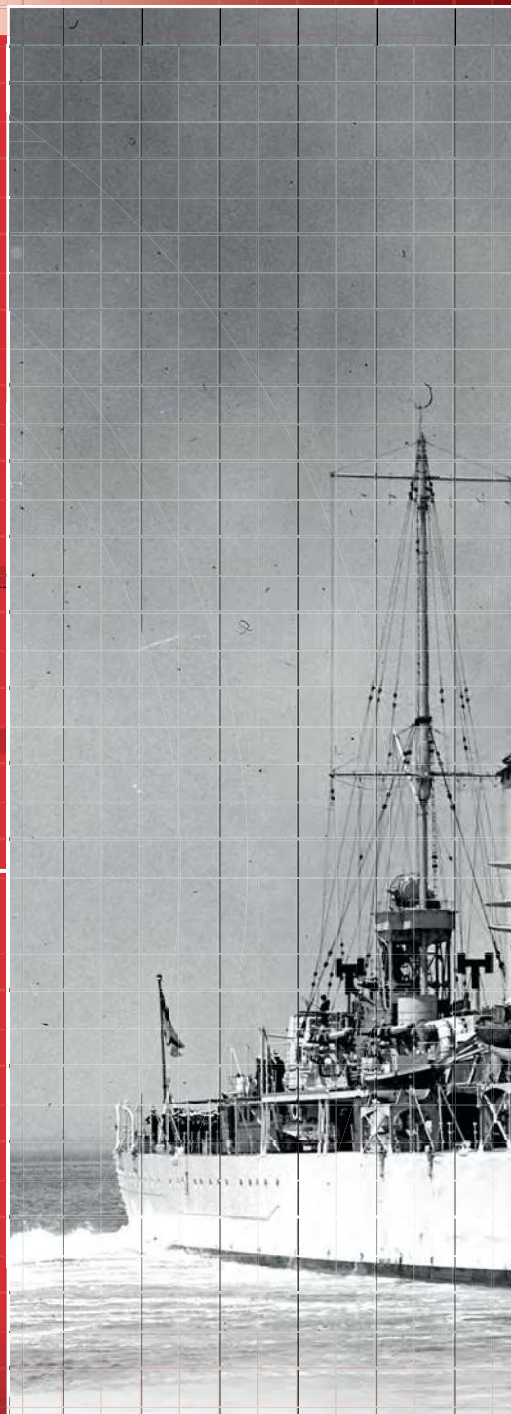
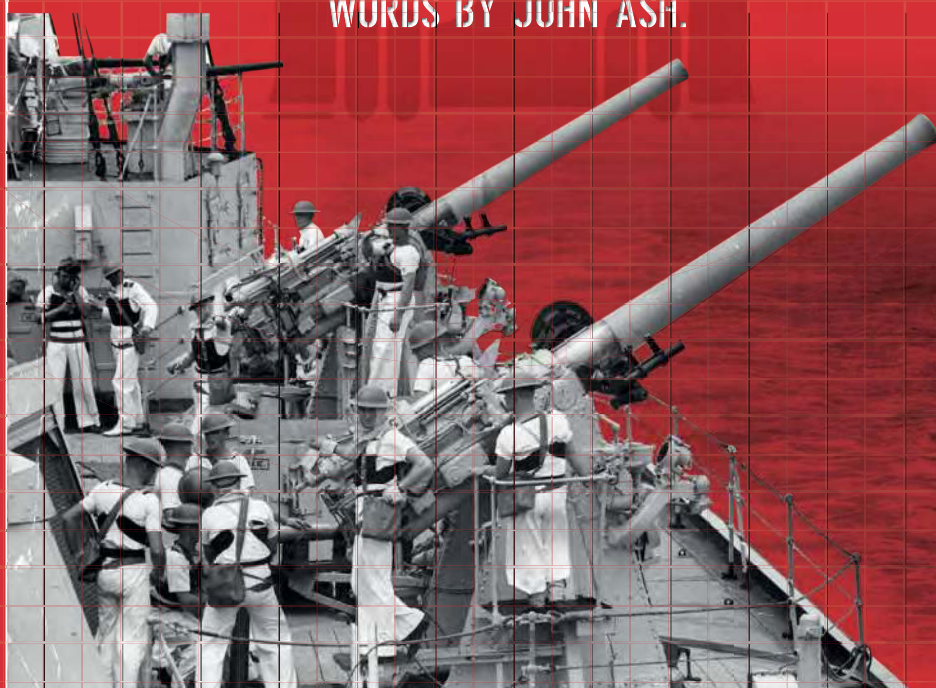




