

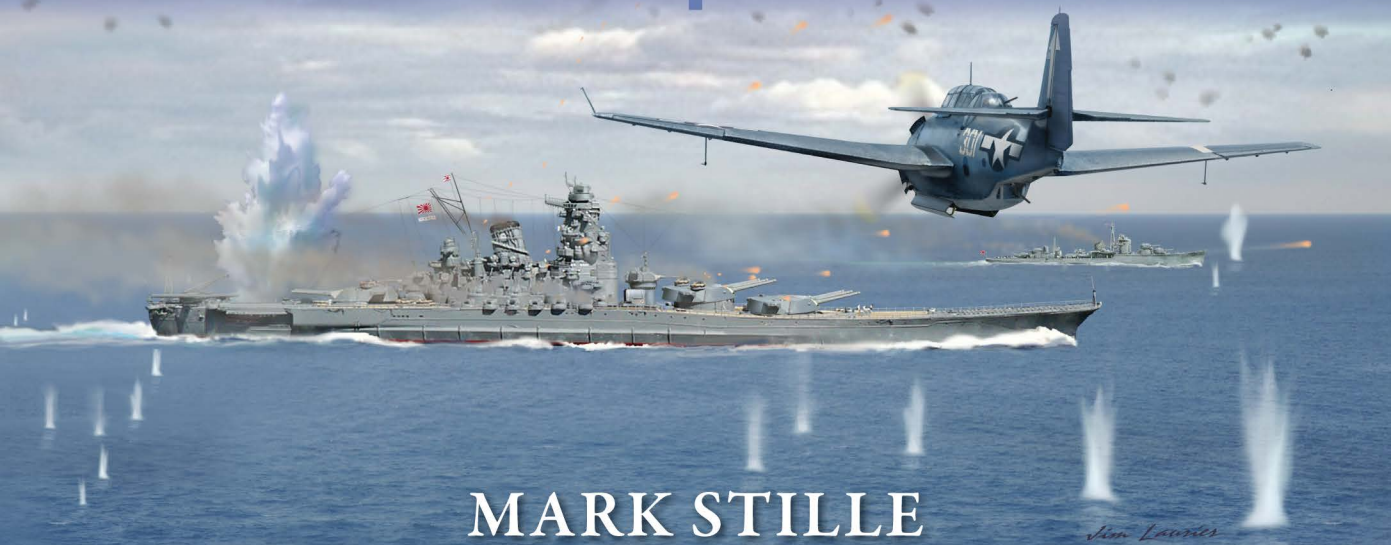


US NAVY CARRIER AIRCRAFT

VS

IJN YAMATO CLASS BATTLESHIPS

Pacific Theater 1944–45



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INTRODUCTION

The battleship was the measuring stick of every major naval power following its introduction in the late 19th century. At the turn of the 20th century, a major innovation occurred in battleship design which was so radical that all future battleships were known as “dreadnoughts” after the first ship built to this new concept. The dreadnought was the most powerful fighting machine in existence thanks to its combination of big guns, significant armored protection, and speed and range, which allowed it to operate all over the world.

The race to build more dreadnoughts was a factor leading to the outbreak of World War I, which saw the world’s leading navy, Great Britain’s Royal Navy, engage the navy of Imperial Germany in the North Sea. Despite the expectations of most naval commanders and observers that dreadnoughts would wage a series of battles for control of the North Sea, there was only a single clash between them during the war, and another involving the dreadnought’s close cousin, the battlecruiser. These engagements were inconclusive. Dreadnoughts proved to be very tough ships to sink, and neither side dared risk them in unfavorable tactical circumstances.

After World War I, the battleship remained the undisputed arbiter of war at sea. Its vulnerability to torpedoes and mines, and to certain types of fire from other dreadnoughts, was addressed by designers, who increased the ship’s underwater and horizontal protection.

