

KING GEORGE V CLASS BATTLESHIP

BRIEFING

written by
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Key Information

Country of Origin:	Great Britain
Manufacturers:	Vickers-Armstrong, Cammell Laird, John Brown, Swan Hunter and Wigham Richardson, Fairfield
Major Variants:	-
Role:	Ship of the Line, Shore Bombardment
Operated by:	Royal Navy
First Laid Down:	1 January 1937
Last Completed:	29 August 1942
Units:	<i>King George V, Prince of Wales, Duke of York, Anson, Howe</i>

Overview

The design of the *King George V* class battleships began in the period of uncertainty when the inter-war naval treaties were coming to an end, but when there was no clear direction on the future for naval arms limitation. Britain was pushing for a limit of 14 inches to be imposed for main guns, whilst other nations also had their own agendas. The critical path in capital ship construction time was the production of the main guns, including the mountings and turrets, and as the Admiralty wanted the ships to be in service in 1940 (to match the *Bismarck* and *Tirpitz*) contracts had to be placed before the naval treaty talks were concluded. In order to place contracts for the guns, outline design work had to be completed by this date also, and this necessity had a profound influence on the design of these ships.

The main guns were chosen to be 14 inch (365 mm) calibre. This was in line with the British diplomatic moves intended to result in a 14 inch limitation on all new capital ships. These negotiations had broken down by 1937, however the guns had to be ordered in mid-1936, and the six or 12 month delay entailed in changing the design was considered to be grossly unacceptable. The initial intention was to fit 12 guns, however it was decided to increase protection around the magazines and in order to remain within the 35,000 ton treaty limitations B turret was reduced to two guns.

In selecting the secondary armament the British followed the French example of fitting dual HA/LA (high angle / low angle) secondary guns, in stead of the traditional separate secondary guns for surface targets and smaller tertiary guns for air targets (as the Germans and Italians were doing). This had the advantage of giving more guns for either air defence or surface defence, provided that both were not required at the same time. A new design of 5.25 inch (140 mm) gun was chosen, with 16 guns fitted in eight power-operated turrets (four on each side).

Close-range anti-aircraft defence was light, in common with most ships at that time. The eight-barrelled pom-pom was chosen as the primary close-range weapon, and six were fitted to the first two ships in the class. This was increased to eight in subsequent vessels. Finally, several UP (unrifled projector) rocket mounts were fitted in the first two ships, which fired an explosive charge attached to a parachute and a line. As these were clearly useless the subsequent ships replaced them with 20 mm (0.8 inch) machineguns. The AA armament was considerably increased as the war progressed.

Armour protection gave the ships a theoretical immunity zone of 17,200 yards to 32,000 yards (15,727 m to 29,261 m) against 15 inch (381 mm) shells, meaning that at ranges below 17,200 yards a 15inch shell could be expected to penetrate the side armour, and above 32,000 yards a 15 inch shell could be expected to penetrate the deck armour. It must be stressed that this is a theoretical calculation, as in practice several factors (particularly the sea state) affect the actual resistance to shells at the instant they hit, and the immunity zone is constantly changing as the ship heaves, rolls and pitches.

The speed of these ships was critical, as the existing British battleships could not hope to catch new capital ships. They were designed for 27.5 knots at deep load displacement, which was an increase of 6.5 knots over the previous class.

A catapult and two hangars were provided for the Supermarine Walrus amphibious biplane, intended to act in a reconnaissance role and to spot the fall of shot. As radar became able to fulfil these roles the aircraft were removed, eliminating a major fire hazard.

These ships gave magnificent service, and had a profound influence on the war (for example, the *Prince of Wales* caused the damage that caused the *Bismarck* sortie to be aborted, the *King George V* helped destroy the *Bismarck* in the final engagement, and the *Duke of York* caused the damage that forced the *Scharnhorst* to slow and be caught). Nevertheless, there were problems with the main guns (the new design had an unacceptable number of stoppages) and the bow design (with spray affecting A and B turret rangefinders, and sometimes causing water to enter A turret). These problems were caused or exacerbated by the naval position that Britain found herself in as, for example, the problems with the guns were identified during design but could not be fixed due to the need to have the ships in service to counter German warships. In the final analysis, they were able to fulfil their defined role despite their shortcomings, and proved to be equal to the task of containing the enemy surface threat.

