

= HMS King George V (41) =

HMS King George V (pennant number 41) was the lead ship of the five British King George V @-@ class battleships of the Royal Navy . Laid down in 1937 and commissioned in 1940 , King George V operated during the Second World War as part of the British Home and Pacific Fleets . In May 1941 , along with HMS Rodney , King George V was involved in the hunt for and pursuit of the German battleship Bismarck , eventually inflicting severe damage which led to the German vessel sinking . On 1 May 1942 destroyer HMS Punjabi sank after a collision with King George V in foggy conditions . King George V took part in Operation Husky (the allied landings in Sicily) and bombarded the island of Levanzo and the port of Trapani . She also escorted part of the surrendered Italian Fleet , which included the battleships Andrea Doria and Caio Duilio , to Malta . In 1945 King George V took part in operations against the Japanese in the Pacific .

Following the war , King George V spent three years as the flagship of the British Home Fleet , was placed in reserve in 1949 , and scrapped eight years later .

= = Design = =

= = = General characteristics = = =

King George V was built by Vickers @-@ Armstrong at Walker Naval Yard , Newcastle upon Tyne ; she was laid down on 1 January 1937 , launched on 21 February 1939 and commissioned on 11 December 1940 . The ship had an overall length of 745 ft (227 @.@ 08 m) , a beam of 112 ft (34 @.@ 24 m) and a draught of 34 ft (10 @.@ 41 m) . She displaced 38 @,@ 031 tons at normal load and 42 @,@ 237 tons at full load . After her refit in 1944 , she displaced 44 @,@ 460 tons at full load . She could carry 3 @,@ 918 tons of fuel oil , 192 tons of diesel oil , 256 tons of reserve feed water and 444 tons of freshwater . Based on the designed fuel consumption , range was : 4000 nautical miles at 25 knots , 10 @,@ 250 nautical miles at 15 knots and 14 @,@ 400 nautical miles at 10 knots . However , in practice fuel consumption was much higher , and at 10 knots the actual range was about 7000 nautical miles . Designed within the tight 35 @,@ 000 ton limitations of the Washington Naval Treaty , wartime service necessitated increases over the design displacement , seriously reducing freeboard and affecting seaworthiness . This was most acute at the already low bow . With too little buoyancy forward the bows were easily buried even in moderate seas , with spray washing up over both forward turrets . Heavy seas could flood ? A ? turret , drenching both men and machinery within .

= = = Propulsion = = =

King George V was equipped with eight Admiralty boilers . This configuration was a little more conventional than the Nelson class , with boiler rooms placed side by side and with each pair associated with a turbine room astern of them . The total heating surface of the boiler plants in King George V was 78 @,@ 144 sq. ft . The 416 ton boiler installation produced more than 100 @,@ 000 shaft horsepower , giving a top speed of 28 knots . The eight boilers were more economic in space and fuel than the twenty @-@ four boilers in the battlecruiser HMS Hood . Fewer , but larger , boilers lowered the weight per unit of heat delivered , as did increased boiler efficiency and consumption of fuel per unit area of heating surface . This made King George V the fastest battleship in the British fleet but slower than the German , French or the new Italian capital ships , or the battlecruisers HMS Hood , Repulse and HMS Renown .

King George V had four sets of Parsons geared turbines . Two main turbines were arranged in series and drove a shaft through double helical gears . An astern turbine was incorporated in the exhaust casing of the low @-@ pressure turbine , and a cruising turbine was coupled directly to the high @-@ pressure turbine . A speed of 28 @.@ 5 knots was expected at standard displacement and 27 @.@ 5 knots at full @-@ load displacement on normal output ; corresponding speeds at

overload condition were 29 @ 25 and 28 @ 25 knots respectively . The turbine unit was a low speed type (2 @ 257 rpm) coupled to a single reduction gear which produced 236 rpm at the propeller shaft .