The naval rivalry between Great Britain and Germany was replaced with a new rivalry between Great Britain and the United States and between the United States and Japan. All three powers were preparing to embark on a large and possibly ruinous dreadnought-building program. Indeed, the United States’ program was so massive that it promised to eclipse Japanese naval power and even surpass the Royal Navy. Faced with this prospect, all sides agreed to a series of naval arms reduction treaties,

beginning with the Washington Naval Treaty in 1922. These treaties not only controlled the size and armament of battleships, but limited the numbers that each of the five major naval powers could hold.

Against its will, Japan was forced to accede to a position of inferiority in battleships with a ration of three-to-five compared to the United States and Great Britain. This inferiority was in effect until the start of 1937. At the end of the naval treaty era, Japan took a new route to compensate for its battleship inferiority. The path the Japanese chose was to build a class of super battleship that could create a qualitative overmatch against any other existing or planned foreign rival. This was the genesis of the Yamato class.

Meanwhile, as the battleship remained the essential yardstick by which to compare major naval powers, another type of ship was entering the scene. The first aircraft carriers were little noticed since their small floatplanes or aircraft launched from tiny flightdecks possessed little offensive power. Certainly, these fragile machines posed no threat to the battleship. From these beginnings, the Royal Navy, US Navy and Imperial Japanese Navy (IJN) pressed on with carrier development. Indeed, all three navies made use of battleships or battlecruisers scheduled to be scrapped by the Washington Naval Treaty and converted them into carriers. These ships were able to carry enough aircraft to make them significant strike platforms. The aircraft they embarked were constantly being improved in range and, most importantly, their ability to carry a heavy payload. By the late 1930s the aircraft carrier at last possessed the potential to usurp the battleship as the pre-eminent naval platform.

The promise of the aircraft carrier was quickly realized at the start of World War II. British carriers played a key role in the war in the Mediterranean against the Italian *Regia Marina* and helped sink the German battleship *Bismarck*. In December 1941, the power of the aircraft carrier was put on full display when the IJN raided the main base of the US Navy's Pacific Fleet, sinking five battleships and damaging three more. Although they were all trapped in port, it was clear that the battleship could not stand up to massed air attack and hope to survive.

This is the classic photograph of *Yamato* during its sea trials in October 1941. The shot shows the ship's graceful appearance, with its raked bow and stack. [Naval History and Heritage Command, Photo Archives, Naval Subject Collection]



USS *Essex* (CV-9) in May 1945, with a large proportion of Carrier Air Group 83 on the flightdeck. The US Navy's practice of storing aircraft on both the hangar deck and the flightdeck (in what was called a deck park) allowed large numbers – principally Hellcats, Avengers and Helldivers, as seen here – to be embarked. These types duly mounted crippling attacks on Japanese surface units in 1944–45. (Real War Photos)

The US Navy quickly applied the lesson of Pearl Harbor. From the earliest point in the war, the carrier became the centerpiece of American naval striking power in the Pacific. The US Navy's prewar carrier force was small, consisting of only seven fleet carriers (just six of these were suitable for operations in the Pacific). It suffered heavy losses in 1942 stemming the Japanese tide and taking the first steps on the road to Tokyo during the second half of the year in the campaign to take and then hold Guadalcanal, in the southern Solomons. The four carriers lost in 1942 were quickly replaced in 1943 with the first of the Essex-class fleet carriers. Loaded with new aircraft replacing prewar US Navy carrier fighters, dive- and torpedo-bombers, these warships were war-winning instruments of power projection.

As the conflict in the Pacific unfolded, the IJN's carrier force atrophied while the Japanese retained their battleships, especially the two units of the Yamato class, for an expected decisive battle with the US Navy. In mid-1944 the American carrier force destroyed its Japanese counterpart. As the US Navy's advance in the second half of 1944 moved closer to Japan, the IJN was forced to commit its last major asset – its heavy surface units led by the Yamato-class super battleships. The clash of the most powerful carriers in the world against the world's largest battleships was inevitable.



