

= HMS Vindictive (1918) =

HMS Vindictive was a warship built during the First World War for the Royal Navy (RN) . Originally designed as a Hawkins @-@ class heavy cruiser and laid down under the name Cavendish , she was converted into an aircraft carrier while still building . Renamed in 1918 , she was completed a few weeks before the end of the war and saw no active service with the Grand Fleet . The following year she participated in the British campaign in the Baltic against the Bolsheviks during which her aircraft made numerous attacks against the naval base at Kronstadt . Vindictive returned home at the end of the year and was placed in reserve for several years before her flight decks were removed and she was reconverted back into a cruiser . The ship retained her aircraft hangar and conducted trials with a aircraft catapult before she was sent to the China Station in 1926 . A year after her return in 1928 , she was again placed in reserve .

Vindictive was demilitarized and converted into a training ship in 1936 ? 1937 . At the beginning of the Second World War she was converted into a repair ship . Her first role after the conversion was completed in early 1940 , however , was to transport troops during the Norwegian Campaign . She was then sent to the South Atlantic to support British ships serving there and , in late 1942 , to the Mediterranean to support the ships there . Vindictive returned home in 1944 and was damaged by a German torpedo off the coast of Normandy after the Allies invaded France . She was reduced to reserve after the war and sold for scrap in 1946 .

= = Background and description = =

The Hawkins @-@ class cruiser was designed to hunt enemy commerce raiders overseas . This required a large ship to provide the necessary endurance for sustained operations away from supporting bases and high speed to catch the raiders . The design was also given high freeboard to allow it to maintain its speed in heavy weather . Sir Eustace Tennyson d 'Eyncourt , the Director of Naval Construction , included both coal and oil @-@ fired boilers to provide the ship with fuel no matter the supply conditions . Four ships were ordered , named after famous Elizabethan seafarers , in 1915 and the fifth and last was ordered in April 1916 , named HMS Cavendish after the adventurer and circumnavigator Thomas Cavendish . By this time the threat from German cruisers and raiders had ended , so construction proceeded slowly .

The cruisers had an overall length of 605 feet (184 @.@ 4 m) , a beam of 65 feet (19 @.@ 8 m) , and a mean draught of 19 feet 3 inches (5 @.@ 9 m) at deep load . They were designed to displace 9 @,@ 750 long tons (9 @,@ 906 t) and had a complement of 37 officers and 672 enlisted men .

The ships had four Parsons geared steam turbines , each of which drove one propeller shaft . The turbines were designed to produce a total of 60 @,@ 000 shaft horsepower (45 @,@ 000 kW) for a speed of 30 knots (56 km / h ; 35 mph) . Steam for the turbines was provided by 12 Yarrow boilers ; 8 of these were oil @-@ fired while the remaining 4 used coal . They had a stowage capacity of 800 long tons (810 t) of coal and 1 @,@ 600 long tons (1 @,@ 600 t) of fuel oil , giving her a range of 5 @,@ 400 nautical miles (10 @,@ 000 km ; 6 @,@ 200 mi) at a speed of 14 knots (26 km / h ; 16 mph) .

The main armament of the Hawkins @-@ class cruisers consisted of seven 45 @-@ calibre 7 @.@ 5 in (190 mm) Mk VI guns in pivot mounts . They were arranged in two superfiring pairs , one each fore and aft of the superstructure , one on each broadside abreast the rear funnel , and the last was on the quarterdeck at the same level as the lower of the rear superfiring pair ; they were designated 1 through 7 from front to rear . At maximum elevation these guns fired a 200 @-@ pound (91 kg) shell to a range of 21 @,@ 114 yards (19 @,@ 307 m) .

Their secondary armament comprised a dozen quick @-@ firing (QF) 3 @-@ inch 20 cwt guns . Eight of these were on low @-@ angle mounts intended for use against torpedo boats and the remaining four were on high @-@ angle mounts for anti @-@ aircraft defence . They also mounted two submerged tubes , one on each broadside , and four above @-@ water tubes , two on each broadside , for 21 @-@ inch torpedoes .

