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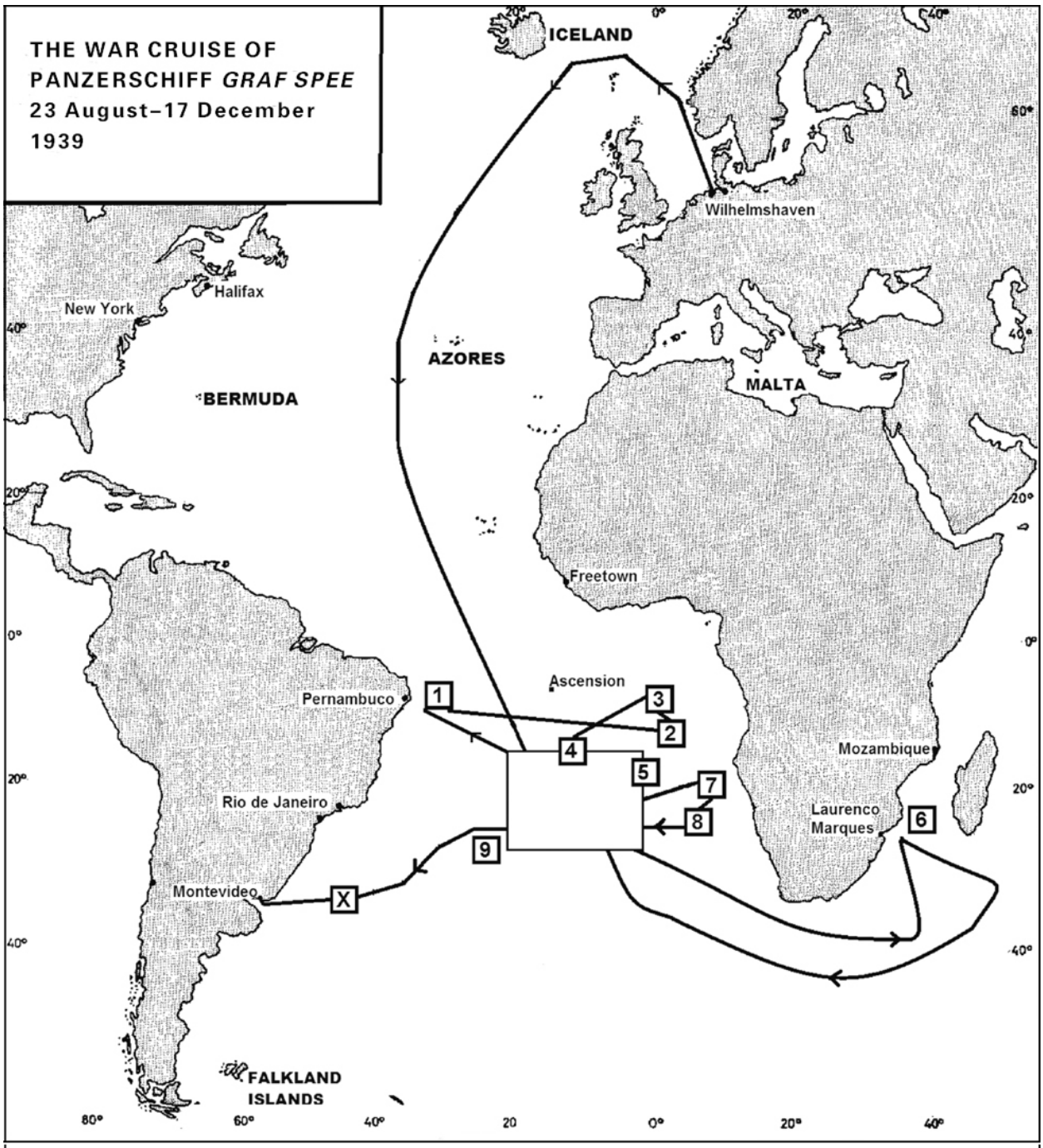

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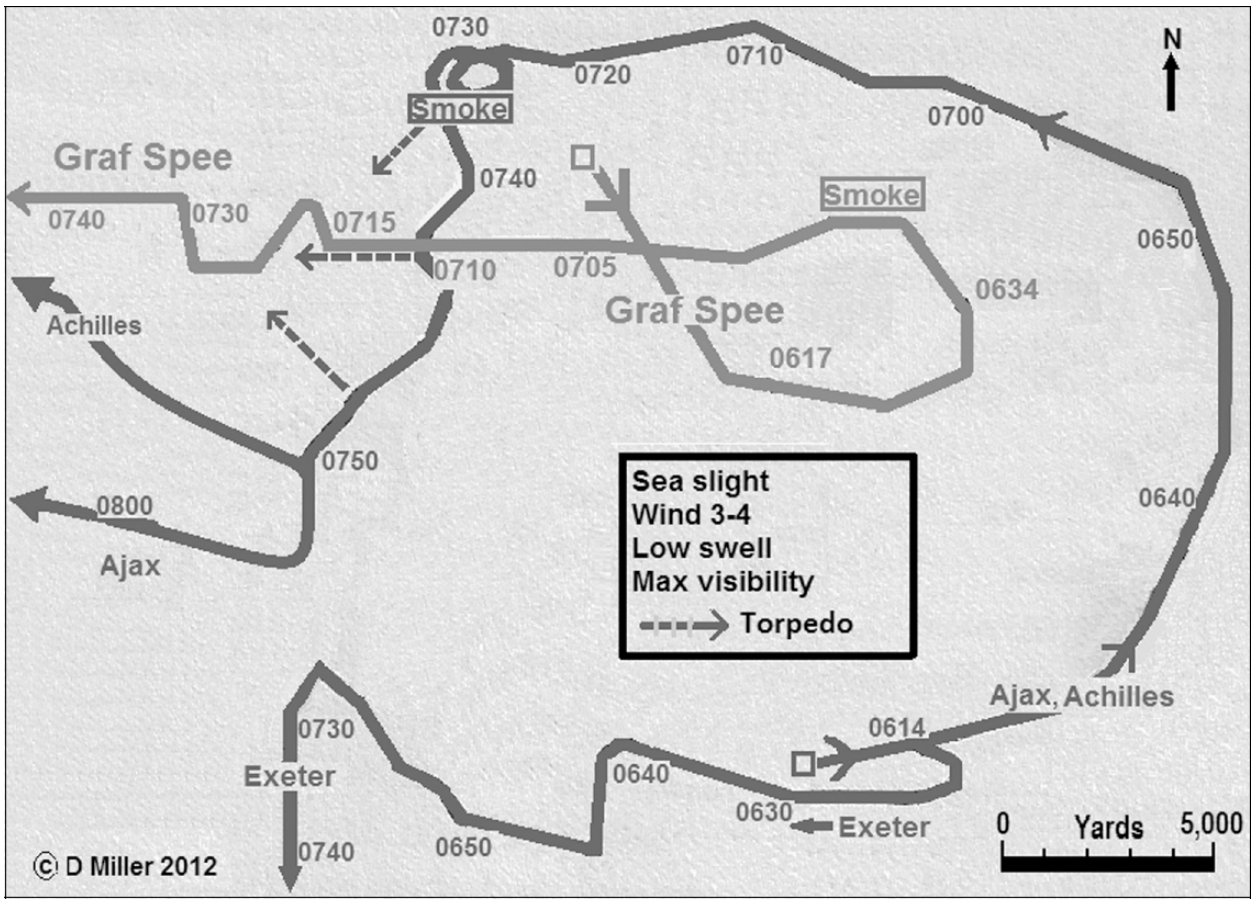

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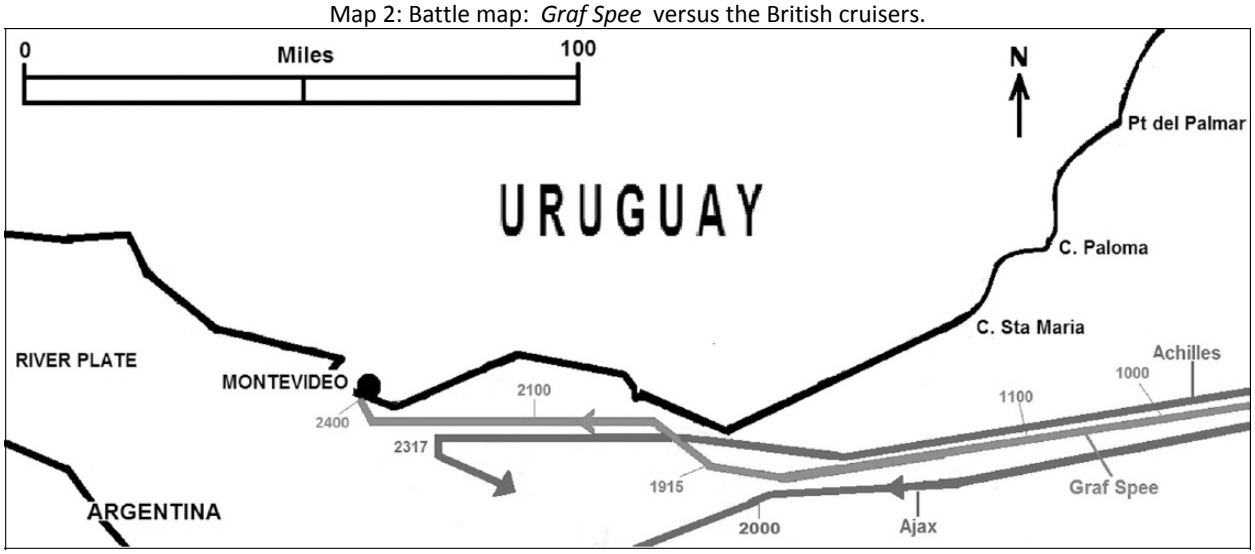