== = Armament == =

== = Main battery == =

The tight limitations of the Washington Naval Treaty raised many challenges and required difficult compromises if they were to be met . To avoid the class being outgunned by the new ships of foreign navies , especially as by the mid 1930s the Treaty had been renounced by Japan and Italy , Churchill wrote to the First Lord of the Admiralty in 1936 , voicing strong objections to the proposed armament of 10 14 inch guns . His proposal was for 9 16 inch guns . However , when completed King George V mounted ten 14 inch (360 mm) guns . They were mounted in one Mark II twin turret forward and two Mark III quadruple turrets , one forward and one aft . They could be elevated 40 degrees and depressed 3 degrees . Training arcs were : " A " turret , 286 degrees ; " B " turret , 270 degrees and " Y " turret , 270 degrees . Training and elevating was achieved through a hydraulic drive , with rates of two and eight degrees per second , respectively . A full gun broadside weighed 15 @ 950 pounds ; a salvo could be fired every 40 seconds . The quadruple turrets weighed 1 @ 582 tons , the twin turret 915 tons . The turrets were designed by the Vickers Armstrong 's Elswick Works , but sets of each type of equipment were manufactured by Vickers Armstrongs in Barrow . A considerable amount of design effort was expended to make the turrets as flashtight as possible . This complicated the mechanical design of the turrets , particularly the quadruple mountings . Due to insufficient clearances and slightly distorted link mechanisms , failures in the intricate safety interlocks in the loading sequence for antirash precautions caused jams during drills and practice firing . King George V used an Admiralty Fire Control Table Mark IX to control her main armament .

== = Secondary battery == =

The secondary armament consisted of 16 x 5 @ 25 inch (133 mm) guns in eight twin mounts , weighing 81 tons each . They were grouped at the four corners of the citadel , with a twin mount on the main deck and another superimposed above it nearer amidships . This disposition gave better arcs of fire , freedom from blast , more separation of the magazines and a better arrangement of the ammunition supply . The cupolas for these mounts revolved on either the upper or superstructure deck ; between deck mountings travelled on roller paths on the armoured deck . This permitted a flat @ trajectory or high @ angle fire . Loading was semi @ automatic , normal rate of fire was ten to twelve rounds per minute . The maximum range of the Mk I guns was 24 @ 070 yards (22 @ 009 @ 6 m) at a 45 @ degree elevation , the anti @ aircraft ceiling was 49 @ 000 feet (14 @ 935 @ 2 m) . The guns could be elevated to 70 degrees and depressed to 5 degrees . However , the guns could only practically fire seven to eight rounds per minute , due to the heavy weight of the shell and the fact that the 5 @ 25 inch round was semi @ fixed , requiring the crew to separately load the cartridge and shell into the breech . King George V introduced the High Angle Control System Mark IVGB anti @ aircraft fire control system to the Royal Navy , which , along with the Mk IV Pom @ Pom Director , pioneered the use of the Gyro Rate Unit .

== = Anti @ aircraft battery == =

The King George V design had four 0 @ 5 inch quadruple machine gun mounts , but in 1939 these were replaced by two Mark VI pom @ pom mounts . In 1940 , to combat air attack , four Unrotated Projectile mountings were fitted , on " B " turret , two on " Y " turret , one replaced a

pom @-@ pom mount added in 1939 at the stern . The pom @-@ poms mounted in the King George V were designed and produced by Vickers Armstrongs as a result of a post @-@ First World War requirement for a multiple mounting which was effective against close @-@ range bombers or torpedo planes . The first model , tested in 1927 , was superior to anything developed in other countries at the time and in 1938 the Mark VI * had a muzzle velocity of 2 @, @ 400 feet per second , a 1 @. @ 594 @-@ inch bore and a barrel length of 40 calibres . They fired a 1 @. @ 8 @-@ pound shell at a rate of 96 ? 98 rounds per minute for controlled fire and 115 rounds per minute for automatic fire . The range of the Mark VI * was 6 @, @ 800 yards , at a muzzle velocity of 2 @, @ 300 feet per second . The Mark VI octuple mount weighed 16 tons . The Mark VII quadruple mount weighed 10 @. @ 8 tons if power operated ; it could be elevated to 80 degrees and depressed to 10 degrees at a rate of 25 degrees per second which was also the rate of train . The normal ammunition supply on board for the Mark VI was 1 @, @ 800 rounds per barrel . King George V introduced the Mk IV Pom @-@ pom director to the Royal Navy in 1940 , becoming the first ship in the world to feature gyroscopic target tracking in tachymetric anti @-@ aircraft directors .