The Hawkins @-@ class cruisers were protected with an armour that had a maximum thickness of 4 inches abreast the ships ' magazines and a minimum thickness of 1 @. @ 5 inches (38 mm) . It consisted of two layers of high @-@ tensile steel of varying thicknesses that covered most of the ships ' sides . The decks had a maximum thickness of 1 ? 1 @. @ 5 in (25 ? 38 mm) over the engine rooms , boilers , and the steering gear . The conning tower and its communication tube were protected by the only Krupp cemented armour in the ships and had thicknesses of 3 inches and 2 inches (51 mm) respectively .

= = = Conversion into an aircraft carrier = = =

In January 1917 , the Board of Admiralty reviewed the navy 's aircraft carrier requirements and decided to order two ships fitted with a flying @-@ off deck as well as a landing deck aft . The initial order had to be cancelled in April 1917 for lack of building facilities , so the Admiralty decided to convert Cavendish , already under construction , in June 1917 .

No. 2 7 @. @ 5 @-@ inch gun , two 3 @-@ inch guns and the conning tower were removed and the forward superstructure was remodelled into a 78 by 49 feet (23 @. @ 8 by 14 @. @ 9 m) hangar with a capacity for six reconnaissance aircraft . The hangar roof , with a small extension , formed the 106 @-@ foot (32 m) flying @-@ off deck . The aircraft were hoisted up through a hatch at the aft end of the flying @-@ off deck by two derricks . The 193 by 57 feet (58 @. @ 8 by 17 @. @ 4 m) landing deck required the removal of Nos. 5 and 6 7 @. @ 5 @-@ inch guns and moving the four 3 @-@ inch AA guns to an elevated platform between the funnels , in lieu of the 3 @-@ inch guns intended for that position . A port side gangway 8 feet (2 @. @ 4 m) wide connected the landing and flying @-@ off decks to allow aircraft with their wings folded to be wheeled from one to the other . A crash barrier was hung from " the gallows " at the forward end of the landing on deck . To increase her stability after the addition of so much topweight , the upper portion of her anti @-@ torpedo bulge was enlarged .

Although still overweight compared to her designed displacement , the modifications made the ship lighter than her sister ships , at 9 @, @ 344 long tons (9 @, @ 494 t) light displacement and a metacentric height of 3 @. @ 59 feet (1 @. @ 1 m) . She completed her sea trials on 21 September 1918 and reached a speed of 29 @. @ 12 knots (53 @. @ 93 km / h ; 33 @. @ 51 mph) from 63 @, @ 600 shaft horsepower (47 @, @ 400 kW) .

= = Construction and career = =

Cavendish was laid down at the Harland & Wolff shipyard in Belfast on 26 June 1916 and launched on 17 January 1918 . In June she was renamed Vindictive , the fifth ship of that name in the RN , to perpetuate the name of the old protected cruiser Vindictive , which had distinguished herself in the Zeebrugge Raid of April 1918 and had then been sunk as a blockship at Ostend in May . She commissioned on 1 October and , after briefly working up , joined the Grand Fleet 's Flying Squadron on 18 October only a few weeks before the Armistice on 11 November . For the rest of the year she conducted flying trials and exercises , including those of the Port Victoria Grain Griffin reconnaissance aircraft , of which two were lost in accidents . The only landing aboard the ship was made by William Wakefield on 1 November in the fleet 's last operational Sopwith Pup . Experiments conducted earlier aboard the larger Furious , with a similarly intact superstructure and funnels , had demonstrated that the turbulence from these was enough to make successful landings almost impossible at high speed . Wakefield minimised the problem by approaching the landing deck at an angle with the ship slowly moving .