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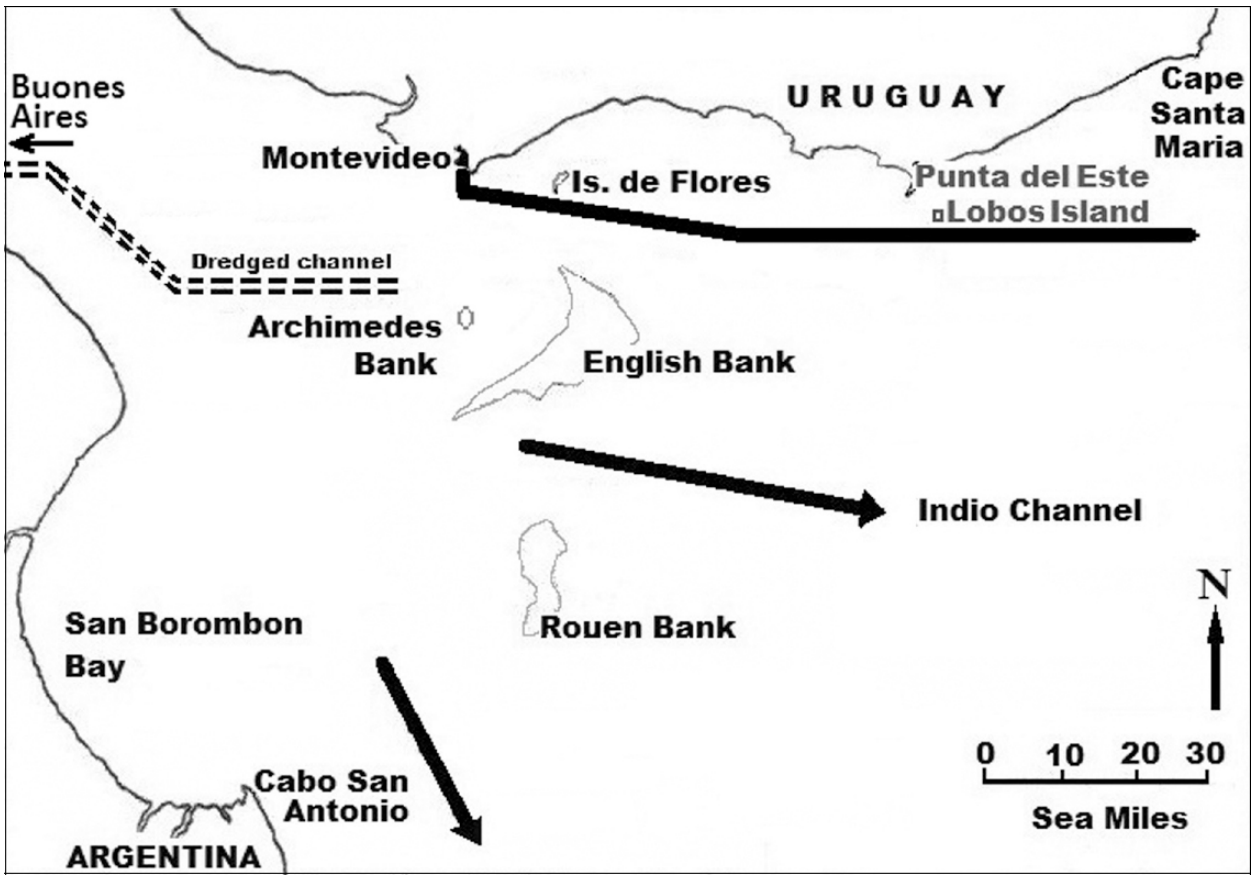

Map 4: River Plate estuary.

Introduction

The Battle of the River Plate is one of the best-remembered naval engagements of the Second World War, with the pictures of the burning wreck and memories of its tragic commander's suicide seared into the public memory. The battle was fought on 13 December 1939 between two apparently disparate forces: on the German side *Admiral Graf von Spee*, one of the much vaunted 'pocket battleships'; on the British side, three smaller and seemingly much less powerful cruisers, *Exeter, Ajax* and *Achilles*.

Conditions in the battle area were virtually perfect – there was a cloudless sky and no surface haze, giving maximum visibility. There was a gentle breeze from the south-east, giving a low swell. Also, there were no distracting influences, such as nearby land, and not only were there no admirals in the vicinity but, while both commanders had wireless communications back to their respective homelands, their admiralties left them to fight their own battle.

Both commanders were thirsting for action and had unknowingly headed for the same small area of the Atlantic Ocean. Then, as soon as they sighted each other, their plans and their reactions were identical: advance towards the enemy at full speed ahead. Neither commander entertained any thought of avoiding battle.

Graf Spee was of a type known to the Germans as *Panzerschiff* (armoured ship), but outside Germany as a 'pocket battleship', which had excited great interest since the first-of-class, *Deutschland*, was launched in 1930. The design was internationally acclaimed as being most ingenious, with the displacement limited by the Versailles Treaty to 10,000 tons but mounting two triple turrets, each with three 11-inch (28cm) guns, which, combined with an impressive secondary armament, gave it an aura of great power.

There were few technological distractions during the battle. The British deployed one aircraft as a 'spotter' but the German aircraft was unserviceable, so it was one of the last naval battles in which airpower played only a very limited part. The German ship possessed one of the world's first operational naval radars, but it did not influence the battle in any respect, while the British had no such device.

Of the many unusual features the most important was that the crews of all four ships behaved with great gallantry and, while everyone involved sought to ensure that their side emerged victorious, all those involved, with the exception of a very few ashore, behaved with scrupulous correctness, coupled with both physical and moral courage.

This book is concerned with the commanding officer of the *Graf Spee, Kapitän zur See* Hans Langsdorff, and the unique succession of challenges he had to face. It is divided into four parts:

Part I.	The historical background – German surface raiders in the First World War.
Part II.	The ship – the design of the Deutschland-class *Panzerschiffe*.
Part III.	The war cruise of the *Graf Spee*.
Part IV.	Conclusions.

Author's Conventions

All timings are local, unless specified otherwise.

All naval ranks are those held in December 1939. German naval ranks and their US/British equivalents are explained at Annex A.

All measurements are given in Imperial units followed by the metric equivalent.

Linear measurements have been rounded off to one decimal place.

Displacement of merchant vessels is given in *Gross register tonnage* (grt), an internationally accepted measure of a merchant vessel's internal volume, which was in use from 1854 to 1969. This gave an indication of the earning capacity of the vessel and is used here to give the reader a means of comparing the sizes of merchant vessels mentioned in the text.

There are numerous quotes from German texts. Where these are important they are given in English in the main text but I have included the original German text as a footnote to enable those readers who wish to do so to verify the rendering into English.

Acknowledgements

I am especially grateful to Jamie Wilson, publisher, who showed great understanding and kindness in rescheduling the book twice when I suffered a family bereavement which caused great distress and personal difficulty.

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Some of the discussion in Chapter 23 concerning 'the captain going down with his ship' is based on a more general coverage of this subject in my book *Commanding Officers* and is repeated by kind permission of the publishers of that book, John Murray.

In England technical advice and encouragement came from Brian Crabb, Robert Hall, Christopher Miller and Ian Pirnie.

To all of those I wish to express my personal thanks.

