers was limited . In addition , the fuel consumption rate of both battleships was very high . As a result , neither battleship was used in combat during the Solomon Islands Campaign or the minor battles during the " island hopping " period of 1943 and early 1944 . The propulsion system of Shinano was slightly improved , allowing the carrier to achieve a top speed of 28 knots ( 52 km / h ) .

= = " Super Yamato " -class battleships = =

Two battleships of an entirely new , and larger , design were planned as a part of the 1942 fleet replenishment program . Designated as Design A @-@ 150 and initially named Warship Number 178 and Warship Number 179 , plans for the ships began soon after the design of the Yamato class was finished , probably in 1938 ? 39 . Everything was " essentially completed " sometime in 1941 , but with war on the horizon , work on the battleships was halted to fill a need for additional warships , such as aircraft carriers and cruisers , to replace war losses of those vital ships . The Japanese loss in the Battle of Midway , where four carriers were sunk ( out of ten , to date , in the entire navy ) , made it certain that work on the ships would never begin . In the third volume of their Battleships series , Axis and Neutral Battleships in World War II , the authors William H. Garzke and Robert O. Dulin asserted that these ships would have been the " most powerful battleships in history " because of their massive 51 cm ( 20 in ) main battery and extensive anti @-@ aircraft weaponry .

Similar to the fate of papers relating to the Yamato class , most papers and all plans relating to the class were destroyed to prevent capture at the end of the war . It is known that the final design of the ships would have had an even greater firepower and size than the Yamato class ? a main battery of six 51 cm ( 20 in ) guns in three twin turrets and secondary dual purpose armament consisting of twenty @-@ four 10 cm ( 3 @.@ 9 in ) dual mounted guns ( similar to the Akizuki @-@

class destroyers ) . The displacement was to be bigger than the Yamato 's , and a side armor belt of 46 cm ( 18 in ) was planned .

= = Destruction of records = =

On the eve of the Allies ' occupation of Japan , special @-@ service officers of the Imperial Japanese Navy destroyed virtually all records , drawings , and photographs of or relating to the Yamato @-@ class battleships , leaving only fragmentary records of the design characteristics and other technical matters . The destruction of these documents was so efficient that until 1948 the only known images of Yamato and Musashi were those taken by United States Navy aircraft involved in the attacks on the two battleships . Although some additional photographs and information , from documents that were not destroyed , have come to light over the years , the loss of the majority of written records for the class has made extensive research into the Yamato class somewhat difficult . Because of the lack of written records , information on the class largely came from interviews of Japanese officers following Japan 's surrender .

However , in October 1942 , based upon a special request from Adolf Hitler , German Admiral Paul Wenneker , attached to the German Naval Attache in Japan , was allowed to inspect a Yamato @-@ class battleship while it was undergoing maintenance in a dockyard , at which time Admiral Wenneker cabled a detailed description of the warship to Berlin . On 22 August 1943 , Erich Groner , a German naval historian , and author of the book Die Deutschen Kriegschiffe , 1815 ? 1945 , was shown the report while at the " Führer Headquarters " , and was directed to make an " interpretation " and then prepare a " design sketch drawing " of the Japanese battleship . The material was preserved by Erich Groner 's wife , Mrs. H. Groner , and submitted to publishers in the 1950s .

= = Cultural significance = =

From the time of their construction until the present day , Yamato and Musashi have carried a notable presence in Japanese culture , Yamato in particular . Upon completion , the battleships represented the epitome of Imperial Japanese naval engineering . In addition , the two ships , due to their size , speed , and power , visibly embodied Japan 's determination and readiness to defend its interests against the western powers , especially the United States . Shigeru Fukudome , chief of the Operations Section of the Imperial Japanese Navy General Staff , described the two ships as " symbols of naval power that provided to officers and men alike a profound sense of confidence in their navy . "

Yamato , and especially the story of her sinking , has appeared often in Japanese popular culture , such as the anime Space Battleship Yamato and the 2005 film Yamato . The appearances in popular culture usually portray the ship 's last mission as a brave , selfless , but futile , symbolic effort by the participating Japanese sailors to defend their homeland . One of the reasons that the warship may have such significance in Japanese culture is that the word " Yamato " was often used as a poetic name for Japan . Thus , the end of battleship Yamato could serve as a metaphor for the end of the Japanese empire .