Vindictive was dispatched to the Baltic with a dozen aircraft , a mix of Griffins , Sopwith 2F.1 fighters , Sopwith 1 ½ Strutter and Short Type 184 bombers , on 2 July 1919 to participate in the British campaign in the Baltic in support of the White Russians and the newly independent Baltic states . On 6 July she ran aground on a shoal near Reval at speed . Stuck hard in the tideless Baltic , all of her fuel was dumped overboard , and most of her ammunition as well . Some 2 @, @ 200 long tons (2 @, @ 200 t) of stores were also off @-@ loaded , but the ship could not be towed free

by the combined efforts of the light cruisers Danae and Cleopatra and three tugboats . Eight days after grounding a fortuitous westerly wind began that raised the water level by 8 inches (203 mm) , just enough to pull the ship free . Unbeknownst to the British the entire operation had taken place in a minefield .

The carrier unloaded her air group , commanded by Major Grahame Donald , at Biorko , Finland on 14 July . Their airfield was still under construction , but they were able to fly a reconnaissance mission over the major Bolshevik naval base at Kronstadt on 26 July while Vindictive sailed to Copenhagen , Denmark , to load aircraft and spares left for her by the carrier Argus . Four days later , Rear Admiral Walter Cowan ordered Donald and his aircraft to attack Kronstadt at night . As their airfield was not yet finished , the ship 's flying @-@ off deck was extended to 118 feet (36 @.@ 0 m) to better allow the bombers to take off with their 112 @-@ pound (51 kg) bombs . Accurate anti @-@ aircraft fire kept the aircraft too high for an effective attack , but Donald 's men claimed two hits on the submarine tender Pamiat Azova . In reality one bomb struck the oil tanker Tatiana , setting it on fire and killing one man . That same day eight RN Coastal Motor Boat (CMB) s arrived ; Vindictive served as their depot ship .

Vindictive 's aircraft continued to support British operations against the Bolsheviks until they left the Baltic in December , although no further missions were flown from the carrier . They shot down a helium @-@ filled observation balloon and spotted for ships conducted shore bombardments . Most importantly , nine of them attacked Kronstadt during the night of 17 / 18 August 1919 to provide a diversion for an attack by the CMBs on ships in Kronstadt harbour . As a result , the torpedo boats damaged the battleship Andrei Pervozvanny and sank Pamiat Azova . In subsequent attacks on Kronstadt , they nearly hit Andrei Pervozvanny while she was in drydock , nearly hit a minesweeper , killing one crewman from the explosion , and hit two auxiliary ships . By December it was clear that the Whites ' offensive against Petrograd had failed and the British began withdrawing ; Vindictive left three Camels in Latvia , embarked the rest of her aircraft and sailed for home on 22 December .

She was paid off into reserve at Portsmouth Dockyard on 24 December and received permanent repairs of her damage from the grounding , at a cost of £ 200 @,@ 000 . Furious and Vindictive had proven that the idea of " cruiser @-@ carriers " was unworkable due to the turbulence from their superstructures and that a complete flight deck was necessary to successfully operate aircraft at sea . The Admiralty had considered converting her to that configuration , with an island , in July 1918 while still building , but had decided to wait on the results of tests conducted with Argus evaluating different designs for the island . Vindictive was thought to be too small to be an effective carrier and the financial restrictions in place after the war vitiated against such a major reconstruction .

= = = As cruiser = = =

For the next several years the ship was either in reserve or used as a troop transport , until she began reconversion into a cruiser at Chatham Dockyard on 1 March 1923 . The flight decks were removed and she was mostly restored to her designed configuration , although her 3 @-@ inch AA guns were replaced by three QF 4 inch Mk V AA guns . Two of these were mounted on a platform between the aft funnel and the mainmast and the third gun was positioned on the quarterdeck between the two 7 @.@ 5 @-@ inch guns . The major exception was that No. 2 7 @.@ 5 @-@ inch gun was not installed and she retained her hangar in the forward superstructure . The two derricks that serviced the hangar were replaced by a single crane on the starboard side of the hangar roof . No. 2 's position was occupied by a prototype compressed @-@ air Carey aircraft catapult , the first British cruiser to mount a catapult . Vindictive used it for the first time on 3 October when she launched a Fairey IIID floatplane . She also conducted catapult trials on float @-@ equipped Fairey Flycatcher fighters .