Foreword
Langsdorff: The Man

Hans Wilhelm Langsdorff was born on the Baltic island of Rügen on 20 March 1894, the eldest of three children of a lawyer, Ludwig Langsdorff, and his wife Elizabeth, the daughter of a Lutheran pastor. The family moved to Düsseldorf in 1898 and Hans, after attending school there – and despite having no family connection with the navy – enrolled in the *Marineschule* (naval academy) at Flensburg-Mürwick where he became a member of the *Kaiserlichemarine* (imperial navy) Class of 1912. On graduating in 1914, his first appointment was to the elderly light cruiser SMS *Medusa*, initially in the rank of *Fähnrich* (midshipman), but he was promoted *Leutnant-zur-See* in March 1915. That September he was posted to one of the navy's newest and most impressive battleships, SMS *Grosser Kurfürst*, where he served as flag lieutenant to the commanding officer, *Kapitän-zur-See* Ernst Goette. This was the first of many such appointments for Langsdorff, whose obvious competence, coupled with a pleasant manner, made him an ideal staff officer.

Langsdorff was aboard *Grosser Kurfürst* during the Battle of Jutland (31 May–1 June 1916), where, with three other battleships, it formed the Fifth Division of the Third Battle Squadron, in the vanguard of the High Seas Fleet. *Grosser Kurfürst* became actively involved from the late afternoon, her main opponents being enemy battleships, although on several occasions the ship also engaged British cruisers and destroyers which were conducting determined attacks against the German fleet, apparently undeterred by the disparity in size and firepower. *Grosser Kurfürst* sustained a number of hits in the evening, some of which caused serious flooding. Although it managed to keep up with the fleet for most of the night it was eventually forced to fall behind, reaching Schilling Roads well after the others. In the course of this battle, *Grosser Kurfürst* was hit by eight large-calibre shells, resulting in fifteen killed and ten wounded, while the German ship fired 135 shells from its 30.5cm (12-inch) main battery and 216 rounds from its secondary battery of 15cm (5.9-inch) guns. Langsdorff survived this baptism of fire unscathed and was awarded the Iron Cross, Second Class. Langsdorff subsequently joined the minesweeper force – an active and dangerous task – where he spent the remainder of the war.

The Versailles Treaty allowed only a few elements of the old navy to continue working and Langsdorff, now clearly considered a promising young man, was one of the small number selected for retention. In 1922 he was promoted to *Oberleutnant zur See*, he married in 1923, and in 1925 was posted to the Defence Ministry in Berlin, where his task involved liaison between the *Reichsmarine* (navy) and *Reichswehr* (army). In 1927 he returned to sea, taking command of a half-flotilla of torpedo boats.[1]

In April 1930 Langsdorff was promoted to *Kapitänleutnant* (lieutenant commander) and in 1931 he went back to Berlin again to begin five more years in the capital, the first appointment being in the *Reichswehrministerium* (armed forces ministry) during a period of intense political activity. Langsdorff was in this ministry for the chancellorship of the erstwhile Minister of Defence, General Kurt von Schleicher (3 December 1932–28 January 1933), Hitler's accession to power (30 January 1933) and the Reichstag fire (27 February 1933). In February 1934 he was posted to Department J of the Ministry of the Interior, which was headed by long-time Nazi Party supporter Wilhelm Frick, and while Langsdorff was there the Night of the Long Knives (Röhm Putsch, 30 June–2 July 1934) took place, during which his former chief at the Ministry of Defence, General von Schleicher, was murdered. There is absolutely no reason to suggest that Langsdorff was involved in, supported or even sympathised with such events, but working in two important government ministries and living in Berlin he cannot have failed to be aware of such notorious national events.

Langsdorff managed to escape from Berlin in December 1936 on being appointed principal staff officer to *Konteradmiral* Hermann Boehme, flag officer commanding the *Panzerschiffe*, flying his flag aboard the newly-commissioned *Graf Spee*. Langsdorff accompanied his admiral to Spanish waters but when Boehme was replaced in April 1937 Langsdorff remained on board and was with the ship when it visited England to take part in King George VI's Coronation Fleet Review at Spithead on 15–22 May 1937.

Langsdorff was promoted to *Kapitän-zur-See* on 1 January 1937. He was clearly one of the up-and-coming officers in the *Kriegsmarine* and was slated for a major seagoing command; thus, on 1 November 1938 he assumed command of the *Graf Spee*. He took his ship on an Atlantic cruise from 10–24 November 1938 and in March 1939 *Graf Spee* was part of the naval force involved in the reincorporation of Memel into the German Reich.[2] German tactics were overtly aggressive and even before the treaty had been signed the *Kriegsmarine* task force arrived off the port, comprising two *Panzerschiffe* – *Scheer* and *Graf Spee* – plus three cruisers, two destroyer squadrons and three torpedo boat flotillas, with *Graf Spee* as flagship.[3] Hitler himself arrived in Memel on the day following the takeover, aboard the *Deutschland*.

In April 1939 *Graf Spee* again served as a flagship, this time during large-scale Atlantic naval exercises, which also involved *Deutschland* and *Scheer*, together with the latest addition to the fleet, the battlecruiser *Gneisenau*. C-in-C for the exercises was Langsdorff's former chief, Admiral Boehm. On return to port, *Graf Spee* was one of many warships assembled in Hamburg to welcome home members of the *Legion Kondor*, who had been taking part in the Spanish Civil War. On 17 August *Graf Spee* was on torpedo exercises in the North Sea when orders were received to return to Wilhelmshaven immediately; once there, the ship loaded for war and sailed on 21 August 1939.

Langsdorff the Man

Langsdorff was a very intelligent man, widely respected throughout the navy. Prior to his wartime voyage and the Battle of the River Plate he was little known to the public, either in Germany or abroad. But all who did meet him spoke of his gentlemanly behaviour and intelligent and thoughtful approach to all matters. He had a happy family of two sons and a daughter.

He was known to admire the British and, in particular, the Royal Navy, even though he had fought against them in the previous war. He spoke English and was able to conduct serious and detailed conversations without the need for an interpreter. His only known visit to England was at the time of the Coronation Review, but he would also have called at Gibraltar during the Spanish Civil War.

Although he expressed admiration for Hitler and seemed to approve of at least some of the measures implemented by the Nazis – for example, in education and youth training – he was still something of a free-thinker. Captain Dove's account of his time aboard *Graf Spee* was published in 1940 and the details of his conversations with *Graf Spee*'s captain came as a considerable shock to the German hierarchy.

Dove felt sufficiently confident to raise a number of what might be considered sensitive issues, which Langsdorff did not attempt to avoid. Langsdorff defended the incarceration of Pastor Niemöller on the grounds that 'he preached against the State outside his own pulpit'.[4] In answer to a question about young people, Langsdorff replied, 'It is at these (*Hitler Jugend*) meetings that they (his two sons) are told what to think and what is best for Germany … The *Führer* knows how best to guide the thoughts of the young. The *Führer* is a prophet, not a politician!'[5]

All Langsdorff's actions as captain of the *Graf Spee* show that he was a decent, honourable and compassionate man. He was almost certainly not a member of the Nazi Party but, nevertheless, it is very unlikely that a loyal officer of the *Kriegsmarine*, which Langsdorff undoubtedly was,

would run down his head-of-state and supreme commander to a foreigner, and in particular a citizen of a state with which his country was at war.

Much has been made, both at the time and since, of the fact that Langsdorff did not use the Hitler salute at his crew's funeral in Montevideo, which was interpreted in the non-German Press as implying personal criticism of the Nazi regime. But all those giving the Nazi salute are civilians, presumably members of the German embassy and expatriates, and Langsdorff was using the traditional naval salute quite properly, since it was used throughout the *Kriegsmarine* in 1939 and was only replaced by the Hitler salute in June 1944. It was also reported that when he committed suicide he did so wrapped in a naval ensign, but that it was that of the old Imperial Navy and not of the modern navy with the swastika at its centre, again implying some sort of insult to the Nazi government in general and Hitler in particular. This was simply not true and was not corroborated by any of the eyewitnesses.

Comment

There can be no doubt that Langsdorff was an honourable and decent man. He was also a German patriot and a loyal professional naval officer. He had served throughout the First World War and was then retained in the peacetime reductions. He almost certainly did not know of the worst excesses of the Nazi regime which did not come to light until the later war years, but his time in the naval and interior ministries in the 1930s must have shown him some of the depths to which the Hitler regime would stoop. Nevertheless, he seems to have had no reservations about his children being in the Hitler Youth, nor about the rightness of the war.

As he set sail on 24 August 1939 he had every reason to feel confident, and his superiors had every reason to feel confident in him. He was as experienced as any of his contemporaries and had served with distinction not only at sea but also in important appointments in two government ministries. There is no record of him actually having met Hitler, but he certainly must have seen him at close quarters and he seems to have had no qualms about supporting him as head of state.

He also knew his ship exceptionally well, having served in her as a staff officer in 1936–37 and as commanding officer from November 1938.