Units

<i>King George V</i>	Builder	Laid Down	Launched	Completed	Left Service
	Vickers-Armstrong	1 Jan 1937	21 Feb 1939	1 Oct 1940	17 Dec 1957
<p>After taking Britain's new ambassador to the United States she took part in the Loften Islands raid in March 1941, then returned to the Atlantic to protect convoys against the <i>Gniesnau</i> and <i>Scharnhorst</i>, which were at sea. On 22 May 1941 she sailed to intercept the <i>Bismarck</i>, and was part of the force that destroyed her on 27 May. She then went in to dock for work on her main guns. In October 1941 she attacked German ships in Glom Fjord, Norway, before beginning Arctic convoy work. On 1 May 1942 she collided with the destroyer <i>Punjabi</i>, and returned to duty on 1 July after repairs. In May 1943 she took part in the invasion of Sicily, remaining in the Mediterranean for the Salerno operation before returning to the UK. She was refitted between March and June 1944, and was transferred to the British Pacific Fleet in October. She conducted several bombardments of Japanese facilities, and was present at the formal Japanese surrender on 2 September 1945.</p>					
<i>Prince of Wales</i>	Builder	Laid Down	Launched	Completed	Left Service
	Cammell Laird	1 Jan 1939	3 May 1939	31 Mar 1941	10 Dec 1941
<p>After working up, the <i>Prince of Wales</i> was declared fit to join the fleet on 21 May 1941, and that same day she was ordered to sea to intercept the <i>Bismarck</i> breakout. Along with the <i>Hood</i>, she intercepted the <i>Bismarck</i> on 24 May and straddled her with her third or fourth salvo, scoring two hits and causing sufficient damage to cause the <i>Bismarck</i> to decide to return to base. After the loss of the <i>Hood</i> she shadowed the <i>Bismarck</i>, but lost her in poor visibility and returned to port. After repairs, she took Winston Churchill to the Atlantic Charter meeting in August 1941, and was later assigned to the Mediterranean where she saw action against aircraft whilst escorting convoys. She was ordered to Singapore in October 1941, and sortied from there to attack Japanese landings in Malaya with the <i>Repulse</i>. On 10 December 1941 she was lost, along with the <i>Repulse</i>, to Japanese aircraft.</p>					
<i>Duke of York</i>	Builder	Laid Down	Launched	Completed	Left Service
	John Brown	5 May 1937	28 Feb 1940	4 Nov 1941	1957
<p>The <i>Duke of York</i> began service escorting Arctic convoys, with brief breaks to transport Winston Churchill to the United States and to take part in the invasion of North Africa in October 1942. She was present when the German battle cruiser <i>Scharnhorst</i> sortied to attack convoy JW55B in December 1943. Action was joined on 26 December, the <i>Duke of York</i> scoring several hits thereby slowing the <i>Scharnhorst</i> enough to enable her to be caught and sunk. She continued in the Arctic until September 1944, then went for refit in Liverpool. She left for the Pacific in April 1945, and was the Flagship of the British Pacific Fleet at the Japanese surrender.</p>					
<i>Anson</i>	Builder	Laid Down	Launched	Completed	Left Service
	Swan Hunter and Wigham Richardson	22 Jul 1937	24 Feb 1940	22 Jun 1942	1957
<p>The <i>Anson</i> was the only one of the class never to fire her main guns in anger. She saw service covering Arctic convoys until June 1944, when she was sent for modification to Plymouth. In April 1945, along with the <i>Duke of York</i>, she sailed for the Pacific to join the British Pacific Fleet, although she arrived too late to see any action.</p>					
<i>Howe</i>	Builder	Laid Down	Launched	Completed	Left Service
	Fairfield	1 Jun 1937	9 Apr 1940	29 Aug 1942	1957
<p>The <i>Howe</i> was involved in the Arctic convoys until May 1943. In July 1943 she was transferred to the Mediterranean for the invasion of Sicily, and after the surrender of Italy in September she returned to the UK. She was sent for refit in Devonport in December 1943, in preparation for service in the Pacific. This began in Ceylon in August 1944, where she became flagship of the British Pacific Fleet. She saw action during the Okinawa campaign, bombarding Japanese islands and providing anti-aircraft fire to the fleet. In June 1945 she again went in to dock for overhaul, this time in Durban, and was still there when the war ended.</p>					