LEANDER-CLASS LIGHT CRUISER

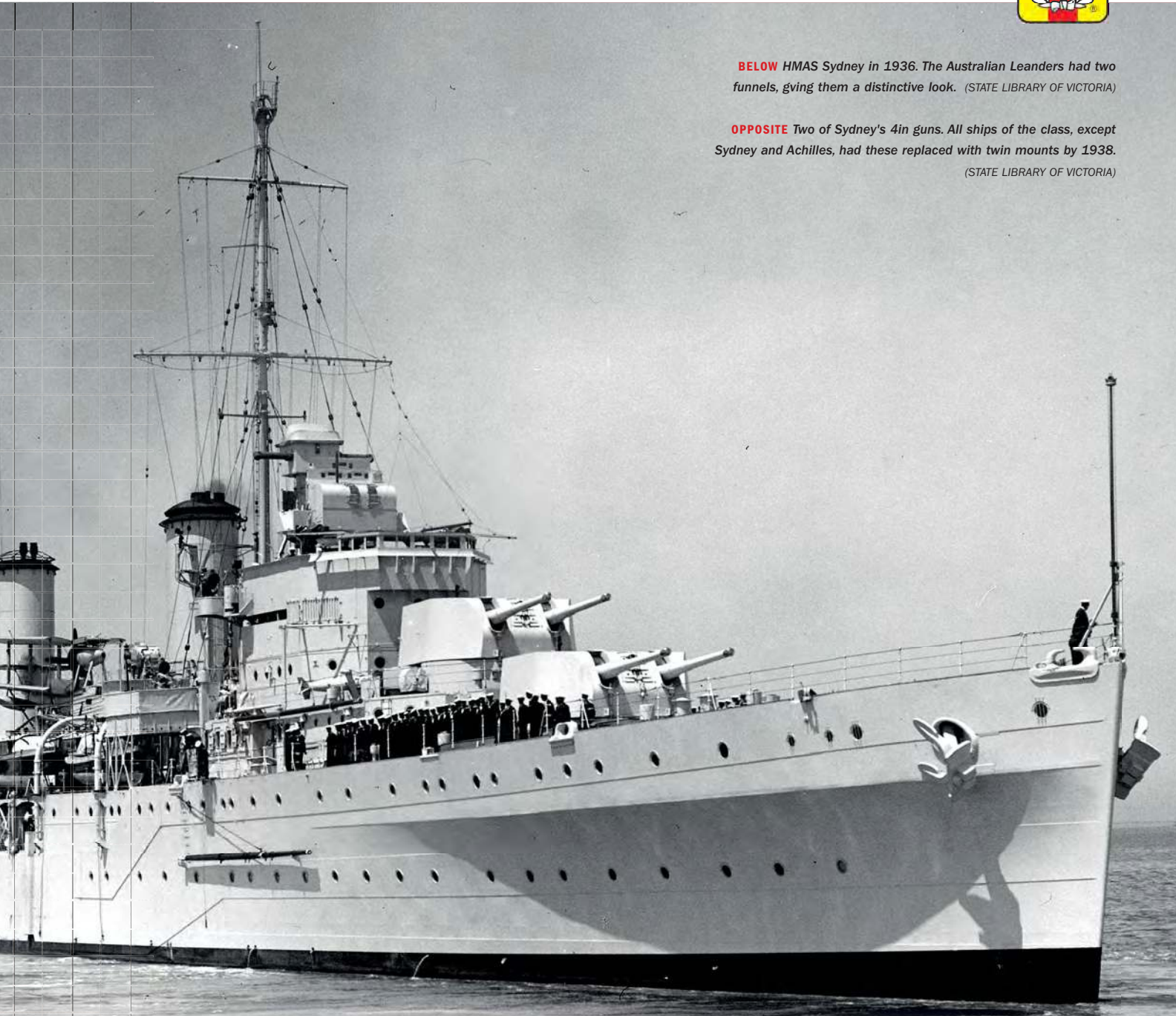
THE FIRST CLASS OF BRITISH LIGHT CRUISERS BUILT UNDER THE TERMS OF THE 1930 LONDON CONFERENCE, THE LEANDER-CLASS HAD A REPUTATION FOR RUGGEDNESS, GOOD SEAKEEPING, AND SPEED.