Notes

1. Note that in the German classification system a *torpedoboot* was a relatively large vessel, displacing some 1,300 tons, and equivalent to a British frigate or US destroyer-escort, and thus much larger than the British motor torpedo-boat.
2. The port of Memel was separated from East Prussia by the Treaty of Versailles and was administered by France on behalf of the League of Nations from 1919 to 1923 when it was handed to Lithuania. There was a sizeable German minority and after considerable agitation Lithuania was compelled to hand it over to Germany on 22 March 1939.
3. As the Lithuanian navy comprised just one warship, a 580-ton converted minesweeper, this represented considerable over-insurance on the German part.
4. Friedrich Gustav Emil Martin Niemöller (1892–1984) was an officer in U-boats in the First World War but was ordained into the Lutheran Church in 1924. He was an early supporter of the Nazi Party, but turned against it in the mid-1930s and was sent to Sachsenhausen Concentration camp in 1938, where he remained until 1945.
5. Dove, op cit., pp. 82–3.

PART I

The Historical Background – German Surface Raiders in the First World War

CHAPTER 1

The First World War

Prior to the outbreak of the First World War the German *Admiralstab* (Naval Staff) made detailed plans for commerce raiding against the British on a global scale. On the outbreak of war in August 1914 there was a small number of warships, scattered around Germany's imperial possessions, totalling seven cruisers and fourteen smaller vessels (see table).

German Warships Overseas at Outbreak of the First World War

Station	Large cruiser	Small cruiser	Colonial gunboat	River gunboat	Torpedo boat	Survey ship
Tsingtau	2	3	4	3	1	
Australia[1]			2			1
East Africa		1				1
America		1				
West Africa			2			
Total	2	5	8	3	1	2

Two of the warships were heavy cruisers and five *Kleine Kreuzer* (small/light cruisers). Even the light cruisers were adequate for halting and, if necessary, sinking enemy merchant ships, and might even hold their own against a like number of enemy cruisers, but were no match for battlecruisers or battleships. They were reasonably fast and had a good range, but all were coal-fired and needed a regular resupply of good quality coal, as well as rations and water for the crew.[2] Of these ships, three would be sunk by the end of 1914, and one in March 1915 while the last would be scuttled in July 1915, after which the German Navy had no major surface warships in distant waters for the remainder of the war.

Vice Admiral Maximilian Graf von Spee (1861–1914) took command of the Imperial German Navy's *Ostasiengeschwader* (East Asia Squadron) in 1912 with his headquarters at the German concessionary port and naval base of Tsingtau.[3] His peacetime mission was to provide a German 'naval presence' in the Pacific and to support the recently acquired, but scattered, German possessions. He was also required to prepare for war and, if it came, to destroy Allied merchant shipping. In line with normal German practice, he was given complete responsibility, free from interference by Berlin; indeed, the home government's attitude was not if Spee's squadron might be destroyed, but when. At this point Spee's squadron comprised two heavy cruisers, *Scharnhorst* (flag) and *Gneisenau*; two light cruisers, *Leipzig* and *Nürnberg*, and one auxiliary, *Titania*.

New Zealand forces took Samoa without a fight on 29 August 1914, while the Japanese besieged Tsingtau from September until the Germans surrendered on 7 November 1914 and, with the latter's fall, Spee had no firm base remaining in the Pacific area. Spee had ordered his ships to assemble in the Caroline Islands but, once there, he found that wireless communications were so poor that he had to send *Nürnberg* to Hawaii to obtain the latest news, which it did, rejoining the squadron at Christmas Island. Hearing of the occupation of Samoa, Spee took *Scharnhorst* and *Gneisenau* to that island but decided that a counter-attack would achieve nothing in view of Allied naval supremacy, so he went to Papeete where his ships bombarded the French colony (22 September) and then sailed for South America. His aim at this point was to attack British and French trade, then round Cape Horn, attack the British coaling station at Port Stanley in the Falkland Islands, and then return to Germany.

Spee's squadron coaled at Más Afuera, where they were joined by the cruiser *Dresden*, from the Caribbean. The slow and vulnerable *Titania* was then scuttled and Spee set off for the Chilean coast. Meanwhile, the Allies had been alerted to Spee's whereabouts by the shelling of Papeete and the British Admiralty ordered Vice Admiral Cradock to intercept him before any further damage was done.

Spee and Cradock met, more or less by chance, on 1 November off the Chilean port of Coronel. The British ships were elderly, slow and crewed in the main by reservists, and were outfought by the Germans, who sank two British cruisers, *Good Hope* and *Monmouth*, without loss to themselves. Spee then proceeded around Cape Horn en route for home, but intending to call on the Falkland Islands on the way.

Spee knew well that the British would react quickly and violently, but nevertheless was taken completely by surprise when he approached the Falkland Islands on 8 December to discover that substantial reinforcements had already arrived. Two battlecruisers, *Inflexible* and *Invincible*, were there, together with five cruisers; three heavy, *Carnarvon, Cornwall, Kent*, and two light, *Bristol* and *Glasgow*. All immediately sailed to meet the approaching Germans and Spee, recognising that he was totally outgunned by the two battlecruisers, each eight 12-inch (305mm) main guns, turned and attempted to escape. All but one of Spee's ships were sunk that day, and the one that got away, *Dresden*, was found three months later and, being trapped, was scuttled by her crew (14 March 1915).

Individual Ships

Warships

Scharnhorst, Gneisenau

Type	Tons	Crew	Weapons	Ammunition	Merchant victims		Fate
					No.	Tonnage	
Armoured cruiser	12,781	38 + 724	8 × 21cm 6 × 15cm 18 × 8.8cm 4 × 45cm TT	n/k	0	0	Sunk. Falkland Islands 8 December 1914

Scharnhorst and *Gneisenau* were large 'armoured cruisers', sisterships, both completed in 1908. They were neither sufficiently well-armed nor fast enough for the High Sea Fleet, but were ideal for colonial duties, being deployed to the German treaty port of Tsingtau in 1911. In 1914 they were the heavyweight members of the East Asia Squadron. Neither of them conducted any commerce raiding operations as such, but both took part in the Battle of Coronel and were then sunk in the Battle of the Falkland Islands.

Dresden

Type	Tons	Crew	Weapons	Ammunition	Merchant victims		Fate
					No.	Tonnage	
Light cruiser	4,268	1838 + 343	10 × 105mm 8 × 52mm 2 × TT	1,510 × 105mm 5 × torpedo	4	12,960	Scuttled 15 March 1915

Dresden completed a tour of duty in the Caribbean in late July 1914 and, having been replaced by another cruiser, *Karlsruhe*, on 31 July, set out to return to Germany. As soon as war was declared, however, the captain followed mobilisation orders and altered course, heading down

the coast of South America in order to join von Spee's East Asia Squadron in the Pacific.
During her career as a commerce raider, *Dresden* claimed four victims, totalling 12,933 tons. On 6 August the raider stopped three British merchantmen, all in ballast, but after destroying their radio apparatus, let them go and, on 21 August, stopped another British ship, *Siamese Prince*, but let her go too. The four ships sunk were: *Hyades* (3,325grt); *Holmwood* (4,223t); *North Wales* (3,691t); and *Conway Castle* (1,694grt). Not a single person was killed and all were sent ashore, either on neutral ships or on German auxiliaries. Prior to joining von Spee, *Dresden* coaled on 8 August, 13 August, 19–22 August and 31 August.
Dresden remained with von Spee for the Battle of Coronel (1 November 1914) and was the sole German survivor of the Battle of the Falkland Islands (8 December 1914). The ship then returned to the Pacific only to be trapped at the Chilean island of Más Afuera by British cruisers *Glasgow* and *Kent* on 15 March 1915, but was scuttled to pre-empt destruction by the British.

Emden

					Merchant victims		
Type	Tons	Crew	Weapons	Ammunition	No.	Tonnage	Fate
Light cruiser	4,264	18 + 343	10 × 105mm 8 × 52mm 2 × TT 120 × mines	1,800 × 105mm 5 × torpedo	15	66,023	Destroyed. HMAS *Sydney* 10 November 1914

Emden was in Asian waters from 1909 onwards and when war broke out was station ship in the German concessionary port of Tsingtau. *Emden* sailed immediately and began a commerce raiding voyage in the Indian Ocean which lasted three months, during which eighteen merchantmen were sunk and three captured, and used three colliers. *Emden* entered and bombarded two British ports – Madras (22 September) and Penang (28 October) – and in the latter sank two warships: a Russian cruiser, *Zhemchug*, and a French destroyer, *Mousquet*. All this caused immense disruption to Allied merchant shipping and tied down many Allied warships. In addition, the captain, von Müller, established a sound reputation for 'correct' behaviour: not one person from the merchant ships captured was killed; once taken captive they were well treated, and were repatriated as soon as arrangements could be made. Neutral ships were also treated as such. *Emden* was eventually caught by HMAS *Sydney* in the Cocos Islands on 9 November 1914. *Emden* was outgunned, as *Sydney* had no less than eight 152mm guns and, following a gun battle, *Emden* was beached and abandoned.