= = Operational history = =

The first of her class to be completed , King George V was commissioned at her shipyard and sailed for Rosyth in Scotland on 16 October 1940 ; there she took on board her ammunition and began her sea trials . By the end of the year she had joined the Home Fleet at Scapa Flow . She crossed the Atlantic early in 1941 to take Lord Halifax , the Ambassador to the United States , to Annapolis and covered an east @-@ bound convoy on her return , arriving back at Scapa Flow on 6 February . Her next task was to provide distant cover for Operation Claymore , the Royal Marines raid on the Lofoten islands off the north @-@ west coast of Norway . She escorted further Atlantic convoys , HX 104 and HX 115 during March .

= = = Action with Bismarck = = =

When Bismarck along with the heavy cruiser Prinz Eugen broke out into the Atlantic Ocean , King George V sailed on 22 May with HMS Victorious and eleven cruisers and destroyers in support of the cruiser patrols off Iceland . King George V was the flagship of Admiral Sir John Tovey , who commanded the force . King George V was still 300 to 400 miles away on the morning of 24 May , when HMS Prince of Wales and Hood engaged both Bismarck and Prinz Eugen . Hood was sunk and Prince of Wales was damaged when taking fire from both Bismarck and Prinz Eugen and forced to retire . The German Battleship Bismarck , although damaged , and Prinz Eugen continued south .

The British re @-@ located Bismarck at 10 : 30 on 26 May , when a Catalina flying boat of RAF Coastal Command sighted her , heading for the French port of Brest . Rodney and King George V were still about 125 miles away . The aircraft carrier HMS Ark Royal was ordered to launch an air attack , and at 22 : 25 her torpedo bombers , a flight of Fairey Swordfishes damaged Bismarck , slowing her down and jamming her rudder , forcing her to turn back out into the Atlantic , away from the safety of port . At 15 : 00 Rodney joined King George V and they maintained 22 knots ? which was nearly maximum speed for Rodney . King George V had only 32 percent of her fuel left while Rodney had only enough fuel to continue the chase at high speed until 8 : 00 the following day .

Admiral Tovey signalled his battle plan to Rodney just before sunrise on 27 May ; she was free to manoeuvre independently as long as she conformed generally to the movements of King George V . Both ships were to close the range to 15 @, @ 000 yards as quickly as possible , then turn for broadside fire .

At 08 : 15 HMS Norfolk spotted Bismarck and turned away out of range . She soon sighted the other British ships off her starboard quarter , and informed them that Bismarck was roughly 50 @, @ 000 yards to the southwest . By 08 : 43 King George V had Bismarck in sight , at 20 @, @ 500 yards . Four minutes later Rodney opened fire . King George V followed suit in less than a minute .

Bismarck answered almost immediately , straddling Rodney on her second salvo . By 08 : 59 King George V had closed to 16 @, @ 000 yards and all her 14 @-@ inch guns were firing ; Rodney was firing full 16 @-@ inch salvos . Bismarck concentrated all her remaining guns on King George V , but only an occasional shell came close . At 09 : 14 King George V , at 12 @, @ 000 yards , had opened fire with her 5 @. @ 25 @-@ inch guns , and Rodney had moved to 8 @, @ 500 ? 9 @, @ 000 yards .

At 09 : 27 a shell hitting Bismarck penetrated the hydraulic machinery in turret ' Anton ' and disabled it , causing the guns to run down to maximum depression . Her topsides were wrecked , and a large fire burned amidships . After firing steadily for over 30 minutes , without any problems , King George V , by 09 : 27 , began having trouble with her main battery , and from that point onward every salvo missed at least one gun due to failures in the safety interlocks for antirash protection and from ammunition feed jams . At 10 : 21 , with Bismarck silenced and obviously sinking , Admiral Tovey detailed the cruiser Dorsetshire to finish her off with torpedoes . King George V fired 339 14in (354mm) and over 700 5.25in (133mm) shells during the action . As both Rodney and King George V were low on fuel they returned to port at 19 knots (35 km / h) , escorted by eleven destroyers to guard against German air or submarine attack . The next day , after the escort was reduced to three destroyers , four German aircraft did attack but scored no hits . Both King George V and Rodney returned to port safely , but the destroyer HMS Mashona , sent ahead to refuel , was bombed and sunk .

= = = Collision damage = = =

After repairs and adjustments to her guns , King George V attacked German shipping in the Glom Fjord , Norway , in October 1941 . She then covered convoys to Russia . On 1 May 1942 she was operating with USS Washington as an escort to Convoy PQ 15 , and collided with the destroyer HMS Punjabi , which had manoeuvred to avoid a mine and crossed her bow in dense fog . Punjabi was cut in two and King George V had 40 feet of her bow badly damaged . King George V entered the Gladstone Dock in Liverpool on 9 May for repairs by Cammell Laird , and returned to Scapa Flow on 1 July 1942 to resume convoy escort duty .