WORDS BY JOHN ASH.



Seeing action in every theatre of the Second World War, the eight British-built Leander-class cruisers were an essential part of the Royal Navy's maritime power but are often overlooked in favour of newer ships. The class also provided the Royal Australian Navy with the bulk of its major surface units and the fledgling Royal New Zealand Navy its first two major warships.

While largely supplanted by newer classes, five Leanders still remained in Royal Navy hands until 1941. Each was named after a figure from Greek or Roman mythology, except the three destined for Australia, instead named after Australian towns and cities.



BELOW HMAS Sydney in 1936. The Australian Leanders had two funnels, giving them a distinctive look. (STATE LIBRARY OF VICTORIA)

OPPOSITE Two of Sydney's 4in guns. All ships of the class, except Sydney and Achilles, had these replaced with twin mounts by 1938. (STATE LIBRARY OF VICTORIA)

DESIGN

Originally, more Leander-class ships were planned. However, the general displacement limit set by the arms-limiting London Conference meant the Royal Navy had just 91,000 tons of total cruiser displacement remaining. The Leanders were heavy ships, and this resulted in a revision down to eight vessels. However, being 'light', or 6in gun cruisers, the enforcement of such limits was less strict when compared to the County-class 'heavy' 8in gun cruisers. Therefore, most of the Leander-class were overweight and *Leander* herself displaced 1,000 tons more than planned. ▶

SHIPS OF THE LEANDER-CLASS

Name / Pennant No.:	Commissioned:	Fate:
Leander Group		
Leander / 75	24 March 1933	To RNZN 1941-1945, broken up 1950.
Orion / 85	18 January 1934	Broken up 1949.
Neptune / 20	23 February 1934	Sunk by mines off Tripoli, Libya, 19 December 1941.
Ajax / 22	12 April 1935	Broken up 1949.
Achilles / 70	10 October 1933	To RNZN 1941-1946, sold to India as <i>INS Delhi</i> 1948, broken up 1978.
Modified Leander / Amphion Group		
Amphion / 29	15 June 1936	Sold to RAN as <i>HMAS Perth</i> in 1939, sunk during the Battle of Sunda Strait on 1 March 1942.
Apollo / 63	13 January 1936	Sold to RAN as <i>HMAS Hobart</i> in 1938, broken up 1962.
Sydney / 48	24 September 1935	Originally <i>Phaeton</i> , renamed on launch. Lost in mutually destructive surface action with <i>Kormoran</i> on 19 November 1941.



RIGHT

Achilles and Ajax off Montevideo on 17 December 1939. Their guns are trained and they await the Graf Spee's final sortie.

(TOPFOTO)

Built with speed and ocean-going endurance in mind, the design adhered to the traditional principles of the cruiser in protecting trade routes. With their main opponents likely to be auxiliary cruisers – which notionally would always be outgunned – armament and protection were secondary concerns.

This continued to be the case with the Leander's successor, the Arethusa-class, which took this notion of contented superiority further.

Each ship carried a catapult (but no hangars) for a spotter aircraft, normally a Fairey Seafox or Supermarine Walrus. The first of the class to enter service was *Leander*, commissioned in March 1933 after a two-and-a-half-year build.

Despite their size and weight, the 'Leander Group' exceeded expectations in regard to speed. Six boilers turned steam turbines on four shafts, producing some 72,000shp. In a first for British cruisers, these ships had propulsion machinery and boilers arranged together and sharing a single funnel, giving the Leander's their distinctive appearance.