Karlsruhe

					Merchant victims		
Type	Tons	Crew	Weapons	Ammunition	No.	Tonnage	Fate
Light cruiser	6,191	18 + 355	12 × 105mm 2 × TT 120 × mines	1,800 × 105mm 5 × torpedo	16	72,225	Internal explosion. 1 November 1914

Karlsruhe sailed from Germany in July 1914 intending to meet and replace *Dresden* on the Caribbean station, following which the brand-new cruiser would represent Germany at the opening ceremony of the Panama Canal (15 August) and then at the San Francisco World Fair. All plans changed on 28 July when war was declared and her captain immediately sailed to meet the liner *Kronprinz Wilhelm* on 6 August where the warship transferred guns to enable

the liner to begin commerce raiding, and started to receive coal in return. This was by no means complete when it was interrupted by the arrival of the British cruiser HMS *Suffolk* but, despite closing to within gun range that night, the British ship failed to damage *Karlsruhe* which escaped and reached Puerto Rico almost out of fuel. There the US authorities, in compliance with the Neutrality Laws, allowed the Germans to take on just enough coal to reach St Thomas. In the event, *Karlsruhe* made for the Netherlands' island of Curacao and then set off on a very successful raiding spree, sinking sixteen ships between 18 August and late October.

Karlsruhe's captain, Köhler, was punctilious in removing all crew from his prizes and holding them aboard another prize or one of his auxiliaries, until he could send them to a neutral port. One ship, *Crefeld*, took no fewer than 398 people – 223 of the Allies, 175 neutrals – and landed them at Tenerife on 22 October. He also removed coal and provisions wherever possible. Neutral ships were usually released unharmed, although several were sunk because their cargoes were British-owned. His final prize, and a good one, was the British liner *Vandyck* with 210 passengers all of whom, with the crew, were removed and subsequently put ashore in Brazil.

Having scuttled *Van Dyck, Karlsruhe* set sail for Barbados on 1 November with the aim of bombarding the British colony, as *Emden* had done at Penang. However, in the early evening of 4 November the ship was proceeding as normal when there was a devastating explosion which totally demolished the ship forward of the leading funnel. The remainder of the ship remained afloat for a short time but sank just before 1900.

The cause of the explosion has never been established with certainty. It could have been due to an ammunition accident; several ships were blown apart during the war due to the spontaneous combustion of sweating cordite, and *Karlsruhe* was in a very hot area and had no refrigeration facilities. Another possibility was the self-ignition of coal dust in a half-empty bunker. But, whatever the reason, *Karlsruhe* was no more and there were only 129 survivors out of a crew of 373.

Königsberg

Type	Tons	Crew	Weapons	Ammunition	Merchant victims		Fate
					No.	Tonnage	
Light cruiser	3,814	14 + 308	10 × 105mm 10 × 37mm 2 × TT	1,510 × 105mm 5 × torpedo	1	6,601	Destroyed 11 July 1915

Königsberg was station guard-ship at Dar-es-Salaam in 1914 and the most powerful German warship in the Indian Ocean. The captain, von Loof, knew that the British would immediately start hunting for him, so he put to sea before war was declared and then carried out some raiding activities. He took the *City of Winchester* on 6 August 1914 and moved her to a sheltered anchorage where he transferred 400 tons of coal and supplies before sinking her. By 19 August *Königsberg* was virtually out of coal and water but was replenished by a German collier; even so, fuel was again at crisis level on 1 September. On 20 September *Königsberg* entered Zanzibar harbour where von Loof caught HMS *Pegasus*, a very small British cruiser, cleaning her boilers and *Könisgberg* made short work of her.[4] *Königsberg* then took shelter in the Rufiji delta where the Royal Navy spent much time and great ingenuity in trying to destroy her before the German crew scuttled her on 11 July 1915.

Leipzig

Type	Tons	Crew	Weapons	Ammunition	Merchant victims		Fate
					No.	Tonnage	
Light cruiser	3,664	14 + 287	10 × 105mm 10 × 37mm 2 × TT	1,500 × 105mm 5 × torpedo	4	15,279	Sunk. Falkland Islands 8 December 1914

The outbreak of war found *Leipzig* off the coast of California where the captain immediately faced coaling problems, as the United States imposed the conditions of neutrality. The ship entered San Francisco harbour on 16 August but had only received about half the required amount when the operation ceased. Her captain managed to obtain more from other sources and on 11 September took his first victim, the British tanker *Elsinore* (6,542grt), which was in ballast, and was sunk after the crew had been removed. He then sailed to the Galapagos Islands where he found a German supply ship and, after coaling and landing his prisoners, set off for the Peruvian coast where he took the British tramp *Bankfelds* (3,763grt).

Leipzig joined Spee's squadron at Easter Island in October and took part in the Battle of Coronel. On the day after the battle, *Leipzig* captured the French barque *Valentine* whose cargo of coal was transferred, crew removed and the vessel then sunk. Another coal-laden barque, this time the British *Drummair*, was taken on 2 December. On 8 December *Leipzig* was sunk at the Battle of the Falkland Islands.

Nürnberg

Type	Tons	Crew	Weapons	Ammunition	Merchant victims		Fate
					No.	Tonnage	
Light cruiser	3,902	14 + 308	10 × 105mm 8 × 52mm 2 × TT	1,500 × 105mm 5 × torpedo	0	0	Sunk. Falkland Islands 8 December 1914

In mid-1914 *Nürnberg* was due to return to Tsingtau dockyard for a refit following many months operating off Mexico's Pacific coast but this was changed on the outbreak of war and the ship joined von Spee at Pagan island on 12 August 1914. On 22 August the ship was sent to Honolulu to obtain news and then rejoined the cruiser squadron at Christmas Island. The cruiser was immediately sent to Fanning Island where the radio station was destroyed and its radio masts felled and broken (8 September 1914). *Nürnberg* then met up with the squadron again and took part with them in the Battle of Coronel, where it bombarded and sank the already helpless *Monmouth*. The German cruiser took part in the Battle of the Falkland Islands, where it, in its turn, was reduced to a helpless hulk before rolling over and sinking. *Nürnberg* never took any prizes.

Armed Merchant Cruisers

Germany had built up a sizeable merchant marine between 1890 and 1914 and it was inevitable that should war come suddenly (as it did) then a large part of this fleet would be on the high seas or in foreign ports. What would happen to ships in port depended to a great extent on the attitude of the nation involved: some would intern the ship and its crew immediately, while others might turn a blind eye to enable the master to get his ship to sea. Once there, however, the ship needed supplies of coal, its people needed food, and both needed water. Foreseeing

this requirement, in 1911 the *Admiralstab* set up a global supply organisation designated the *Etappendienst*.[5] It had three main functions: to collect information and pass it to Germany or to ships at sea; to control the movement of all German-registered shipping, and to organise supplies for German ships in the area or passing through. The world was divided into major areas, each with a specified HQ; for example, *Etappe Ostafrika*, with its HQ at Dar-es-Salaam in German East Africa. Other HQs were established in potentially neutral countries such as *Etappe Sudwest Amerika* in Valparaiso, Chile. The members of the *Etappendienst* worked undercover and usually served in ports, as members of merchant lines, fishing agencies, or harbourmaster staff.

The Second Hague Peace Conference of 1907 (15 June–18 October 1907) produced thirteen separate conventions, covering subjects such as the immunity of unoffending private property of the enemy upon the high seas, the limitation of force in the collection of contract debts, arbitration, an international prize court, and the project for the establishment of a permanent court of arbitration. One item specifically considered was the employment of auxiliary warships, resulting in Convention VII 'relating to the conversion of merchant ships into warships'. This stated that:

a. **Article 1**. A merchant ship converted into a warship cannot have the rights and duties accruing to such vessels unless it is placed under the direct authority, immediate control, and responsibility of the Power whose flag it flies.
b. **Article 2**. Merchant ships converted into warships must bear the external marks which distinguish the warships of their nationality.
c. **Article 3.** The commander must be in the service of the State and duly commissioned by the competent authorities. His name must figure on the list of the officers of the fighting fleet.
d. **Article 4.** The crew must be subject to military discipline.
e. **Article 5.** Every merchant ship converted into a warship must observe in its operations the laws and customs of war.
f. **Article 6.** A belligerent who converts a merchant ship into a warship must, as soon as possible, announce such conversion in the list of warships.