= = = Mediterranean operations = = =

In May 1943 , King George V was moved to Gibraltar in preparation for Operation Husky . King George V and her sister ship HMS Howe were allocated to the reserve covering group when the operation got under way on 1 July . The two ships bombarded Trapani in Sicily on 12 July and also helped defend against an air raid whilst in Algiers prior to departing for Operation Avalanche , (the Allied invasion of Italy) . The two ships also bombarded the islands of Levanzo and Favignana , after which they were in the reserve group for the Salerno landings (Operation Avalanche) which began on 9 September . King George V escorted part of the Italian Fleet , including the battleships Andrea Doria and Caio Duilio , to Malta after the armistice and with Howe provided cover for the 1st Airborne Division who were transported to Taranto in support of Operation Slapstick from 9 to 11 September by the cruiser USS Boise and the fast minelayer HMS Abdiel . The battleship then escorted a naval force which occupied the Italian naval base at Taranto . She later escorted surrendered Italian ships from Malta to Alexandria . After bombarding German positions during the Salerno landings , King George V returned to the United Kingdom .

= = = Pacific operations = = =

King George V was in Liverpool for an overhaul from March to June , 1944 ; it included the installation of additional radar gear , more anti @-@ aircraft guns , improved accommodation and ventilation . On 28 October 1944 King George V sailed from Scapa Flow under the command of Admiral Sir Bruce Fraser to join other Royal Navy units assembling at Trincomalee in Ceylon . A stop at Alexandria en route enabled her to divert to Milos in the Aegean Sea to bombard German

positions . On 1 December she resumed her eastward journey , arriving in Trincomalee on 15 December . King George V got under way again on 16 January 1945 . The flotilla , known as Task Force 63 , comprised King George V , the aircraft carriers HMS Illustrious , Indomitable , Indefatigable and Victorious , four cruisers and ten destroyers . The first stage of the voyage was covering the 11 @, @ 000 nautical miles to Sydney ; en route the force attacked oil refineries on Sumatra in Operation Meridian . They also practised replenishment @-@ at @-@ sea and beat off a Japanese air attack , with King George V 's anti @-@ aircraft crews shooting down one Mitsubishi Ki @-@ 21 .

Joined by Howe and re @-@ designated Task Force 57 , the British Pacific Fleet was again involved in operations in late March 1945 , when it launched attacks on the Sakishimo @-@ Gunto airfields , a task it repeated in early May . On 4 May 1945 King George V led battleships and cruisers in a forty @-@ five @-@ minute bombardment of Japanese air facilities in the Ryukyu Islands . As the Allies approached the Japanese homeland , King George V was dispatched in mid @-@ July to join the US battleships in a bombardment of industrial installations at Hitachi . King George V fired 267 rounds from her 14 @-@ inch guns during this operation . The task force then moved on to Hamamatsu in southern Honshu , where it carried out a further bombardment of aviation factories . During the Okinawa campaign , the battleship supported four fast carriers of the British Pacific Fleet . Her last offensive action was a night bombardment of Hamamatsu on 29 and 30 July 1945 .

With the dropping of the atomic bombs on Hiroshima and Nagasaki and the surrender that followed , King George V moved with other units of the British Pacific Fleet into Tokyo Bay to be present at the surrender ceremonies .

= = = Post war = = =

In January 1946 she conveyed the Duke and Duchess of Gloucester on an official visit to Australia , returning to Portsmouth in March . She was flagship of the Home Fleet until December 1946 , after becoming a training vessel .

King George V 's active naval career was terminated by the Royal Navy in June 1950 , when she and her sister @-@ ships went into reserve and were mothballed . King George V was the first large warship to be preserved in this fashion . This involved sealing the armament , machinery and boilers against damp and installing dehumidifiers throughout . In December 1955 , she was downgraded to extended reserve and in 1957 the decision was taken to scrap the four ships . The following year King George V was moved from her berth in Gareloch to the ship breaking firm of Arnott Young and Co. in Dalmuir to undergo dismantling .

= = Refits = =

During her career , King George V was refitted on several occasions in order to update her equipment . The following are the dates and details of the refits undertaken :