The system worked well, being reliable and powerful. On trials, *Leander* exceeded 32kts at standard load, and her maximum speed only slightly dropped at full load – almost 2,500 tons heavier. However, a single penetrating hit amidships could knock out the entire propulsion and, while fast, a range was a limitation. Although

BELOW

The 6in guns of Orion bombard targets on the River Garigliano, Italy, in support of 5th Army.



the ships were relatively large, their compact design left little room for fuel and while their 5,700nm range compared well against similar German and Italian ships, they were short-ranged next to comparable French and American cruisers. Like the British, the French had a global empire, and the Americans were an ocean away from any major conflict. Operational reach was a vital consideration and in this the Leanders fell short.

The three Australian ships of the 'Amphion' – or Modified-Leander – Group were slightly longer, displaced

less, and had two fewer boilers, yet maximum speed was only marginally affected. As the Australian vessels featured separated propulsion machinery, they differed visually in that they were built with two funnels.

ARMAMENT

The Leander-class was armed with eight BL 6in Mk.XXIII guns. These were more powerful than the guns arming earlier conventional cruisers and with the last British heavy cruiser completed in 1931, the Mk.XXIII became the standard armament for Royal Navy cruisers (except anti-aircraft cruisers) until the introduction of the Tiger-class.

The guns were housed in four Mk.XXI turrets – two fore and a pair aft. Elevation was +60° to -5° and the rate of fire (depending on elevation, crew training and fatigue) was a respectable eight rounds per gun per minute (rpgpm). Loading consisted of the projectile and separate bagged charges, and the barrels had to be lowered below 12.5° to be reloaded. Theoretical maximum range was 25,500yds (23,300m) with 45° elevation – though in practice 24,800yds was more achievable – and, with an initial muzzle velocity of 2,760ft/sec (840m/s), the 112lb (51kg) shells took more than 70 seconds to hit their target at maximum range.

To save costs, it was first decided to install just one fire control director, meaning all turrets could only be directed onto a single target.



Controlling multiple turrets was complicated, with convergence, tilt, dip, and drift just some variables associated with naval gunnery. Firing solutions were best solved with fire control tables working with directors and until the installation of a second director aft, two targets could not be engaged simultaneously without resorting to devolved and less effective means of control.

An alternative to the main batteries for the 21in (553mm) Mk.IX torpedo was provided by two quadruple launchers, one each side, positioned amidships. Designed in 1928, the Mk.IX was used primarily on British light cruisers and replaced the older Mk.VII on some County-class cruisers.

They weighed around 3,700lbs, were almost 24ft (7.3m) long and contained between 720-800lb of explosive content – normally TNT or Torpex – according to the variant. The torpedo had a range of between 10,500-13,000 yards and was capable of 36kts. By 1939, the Mk.IX had been improved and depending on the settings was capable of 41kts and 15,000yds.

Secondary armament consisted of four QF 4in Mk.V guns in high-angle mountings that doubled as the primary anti-aircraft weapons. These had a surface range of 16,300 yards and an anti-aircraft ceiling of 28,750ft. These were replaced by QF 4in Mk.XVI guns in twin mounts. These could hit aircraft at up to 39,000ft and surface targets out to 19,850 yards and had a greater rate of fire – around 20 rpgm – plus, the shells contained more explosive filling. Each ship in the class received these by 1938, except *Achilles* which only received hers in mid-1943, and *Sydney*.

To supplement anti-aircraft defences, there were four triple mounts with

Vickers 0.5in Mk.III machine guns, each with a rate of fire of 500 rpgm and a ceiling of 9,500ft. Throughout the war, surviving ships would have their AA suite altered.

Typically, fire control systems for AA armaments were upgraded with the fitting of new weapons, and most of the surviving ships of the class ended the war with two High Angle Control Systems (HACS). The exact fit depended on when each ship was refit, combined with availability and theatre requirements (for instance, the 2-pounder 'pom-pom' was favoured in the Pacific). For example, *Leander* and *Orion* lost their catapult for improved AA armaments, then *Leander* had her catapult reinstated. The removal of catapults and platforms for boats were common space-making measures for enhanced armaments, but *Achilles* and *Leander* also lost their 'X' turret so additional AA guns could be fitted.

PROTECTION

The Leander-class were lightly armoured. Less strict enforcement of displacement limits did mean that protection was not necessary a sacrificial concern, but the liberal application of plate would reduce speed and sea-keeping. It was largely impossible to armour light cruisers against guns of eight inches or greater – threats that theoretically should be outrun or outmanoeuvred. As such, the ships were protected well enough to defend against six-inch shells fired at mid/long range.