This showed international acceptance of the principle of auxiliary cruisers and, as a result, the German government instructed major shipping companies that new designs would include preparations such as deck strengthening for guns. The *Admiralstab* also made detailed plans to ensure that guns were available in various parts of the world and could be installed, and that ammunition, rifles, machine guns and other military equipment were also available.

Large passenger liners, of which Germany had a fair number, were an attractive proposition and detailed plans were made to outfit them when mobilisation was ordered. They were roomy and fast, and achieved some successes, but their size made them conspicuous. The worst problem, however, was that the ships on the North Atlantic run were designed for relatively short point-to-point voyages, where speed was of the essence, so that there had to be regular supplies of vast amounts of high-quality coal at either end of the voyage. This was acceptable in peacetime, but replenishing them in war became a serious problem. A further difficulty was that in some cases their boilers were designed for specific types of high-quality coal, which usually came from mines in the UK and was thus no longer available. These ships constituted what might be described as the 'first wave' of commerce raiders.

At a major port there were purpose-built machines for the rapid loading of coal in very large quantities, but these auxiliaries were either replenished at sea or in some remote bay and without any specialised machinery. It thus took time and required a huge amount of physical labour.

Kaiser Wilhelm der Grosse

Type	Tons (grt)	Crew	Weapons	Ammunition	Merchant victims		Fate
					No.	Tonnage	
Passenger liner	24,300	24 + 360	6 × 105mm 2 × 37mm	400 × 105mm	3	10,685	Sunk while coaling 26 August 1914

Kaiser Wilhelm der Grosse (14,349grt) was completed as a Norddeutscher Lloyd passenger liner in 1897 for service on their North Atlantic route. When war was imminent, the liner happened to be in a German port so was immediately converted to the auxiliary cruiser role, primarily by installing six 105mm guns. *Kaiser Wilhelm* sailed from Germany on 4 August 1914 and was already at sea when war was declared at midday. Operating in the mid- and north-Atlantic it initially intercepted two British liners, *Arlaza* and *Galician* (6,5745grt) but, when it was discovered that there were women and children aboard, the ships were allowed to proceed. Three other ships were, however, sunk: *Tubal Kain*, a British trawler; *Kaipara*, a New Zealand tramp steamer (7,000 tons); and *Nyanga*, a British-registered tramp (3,000 tons).

Kaiser Wilhelm der Grosse was discovered by the British cruiser HMS *Highflyer* on 26 August when lying at the Spanish colony of Rio de Oro. The liner was being coaled from three colliers which had been positioned there for such a purpose, but, because of the lack of facilities and the volume of coal involved, they had all been there for a week. HMS *Highflyer* was an elderly light cruiser, armed with eleven 6-inch guns, and her captain demanded the German surrender, which was refused on the grounds that the German ship was in a neutral port, to which the British replied that the Germans had already breached Spanish neutrality by having been there for over a week. The British bombardment lasted just under two hours, at the end of which the German ship was a blazing wreck, but had also run out of ammunition, and the crew abandoned ship and made for the shore. The wartime career of *Kaiser Wilhelm der Grosse* had lasted just twenty-two days.

Prinz Eitel Friedrich[6]

Type	Tons (grt)	Crew	Weapons	Ammunition	Merchant victims		Fate
					No.	Tonnage	
Passenger liner	16,000	25 + 377	4 × 105mm 12 × 37mm	n/k	11	33,424	Interned at Newport News, USA, 8 April 1915

Prinz Eitel Friedrich was also a Norddeutscher Lloyd ship, but smaller than *Kaiser Wilhelm der Grosse* and *Kronprinz Wilhelm*, having been built for the Far East trade. On the outbreak of war the ship was at sea between Japan and China but immediately diverted to the German colony and naval base of Tsingtau, where passengers were disembarked and four 105mm guns were transferred from two gunboats. The ship operated for a time in Australian waters and then crossed the Pacific to spend a short period with Admiral Graf von Spee's East Asia squadron. The ship then rounded Cape Horn and headed north, but short of coal and supplies, with a large number of prisoners to feed, and in desperate need of a refit, the captain entered the US port of Newport News on 11 March. After prevarications on both sides, ship and crew

were interned on 8 April 1915. *Prinz Eitel Friedrich* accounted for eleven ships (33,424 tons).

Kronprinz Wilhelm

Type	Tons (grt)	Crew	Weapons	Ammunition	Merchant victims		Fate
					No.	Tonnage	
Passenger liner	24,900	20 + 483	2 × 120mm 2 × 88mm	0 × 120mm 290 × 88mm	14	51,346	Interned at Newport News, USA, 26 April 1915

The liner *Kronprinz Wilhelm* was, like *Kaiser Wilhelm der Grosse*, designed for the North Atlantic service. On the outbreak of war the ship was in New York, but managed to slip out to sea to meet the cruiser, *Karlsruhe*, taking on board two 120mm and two 88mm guns; there were 296 rounds of 88mm ammunition, but none of 120mm. The mid-ocean rendezvous had to be hurriedly terminated when a British cruiser approached and *Kronprinz Wilhelm* headed for the Azores, where, on 17 August, it met a German supply ship, SS *Walhalla*. The two ships headed south, transferring coal as they went, while *Kronprinz Wilhelm* was at last able to mount the two 88mms and train gun crews and boarding parties. On being advised that no more coal would be available in the Azores and Canaries, the captain headed for South America, where it captured fifteen ships (60,522grt), of which one, a Russian, was released.

Kronprinz Wilhelm had a speed of 23 knots, considerably in excess of normal merchant ships, and having once spotted a potential victim overtook them with ease, a task made all the easier in the early weeks, when many of the victims were unaware that war had been declared. *Kronprinz Wilhelm* then sent a boarding party, and if the victim was found to have nothing of value it was simply released. On the other hand, if anything was found, the crew and passengers were transferred to *Kronprinz Wilhelm*, followed by the cargo. The victim was then sunk by opening the sea cocks and detonating demolition charges, except for one ship which was sunk by ramming, presumably to save on demolition charges.

Coal was a major headache. Some German colliers were sent out from South American ports. Transfers took a very long time; for example, *Kronprinz Wilhelm* captured *La Correntina* on 7 October and continued transferring coal and food until 11 October when they had to stop for bad weather. A few more hours of transfers took place on 14 October but the operation was then ended and the victim sunk. As the cruise progressed, the ever-increasing sickness rate became a major problem. The diet consisted mainly of beef, white bread, boiled potatoes, canned vegetables, and margarine, while the small quantities of fresh fruit and vegetables seized from the prizes were reserved for the officers. In fact, the people were almost certainly suffering from scurvy, which, because they had little or no experience of it, was not recognised by the ship's medical staff.

On 11 April *Kronprinz Wilhelm* arrived at Newport News, where ship and crew were interned. The ship had steamed 37,666 miles and destroyed some 56,000 tons of Allied shipping, without the loss of a single life on either side.

Berlin

Type	Tons (grt)	Crew	Weapons	Ammunition	Merchant victims		Fate
					No.	Tonnage	
Passenger liner	26,000	310	6 × 105mm 4 × 37mm 200 mines	n/k	1	5,353	Interned Trondheim, Norway, 18 November 1914

Passenger liner *Berlin* (17,234grt) was converted to an auxiliary cruiser on the outbreak of war, mounting six 105mm guns, but with an additional minelaying capacity – 200 mines. Commissioned on 28 September 1914 *Berlin* soon sailed on her first mission to lay mines off the British coast, disrupt the British fishing industry, and general commerce raiding. The mines were supposed to be laid in the Clyde estuary but, in the event, were laid some twenty miles north-east of Tory Island off the entrance to Lough Swilly in Ireland, a major Royal Navy anchorage. On 26 October these mines claimed the very new British battleship HMS *Audacious* which was returning to the anchorage and, following the explosion, foundered as a result of internal flooding combined with a very heavy gale. The minefield also claimed a merchant ship, *Manchester Commerce. Berlin* attempted to take one commercial prize, but the captain did not persist and then, in the belief that the entire British fleet was chasing him, made for Norway where *Berlin* entered Trondheim harbour and was interned. The mines laid by this ship were not completely cleared until late 1917.

Vineta (i)

Type	Tons	Crew	Weapons	Ammunition	Merchant victims		Fate
					No.	Tonnage	
Passenger liner	20,576	n/k	4 × 150mm 4 × 88mm	600 × 150mm	0	0	Converted but never deployed

Vineta (i) was built as a passenger liner for the Germany–South America service and launched in March 1914 as the *Cap Polonio*. On the declaration of war it was converted to become an auxiliary cruiser. It was learnt during trials that her water-tube boilers, which were of a new design, required top quality Welsh coal, which was, of course, no longer available. Unfortunately, the German coal, which was available, not only resulted in a lower speed than possible opponents but also quickly clogged up the boiler tubes. As a result, the ship never left harbour as a raider and was returned to the owners who laid it up for the remainder of the war. Although *Vineta (i)* never sailed in her intended role, the conversion work and trials took up valuable time and manpower which could have been better employed elsewhere.