CHRONOLOGY

1934

October

The IJN's Bureau of Naval Construction begins design work on a new class of super battleship.

1935

May 27

US Navy begins first aerial tests of the Mark 13 air-launched torpedo.

1936

July

IJN given authorization to build super battleships *Yamato* and *Musashi*.

1937

March

Revised design for Yamato-class super battleships ready.

November 4

Yamato laid down.

1938

March 29

Musashi laid down.

Summer

Mark 13 torpedo enters frontline service.

August

US Navy issues specifications for a new carrier scout bomber that would become the SB2C Helldiver.

1939

March 25

US Navy issues design requirements for a new carrier-capable torpedo-bomber.

May 15

Orders for 370 SB2C Helldiver dive-bombers placed with Curtiss prior to the aircraft making its first flight.

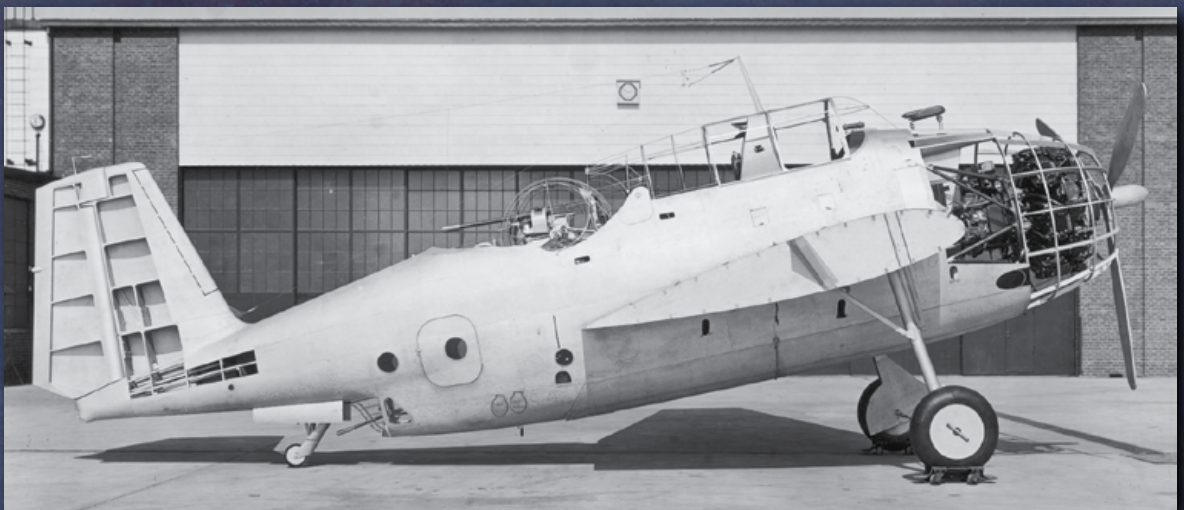
1940

August 8

Yamato launched.

November 1

Musashi launched.



Grumman's mock-up of the XTBF-1 in original form, without the dorsal fillet ahead of the vertical fin. The first prototype is thought to have flown once or twice without the fillet, which became standard on all subsequent Avengers to enhance stability. [Grumman]

December US Navy orders 286 TBF Avenger carrier-capable torpedo-bombers from Grumman.

December 18 First flight of the XSB2C-1 Helldiver prototype.

1941

August 7 First test flight of the prototype XTBF-1 Avenger torpedo-bomber.

December 16 *Yamato* commissioned.

1942

January First production TBF Avenger delivered to the US Navy.

April First TBF Avengers enter fleet service.

June TBF Avenger makes combat debut during Battle of Midway.

June 30 First flight by a production SB2C Helldiver.

August 5 *Musashi* commissioned.

December 15 First SB2C Helldiver delivery to a fleet squadron.