The Leander Group featured up to three inches of armour around the magazines, behind a protective belt some four inches thick that also encompassed machinery spaces and boilers. The deck was protected by one-and-a-quarter inches of plating

– up to two inches in places – with an additional one-and-a-quarter inches above the magazines. The turret fronts were an inch thick, while sloped plating one-and-a-quarter inches thick protected steering gear – a total of some 850 tons of armoured plate.

Because the three vessels modified to Australian requirements split the machinery spaces into separated compartments, those ships required the armour to cover a greater area. The extra weight curtailed proposals to up-gun the Australian ships but did result in good coverage.

Although the armour was somewhat light, solid and rugged construction added to robustness of all eight ships. Speed was not compromised, and the ships were capable of sustaining major damage.

BATTLE OF THE RIVER PLATE

Such ruggedness would serve the class well in the first decisive naval action of the Second World War, one that would immortalise the Leander-class cruisers.

At the onset of hostilities, *Achilles* was patrolling off South America where she joined *Ajax*, which had sunk the German merchant *Olinda* on 3 September 1939 and, with the heavy cruiser *Cumberland*, intercepted the *Carl Fritzen* and *Ussukuma*.

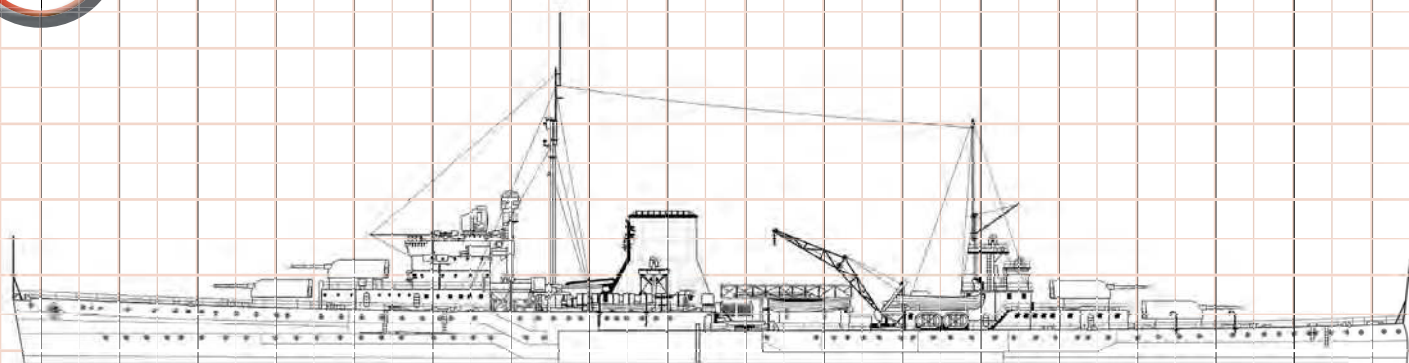
Having sailed to the South Atlantic before the war, the German pocket battleship and commerce raider *Admiral Graf Spee* – able to outrun almost any vessel with the guns to sink her and outgunning almost any capable of catching her – sunk nine British merchant ships in the Indian and South Atlantic Oceans. Force G – *Ajax*, *Achilles*, *Cumberland*, and another heavy cruiser *Exeter* – under Commodore Henry Harwood, was one unit tasked with finding her. ►

BELOW

Leander during manoeuvres off the east coast of Britain in 1934.

(TOPFOTO)





ABOVE
Line drawing of
Leander, c.1939.
(ANDY HAY)

Anticipating *Graf Spee* would move to the River Plate, Harwood steamed there and practiced the tactics he devised for attacking a pocket battleship. In daylight, this involved splitting and engaging from multiple sides. However, *Cumberland* was now undergoing refit in the Falklands and Harwood's force was outgunned.