Cap Trafalgar

Type	Tons (grt)	Crew	Weapons	Ammunition	Merchant victims		Fate
					No.	Tonnage	
Passenger liner	23,640	20 + 300 (est)	2 × 105mm 6 × 37mm	300 × 105mm	0	0	Sunk by HMS *Carmania*, 14 September 1914

Cap Trafalgar was a passenger liner built for Hamburg Sudamerikanische Dampschiffsfahrt-

Gesellschaft (Hamburg South American Steamship Company). Launched in March 1914 it was at Buenos Aires when war broke out and immediately put to sea to rendezvous with the gunboat *Eber* which had come across the Atlantic from German South-West Africa in order to transfer two 105mm guns, ammunition, and other military stores. *Cap Trafalgar* was commissioned as an auxiliary on 31 August and headed north and was taking on coal at Ilha de Trinidade when the British armed merchant cruiser HMS *Carmania* appeared. There then followed a hard-fought duel between the two armed merchant cruisers, both weakly armed and manned predominantly by reservists. After several hours in which each caused the other considerable damage, the German ship was sunk. *Cap Trafalgar* had taken no prizes.

Viktoria Luise

Type	Tons (grt)	Crew	Weapons	Ammunition	Merchant victims		Fate
					No.	Tonnage	
Passenger liner	27,350	22 + 448	4 × 105mm 4 × 37mm	800 × 105mm	0	0	Converted, found unsuitable; returned to owners

The liner *Deutschland* was launched in January 1900 for the Hamburg-Amerika Line's New York service and in 1901 won the highly prestigious Blue Riband for the fastest Atlantic crossing. Despite this, the engines proved troublesome and in 1910–11 the ship was re-engined and rebuilt to become one of the first-ever dedicated cruise ships and renamed *Viktoria Luise*. In August 1914 the ship was requisitioned by the navy and outfitted as a raider with four 105mm and a number of 37mm guns. However, trials in the Baltic revealed that her engines could no longer generate sufficient speed, and, after briefly considering use as a minelayer, the ship was returned to her peacetime owners. As with *Vineta (i)* a lot of shipyard effort was expended for no return.

Others

At least ten other liners were earmarked for conversion to armed merchant cruisers but this was prevented by a variety of circumstances; two are mentioned as examples. *Kronprinzessin Cecilie* (19,360grt) was a sister-ship of *Kaiser Wilhelm der Grosse* and, like her, operated the Bremen–New York service. When war was declared the ship was only a day out of New York heading for home and carrying a considerable sum in gold and silver. Her captain decided to avoid possible capture by the British Navy and turned back to the United States, where, on arrival, ship and crew were interned. *Lützow* (8,826grt) operated the Germany–Australia service and on the day war was declared had the misfortune to be transiting the Suez Canal and was immediately impounded by the British authorities.

Cargo Ships

Apart from the large passenger liners, the Imperial German Navy also employed smaller merchant vessels as auxiliaries.

Cormoran

Type	Tons (grt)	Crew	Weapons	Ammunition	Merchant victims		Fate
					No.	Tonnage	
Passenger/ freight	7,250	n/k	8 × 105mm	1,200 × 105mm	0	0	Interned Guam, 14 December 1914; scuttled 7 April 1917

This ship was built in Germany in 1909 for a Russian company and was named *Ryaezan*. On the day war was declared the ship was sailing through the Korean Straits when it was captured by the cruiser *Emden* and taken into the German naval base at Tsingtau, to be given not only the crew and armament of an old gunboat laid up with maintenance problems but also its name, *Cormoran*. Now commissioned as an auxiliary, *Cormoran* sailed on 10 August to roam the Pacific seeking victims, but found none. Eventually, the ship ran so short of fuel that it was forced to enter Guam on 13 December 1914, where ship and crew were interned on the following day. When the USA declared war on Germany on 7 April 1917, *Cormoran*'s crew scuttled their ship.

Greif

Type	Tons	Crew	Weapons	Ammunition	Merchant victims		Fate
					No.	Tonnage	
Freighter	9,800	10 + 297	4 × 150mm 1 × 105mm 2 × TT	600 × 150mm 200 × 105mm 12 × torpedoes	1	15,831	Sunk by Royal Navy; 29 February 1916

Greif was completed in 1914 as the merchantman *Guben* (4,962grt) but was immediately converted to a commerce raider, being commissioned on 23 January 1916. *Greif* was intercepted in the North Sea on her first voyage by the British armed merchant cruiser *Alcantara. Greif* sank the British ship but, shortly afterwards, was herself sunk by British warships hastening to *Alcantara*'s aid.

Meteor

Type	Tons (grt)	Crew	Weapons	Ammunition	Merchant victims		Fate
					No.	Tonnage	
North Sea packet	3,640	n.k.	2 × 88mm 2 × 37mm 374 mines	600 × 88mm	1	5,353	Interned at Trondheim, Norway, 18 November 1914

The British North Sea packet *Vienna* was in German waters when war was declared and was seized by the Germans and converted to carry 374 mines, with an armament of two 88mm guns, two 37mm guns and two torpedo tubes. Renamed *Meteor*, the first sortie was to lay mines in the White Sea, following which it cruised as a raider, taking one prize, a Swedish vessel, which was neutral but carrying 200 sacks of Russian mail. For the second voyage *Meteor*

was given an additional two 150mm guns and two torpedo tubes and, in August 1915, laid mines in the Cromarty Firth, which claimed one victim, the British destroyer HMS *Lynx*, with heavy loss of life. *Meteor* was then intercepted by a boarding patrol vessel, HMS *Ramsey*, but the British vessel was soon sunk by a mixture of gunfire and a torpedo. There was heavy loss of British lives, but the German captain rescued all those that could be found, before setting out for Germany. En route home *Meteor* found and sank a lone Norwegian schooner, but was then itself intercepted by the British Light Cruiser Force from Harwich and, faced with annihilation by a vastly superior force and to avoid capture, was scuttled (9 August 1915).

Möwe

Type	Tons (grt)	Crew	Weapons	Ammunition	Merchant victims		Fate
					No.	Tonnage	
Refrigerated freighter	9,800	16 + 219	4 × 150mm 1 × 105mm 2 × TT	600 × 150mm 200 × 105mm 500 mines 12 × torpedoes	38	165,340	2 major, 3 minor cruises; survived the war

Pungo was launched in 1914 for use as a banana carrier between Cameroon and Germany, so was made redundant by the British blockade. By mid-1915 the light cruisers and converted liners had been eliminated, so it was decided to try smaller, anonymous-looking freighters and one of the first was *Pungo*, which was converted and renamed *Möwe* (Seagull), under the command of *Korvetten-kapitän* Niklaus Burggraf und Graf zu Dohna-Schlodien. A major difference from earlier merchant raiders was that *Möwe* had a much heavier armament: 150mm guns as opposed to 105mm; and a total of no less than twelve torpedoes of the new 500mm (19.7in) C/08 type. Also, *Möwe* was nothing like as fast as the previous converted liners, but had considerably greater range (8,700nm at 12kt), thus alleviating, if not entirely eliminating, replenishment problems.

Möwe was commissioned on 1 November 1915 and her first raiding voyage started on 29 December 1915 with the laying of minefields in the Pentland Firth and the Gironde estuary.[7] *Möwe* then moved to the Central Atlantic and in a period of three months captured fifteen ships (57,520grt) of which thirteen were sunk and two sent back to Germany as prizes. No lives were lost aboard *Möwe*, but nineteen foreign seamen were killed aboard two ships when their captains did not stop when ordered to do so. *Möwe* returned to Germany on 4 April 1916.

As a security measure, *Möwe* was then temporarily re-named *Vineta (ii)*, to disguise the fact that another ship with that name had been laid up (see *Vineta (i)* above). In this guise the ship made several short cruises in the Baltic and along the Norwegian coast, in the course of which just one ship of 3,326grt was captured.

Möwe's second Atlantic cruise commenced on 23 November 1916, and in the space of four months the raider took a further twenty-five ships, totalling 123,265grt. One of these, *Yarrowdale*, was sent as prize to Germany, to be converted as a commerce raider in its own account, for which it was renamed *Leopard* (q.v.). Another, *Saint Theodor*, was retained as a collier for a period, but then armed from *Möwe*'s own resources and commissioned at sea as *Geier* (q.v.). In March 1917 *Möwe* ran the British blockade for the fourth time and arrived back in Germany on 22 March 1917. *Möwe* was then used as a minelayer until the end of the war.