Specifications

	King George V (As-built) ^[Note 1]	Howe (As-built) ^[Note 1]
Displacement		
- <i>Standard</i>	38,031 tons	39,450 tons
- <i>Full Load</i>	42,237 tons	42,530 tons
Length (OA)	745 ft 0.13 in (227.08 m)	745 ft 0.25 in (227.08 m)
Length (WL)	740 ft 0.25 in (225.56 m)	740 ft 0.25 in (225.56 m)
Length (PP)	700 ft 0.25 in (213.37 m)	700 ft 0.25 in (213.37 m)
Beam	112 ft 4.25 in (34.25 m)	112 ft 6.25 in (34.30 m)
Draft (Standard)	29 ft (8.84 m)	29 ft (8.84 m)
Draft (Full Load)	32 ft 6 in (9.91 m)	34 ft 10.5 in (10.63 m) ^[Note 2]
Block Coefficient	0.60	0.60
Propulsion	111,700 shp (83.3 MW)	112,930 shp (84.2 MW)
Speed	28 kts	27.5 kts
Weapons		
Main Guns	10 x 14 in (356 mm) (2 x 4, 1 x 2)	10 x 14 in (356 mm) (2 x 4, 1 x 2)
Other Guns	16 x 5.25 in (133 mm) in eight double mounts 32 x 2 lb (0.91 kg) pom-poms in four octuple mounts 4 x UP launchers in four single mounts	16 x 5.25 in (133 mm) in eight double mounts 48 x 2 lb (0.91 kg) pom-poms in six octuple mounts 18 x 20 mm (0.8 in) machineguns in 18 single mounts
Magazine	1,000 x 14 in (356 mm) rounds 6,400 x 5.25 in (133 mm) rounds 86,400 x pom-pom rounds	1,000 x 14 in (356 mm) rounds 6,400 x 5.25 in (133 mm) rounds 115,200 x pom-pom rounds
Armour		
Side Belt	13.75 in tapering to 5.5 in (349 to 140 mm)	13.75 in tapering to 5.5 in (349 to 140 mm)
End Bulkheads	11.76 in (299 mm) fwd 9.8 in (249 mm) aft	11.76 in (299 mm) fwd 9.8 in (249 mm) aft
Magazine	14.7 in (373 mm) sides 6 in (152 mm) top	14.7 in (373 mm) sides 6 in (152 mm) top
Barbette	11.76 in (299 mm) forward 12.75 in (324 mm) sides 10.82 in (275 mm) aft	11.76 in (299 mm) forward 12.75 in (324 mm) sides 10.82 in (275 mm) aft
Turret	12.75 in (324 mm) face 8.84 in (225 mm) sides 5.88 in (149 mm) roof	12.75 in (324 mm) face 8.84 in (225 mm) sides 5.88 in (149 mm) roof
Deck	5 in (127 mm)	5 in (127 mm)
Miscellaneous		
Aircraft	2 Supermarine Walrus	2 Supermarine Walrus
Compliment	1,409	1,556

Note 1: Specifications are given for the first and the last of the class. Others differ in detail, particularly with respect to close-range armament.

Note 2: Draft as-built is unknown. Draft given is for deep load displacement of 45,226 tons.