At 0616hrs on 13 December, *Exeter* sighted the raider and attacked from the southwest. *Ajax* and *Achilles* went northwest. *Graf Spee* misidentified the British vessels, and underestimating her foe, gave up her range advantage and closed in, opening fire on *Exeter* at 0618hrs. The British fired back but within five minutes, a salvo landed close to *Exeter* and splinters incapacitated her seaplane and torpedo crews. At 0626hrs *Exeter* took a shell

on her 'B' turret, knocking it out, the shrapnel killing or wounding all on the bridge except for the captain and two others. Communications were down, and instructions were being passed down chains of sailors. While the Germans were accurate, so too were the British, but the *Spee's* 28cm (11in) shells were far more destructive.

Ajax and *Achilles*, both faster than *Graf Spee*, closed to 13,000 yards, forcing her to split her fire. *Exeter* was hit again, losing her 'A' turret. She was on fire and severely damaged, but her 'Y' turret was still firing under local control with the gunnery officer standing on the roof shouting instructions. They scored a hit on *Graf Spee's* fuel processing facilities, leaving her with just enough to get to South America.

Exeter and the pocket battleship continued to exchange shells for 40 minutes, until one landed close to *Exeter* and disabled her 'Y' turret, forcing her withdrawal. Shell after shell was sent after her, but *Graf Spee* was prevented from delivering a killing blow by *Ajax* and *Achilles*. The pair continued to close range, turning to fire accurate broadsides, before resuming course. They got to within 8,000 yards before they were subjected to the full force of *Graf Spee's* guns and *Ajax* was hit twice, losing her 'X' and 'Y' turrets and her mast. The situation was perilous, but then *Graf Spee* turned away.

As she slipped toward neutral Uruguay, the British chased. Shortly after midnight on 14 December, the Germans entered Montevideo. Once inside, she became trapped. *Ajax* and *Achilles* kept watch as *Cumberland* sailed with all haste, steaming the 1,000 miles in less than 36 hours. While reinforcements were amassed, a clever ruse convinced the Germans that British capital ships were waiting for their prey to leave the neutral port – which, in accordance with international law, was inevitable. Ultimately, a famous victory came about with the scuttling of *Graf Spee* on 17 December, a rapturous triumph hard-won by *Exeter* and the two Leanders.

SYDNEY AND KORMORAN

Another major action involved HMAS *Sydney*, for which the outbreak of war heralded busy times. Ordered to the Mediterranean Fleet in May 1940 she joined *Orion* and *Neptune* in the bombardment of Bardia, Libya, on 21 June and six days later sank the Italian destroyer *Espero*. On 9 July she participated in the Battle of Calabria and while protecting a flotilla of destroyers off Crete on the 19th damaged two Italian cruisers at Cape Spada. To distract from the raid on

COMPARISONS		SPEED (KTS)				
		0	10	20	30	40
Leander-class (Royal Navy)						
Number Built:	5 (plus 3 in Amphion group for 8 total) (from 1930-1936)					
Guns:	8 x 6in main guns in four turrets, 8 x 21in torpedo tubes					
Length:	555ft (169m)					
Displacement:	7,270 tons					
Speed:	32.5kts					32.5
Range:	5,700nm at 14kts					
Königsberg-class (German Navy)						
Number Built:	3 (from 1926-1930)					
Guns:	9 x 15cm (5.9ins) main guns in three turrets, 12 x 53cm (21ins) torpedo tubes					
Length:	571ft (174m)					
Displacement:	7,700 tons					
Speed:	32kts maximum					32
Range:	5,700nm at 19kts					
Condottieri-class (Giussano group) (Italian Navy)						
Number Built:	4 (group) from 1928-1932 (12 total in five modified groups)					
Guns:	8 x 152mm (6in) main guns in four turrets, 4 x 533mm (21in) torpedo tubes					
Length:	550ft (169m)					
Displacement:	6,571 tons					
Speed:	37kts					37
Range:	3,800nm at 18kts					

Taranto on 11-12 November 1940, *Sydney*, *Ajax*, and *Orion* sortied into the Strait of Otranto and sank three merchant vessels. In January 1941, the Australians were ordered home.

Auxiliary cruisers plagued the Indian Ocean, and *Sydney* helped hunt them. By late November three had been dealt with: HMS *Cornwall* sank *Pinguin* on 8 May; HMNZS *Leander* sank the Italian raider *Ramb I* in February; while *Atlantis* was sunk by HMS *Devonshire* on 22 November. One more commerce raider, *Kormoran*, was sunk that year.