1943

December 25 A single torpedo launched by the submarine USS *Skate* (SS-305) hits *Yamato*, defeating its underwater protection system.

1944

October 18 Japanese *Sho-1* plan is activated in defense of the Philippines and First Diversion Attack Force, including both *Yamato* and *Musashi*, departs Lingga, near Singapore.

October 20 American forces land on Leyte, in the Philippines.

October 22 First Diversion Attack Force departs Brunei after refueling, bound for Leyte.

October 24 Battle of the Sibuyan Sea sees more than 250 US Navy carrier aircraft attack First Diversion Attack Force and sink *Musashi*.

October 25 Battle off Samar, the centermost action of the battle of Leyte Gulf, sees *Yamato* fire its 18.1-inch guns against US Navy ships for the only time.

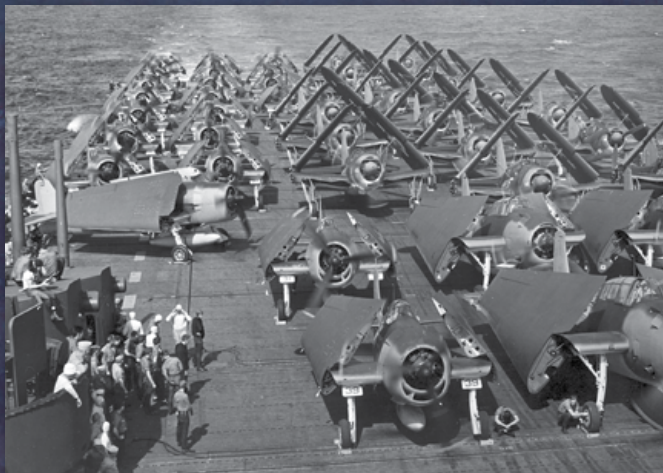
1945

March 19 *Yamato* attacked in Inland Sea, Japan, by US Navy carrier aircraft from Task Force 58 but is undamaged.

April 5 Decision made to commit *Yamato* to support suicide attacks (Operation *Ten-Go*) against US Navy invasion fleet off Okinawa.

April 6 *Yamato* departs the Inland Sea for Okinawa.

April 7 *Yamato* sunk by three waves of American carrier aircraft (from Task Groups 58.1, 58.3 and 58.4) in the East China Sea.



From late 1943 onwards, the flightdecks of virtually all Pacific Fleet fast carriers looked just like this through to VJ Day. Here, F6Fs (VF-6), TBFs (VT-6) and SB2Cs (VB-6) of Carrier Air Group 6 run their engines up prior to launching from USS *Intrepid* (CV-11) in early 1944. (US Navy)

DESIGN AND DEVELOPMENT

US NAVY CARRIER AIR GROUP

Going into the Pacific War, US Navy fleet carriers embarked four units – one fighter, one scouting, one dive-bomber, and one torpedo-bomber squadron. The scouting and bombing squadrons were equipped with the same aircraft – the Douglas SDB Dauntless – and performed essentially the same role. Indeed, later in the war the scouting and bombing squadrons were combined. The standard squadron size was 18 aircraft. This number of fighters per carrier air group subsequently proved insufficient in the face of the Japanese air threat, and it had been increased by mid-1942.

Early war experience also showed that the real offensive power of a carrier air group was in its dive-bombers, since the torpedo-bomber squadrons were equipped with obsolescent Douglas TBD-1 Devastators armed with the then unreliable Mark 13 air-launched torpedo. This changed in mid-1942 with the arrival of the Grumman TBF Avenger torpedo-bomber, but problems persisted

TBD-1 Devastator BuNo 0325 of VT-6, embarked in USS *Enterprise* (CV-6), performs a practice drop with a Mark 13 torpedo on October 20, 1941. This particular TBD-1 survived the carnage of the Battle of Midway to eventually become the very last Devastator to be stricken, on November 30, 1944, from the US Navy. The aircraft was subsequently scrapped.