She sailed for the China Station on 1 January 1926 with six Fairey IIIDs aboard for anti @-@ piracy patrols and departed for home on 14 March 1928 . She arrived in May and her catapult was removed in October , ending her career as an aviation ship . Vindictive was again reduced to reserve in 1929 , making occasional trooping voyages .

== As training ship ==

In 1936 ? 1937 , Vindictive was demilitarised in accordance with the terms of the London Naval Treaty and converted to a training ship for cadets . Her two inboard propellers were removed as were the inboard turbines ; half of her boilers were removed and their compartments were converted into accommodations . The aft funnel was removed , the aft superstructure remodelled and enlarged and her hangar converted into more accommodation space . Her armament , including the above 4 6-inch water torpedo tubes , was replaced by a pair of 4 7-inch (120 mm) guns forward and a quadruple QF 2 pounder (" pom pom ") AA mount aft . In this form she displaced 9,100 long tons (9,200 t) and was capable of a maximum speed of 24 knots (44 km / h ; 28 mph) . She was recommissioned on 7 September 1937 .

== As fleet repair ship ==

After the Second World War began in August 1939 , Vindictive was transferred to Devonport for a modernisation like that of her sister Effingham , with nine 6-inch (152 mm) guns , four twin 4-inch (100 mm) mounts and a catapult . She had a low priority so little work had been done by early October , when a less complex modernisation was considered . This proposal had six 6-inch guns and three 4-inch AA guns , and her former aft boiler room was to be converted from a laundry into an oil tank to extend her range , but this was rejected in favour of a conversion into a fleet repair ship . Her armament was removed and her forward superstructure was extended over the former hangar 's roof . Her aft superstructure was extended to be flush with her sides and slightly lengthened , and a large deckhouse was built on the quarterdeck . Her armament now consisted of six single 4-inch QF Mk V AA guns , all on the centreline , two quadruple " pom pom " mounts , one on each side , and six depth charges . In this role , she had a standard displacement of 10,000 long tons (10,000 t) (12,000 long tons (12,000 t) at full load) and her draught increased to 20 feet 3 inches (6.2 m) .

The conversion was completed on 30 March 1940 , just in time for the ship to be used with the Home Fleet as a troop transport during the Norwegian Campaign . She ferried British troops to Narvik in late April and escorted an evacuation convoy from Harstad on 4 June . Vindictive was transferred to the South Atlantic later in the year and remained there until late 1942 , when she was ordered north . On the night of 12 November , she was attacked west of Gibraltar by the German submarine U-515 , but managed to evade the torpedoes . U-515 sank the accompanying destroyer tender Hecla and blew the stern off one of the escorting destroyers , Marne . She remained with the Mediterranean Fleet until 1944 , when she was recalled to support the ships participating in Operation Overlord .

During this time she received her first radars . By August 1943 she mounted a Type 286 target indication set as well as a Type 285 anti-aircraft gunnery radar . By January 1944 she had received a Type 291 air warning radar . Her light AA armament had also been augmented by six Oerlikon 20 mm autocannon , three on each side of the roof of the large workshop abaft the funnel . In 1944 Vindictive was converted into a destroyer depot ship and her AA armament was reinforced by the addition of six more Oerlikons . Later that year , the 4-inch guns were removed and eight additional Oerlikons were added . In 1945 she received an additional six Oerlikons .

In early August 1944 , the ship was damaged by a long-range , circling , " Dackel " torpedo dropped by the Luftwaffe off the coast of Normandy . She was paid off into reserve on 8 September 1945 and was sold for scrap on 24 January 1946 . Vindictive was subsequently broken up at Blyth .