On 19 November *Sydney* spotted an unidentified merchant ship. Intercepting her, the ship claimed to be Dutch – the *Straat Malakka* – but she was not listed as being in the area. Suspicious, *Sydney* closed in. As Duncan Redford explained in his contributing volume of *A History of the Royal Navy*: “For reasons that have never been explained, the *Sydney* closed to within a mile,” and ran parallel to the ship.

Her guns were trained as she challenged the merchant, which failed to respond. At 1655hrs, the raider revealed her guns and shells slammed into the Australian cruiser. *Kormoran*'s accurate shooting quickly disabled *Sydney*'s fire control, bridge, and her 'A' and 'B' turrets and set her ablaze. In reply, firing independently, *Sydney*'s 'X' turret scored several hits. Torpedoes fired at *Sydney* struck and she began to list. Turning to port, *Sydney* passed aft and slipped away.

Both ships were burning wildly, and *Sydney* was no longer able to engage. She disappeared over the horizon – the glow from her fires lit the night – and sank with all 645 hands. The damage inflicted on *Kormoran* in the mutually destructive engagement was also fatal, though the Germans had time to abandon ship.

OTHER ACTIONS

The Leanders were involved in numerous events throughout their gallant war. In late 1941 *Leander* and *Achilles* became the newly formed Royal New Zealand Navy's first two major surface vessels, both ships having been previously part of the New Zealand Division. Two-thirds of *Achilles*' crew were New Zealanders and the ship flew the New Zealand Ensign when in action with *Graf Spee*.

Leander sunk the *Jintsu* during the Battle of Kolombangara in the Pacific, but was hit and underwent



repair for the rest of the war. After being returned to the British, she was involved in the Corfu Channel incident before scrapping in 1950. Excluding a 13-month period of refit and repair, *Achilles* served in the Pacific and post-war was sold to India as INS *Delhi*, until scrapping in 1978. She played herself in the film *The Battle of the River Plate* and one of her turrets was presented to New Zealand where it is on display in Auckland.

Orion fought at Cape Matapan, at Greece, and assisted in the evacuation of Crete before a refit, returning to duty in October 1942. She supported the Sicily and Normandy landings. Post-war she was also involved in the Corfu Channel incident but was soon decommissioned, being scrapped in 1949. *Neptune* was the ship to first spot the Italians at Calabria and then led Force K, tasked with sinking Axis convoys to North Africa. On the night of 19-20 November 1941, she struck three mines and was dead in the water. As rescue was attempted, she drifted into a fourth mine and sank. Of the 730 on board, just one was rescued.

Ajax also fought at Matapan and Crete before two years of refit and repair, returning to service in 1944. She bombarded Gold Beach on D-Day, supported the landings in southern France, and later participated in the Greek Civil War. Decommissioned in 1948, her proposed sale to Chile caused

some political controversy so she was instead scrapped.

HMAS *Perth* was heavily involved in the Mediterranean, seeing action in Greece and Crete and off Syria before returning to Australian waters. She took part in the disastrous Battle of the Java Sea on 27 February 1942, surviving alongside the USS *Houston* only to be sunk on 1 March in the Sunda Strait, 357 of her 681 crew were killed but another 106 would die in captivity.

Finally, HMAS *Hobart* supported actions in British Somaliland in August 1940, being the last ship to leave as the Italians closed in and helping to evacuate 7,000 people. She then fought alongside the Americans during the Battle of the Coral Sea and supported the landings at Guadalcanal. Torpedoed in July 1943, she was in repair until early 1944 but in the war's closing months supported the landings at Tarakan, Brunei, and Balikpapan before entering Tokyo Bay to witness the surrender of Japan. After a lengthy period in reserve, *Hobart* was scrapped in 1962. ☉

ABOVE

HMNZS *Leander* at anchor. Australia and New Zealand continued to use the Royal Navy's White Ensign until the late 1960s.

(TOPFOTO)

NEXT MONTH

Next month's **Weapons of War** profiles one of the most important aircraft ever to serve with the Royal Air Force – the Avro Lancaster. Don't miss this exciting profile! The February issue is in the shops on 31 January 2019.