Wolf (i)

Type	Tons (grt)	Crew	Weapons	Ammunition	Merchant victims		Fate
					No.	Tonnage	
Freighter	12,900	16 + 345	4 × 150mm 2 × 37mm 2 × TT	600 × 150mm 16 × torpedoes	0	0	Ran aground 26 February 1916. Damaged beyond repair

This ship was launched in 1906 as the British *Belgravia* (6,488grt) and happened to be in Hamburg when war was declared, so was immediately requisitioned. Work on converting the ship to a commerce raider did not start until late 1915 when it was fitted with four 150mm and two 37mm guns, as well as two torpedo tubes, for which it carried no less than fourteen reloads. Commissioned as *Wolf* on 1 January 1916, the raider sailed on 20 February 1916 but the weather became so bad that it ran aground at the mouth of the River Elbe and had to be towed back to port. On inspection, it was found to be so badly damaged that it had to be decommissioned.

Wolf (ii)

Type	Tons (grt)	Crew	Weapons	Ammunition	Merchant victims		Fate
					No.	Tonnage	
Freighter	11,200	16 + 331	6 × 150mm 1 × 105mm 3 × 52mm 4 × TT Mines	1,200 × 150mm 200 × 105mm 16 × torpedoes 465 mines	13	33,335	Survived

Built as *Wachtels, Wolf (ii)* was commissioned as a raider on 16 May 1916, armed with seven 150mm guns, four torpedo tubes and 465 mines. The ship also carried three 52mm guns and the necessary ammunition to pass onto prizes should the captain choose to outfit and man them for commerce raiding of their own. One very significant innovation was that *Wolf (ii)* carried a seaplane for reconnaissance; a two-seater Friedrichshafen FF.33, known to the crew as *Wölfchen* (little wolf).

Wolf (ii) sailed from Kiel on 30 November 1916 and was escorted by a U-boat during the break out into the north Atlantic via the Iceland-Faroes gap, but thereafter was on its own. It was *Admiralstab* policy that the first priority for commerce raiders was to lay their minefields, so *Wolf (ii)* laid several fields off Capetown, Colombo and Bombay, with a final one in Australian waters. One of the prizes, *Iltis* (q.v.), was commissioned as an auxiliary to lay mines off Aden. *Wolf (ii)* was slow, with a maximum speed of 11 knots and a normal cruising speed of 8 knots, but had unusually large bunkers, holding 8,000 tons of coal, giving her a massive range of some 32,000 miles.

The captain made skilful use of disguises, altering the ship's appearance regularly to lull potential victims into a false sense of security. The seaplane made a significant contribution to the success of the voyage. It was damaged on several occasions, but it was made of wooden frames with fabric covering, and her maintainers showed great ingenuity in repairing her. Indeed, the aircraft was still fully airworthy on the return to Germany – a major achievement.

During this raiding voyage *Wolf (ii)* captured thirty-five ships (approx 100,000grt), transferred the crews and valuable cargo and then sank them. The ship returned safely to Kiel on 24 February 1918, having been at sea for 451 days and sailing around both Australia and New

Zealand. It was a truly remarkable voyage by any standard and the longest by any warship of any navy in the war. On her return *Wolf (ii)* carried 467 prisoners, as well as quantities of materials such as brass, copper zinc, cocoa, copra, rubber and silk. Apart from what had been taken from prizes, no form of external support had been received.

Seeadler

Type	Tons (grt)	Crew	Weapons	Ammunition	Merchant victims		Fate
					No.	Tonnage	
3-masted schooner	4,500	7 + 57	2 × 88mm	400 × 88mm	14	28,140	Wrecked by tsunami, 2 August 1917

Pass of Balmaha was completed in 1878 and remained on the British register until the early 1900s when it was bought by an American company. It was stopped by a British cruiser in the North Sea in June 1915 while on a voyage from New York to Archangelsk and sent to a Scottish port for examination. It was then, however, stopped by a German submarine which sent it to Cuxhaven.

The German Navy had already come to the conclusion that a sailing ship might offer advantages as a raider, primarily freedom from supplies of coal, so this vessel was refitted for this new mission, which included two 105mm guns on disappearing mounts, which were only raised to the firing position when absolutely necessary. Renamed and under the command of the redoubtable *Kapitänleutnant* Graf Luckner, *Seeadler* (sea eagle) sailed on 21 December 1916, disguised as a Norwegian wood carrier. The Pacific was reached safely and during the course of a 225-day cruise *Seeadler* captured and sank fifteen ships, but met her end when she was hit by a tsunami and deposited on a reef in French Polynesia. Some of the crew sailed to Fiji where they were captured and held as PoWs, but the remainder captured a French schooner, *Lutec*, which they renamed *Fortuna* and sailed to Easter Island. They arrived on 4 October, ran aground and were interned by Chile.

Geier

Type	Tons (grt)	Crew	Weapons	Ammunition	Merchant victims		Fate
					No.	Tonnage	
Freighter	9,700	2 + 46	2 × 52mm	1,200 × 52mm	1+	1,442	Scuttled, 14 February 1917

Saint Theodor, a sizeable cargo ship, sailed under the British flag until captured at sea by the raider *Möwe* on 12 December 1916. The Germans installed two 52mm guns and commissioned her as *Geier* on 14 January 1917. In a short career *Geier* captured and sank *Jean*, a Canadian barque (215 tons), and several other small sailing vessels for a total tonnage of 1,442. However, the machinery was in a very bad state and with no prospect of repairs the ship was scuttled off Ilha da Trindade, a small island some 750 miles off the Brazilian coast, on 14 February 1917.

Leopard

Type	Tons (grt)	Crew	Weapons	Ammunition	Merchant victims		Fate
					No.	Tonnage	
Freighter	9,800	15 + 304	5 × 150mm 4 × 88mm 2 × TT	600 × 150mm 450 × 88mm 12 × torpedoes	0	0	Sunk in action, 17 March 1917

British ship *Yarrowdale* (4,652grt) was completed in 1912 and captured at sea by *Möwe* on 11 November 1916. A prize crew then sailed it to Germany where it was fitted with five 150mm and four 88mm guns, and two torpedo tubes. Renamed *Leopard*, it sailed on 16 March 1917, disguised as a Norwegian ship. On the first day at sea it was stopped by the cruiser HMS *Achilles*, which was sufficiently suspicious to order it to sail to meet Armed Boarding Ship *Dundee*, which would inspect her properly. When these two met *Dundee* sent across a six-strong boarding party, but *Leopard* then attacked by launching two torpedoes, both of which missed, whereupon *Dundee* opened up with her single 4-inch (102mm) gun. *Achilles* was alerted by the gunfire and arrived at 0400 and engaged the raider with both gunfire and a torpedo which hit *Leopard*'s bow. *Leopard* sank at 0435 with all her crew, as well as the British boarding party.

Iltis

Type	Tons (grt)	Crew	Weapons	Ammunition	Merchant victims		Fate
					No.	Tonnage	
Freighter	10,700	1 + 43	1 × 52mm	200 × 52mm 25 mines	0	0	Scuttled 5 March 1917

This ship, originally the German *Gutenfels*, was seized by the British in Alexandria harbour in August 1914. In 1915 it was sold to the Anglo-Saxon Petroleum Company and renamed *Turritella*. On 27 January 1917 *Turritella* was captured by *Wolf* (which, curiously, was a sister ship), armed at sea with a single 52mm gun, loaded with a number of mines, renamed *Iltis* and sent to lay the mines in the entrance to the port of Aden. *Iltis* met the British cruiser HMS *Fox* and was scuttled to avoid capture on 15 March 1917.

Vineta (ii)

This name was assumed by *Moewe* (q.v.) for the period June/August 1916.

Goeben* and *Breslau

Although not raiders as such, these two modern and powerful ships formed the Imperial German Navy's Mediterranean Squadron. Battlecruiser *Goeben* displaced 25,400 tons, had a speed of 26 knots, and was armed with ten 28cm (11-inch) guns and twelve 15cm (5.9-inch) guns. Her consort, the light cruiser *Breslau*, displaced 4,570 tons and had a main armament of twelve 10.5cm guns. The outbreak of war on 3 August found them in the western Mediterranean, where they seized the opportunity to bombard two ports in French Algeria but were then ordered to make for Turkey. They needed to refuel, so made for Messina, Italy, arriving on 5 August. *Goeben* took on coal from a waiting German collier and the Italians, then neutral, should have insisted on the two ships staying for just twenty-four hours, but turned a blind eye to a thirty-six-hour stay.

The two ships sailed on 6 August and managed to avoid a British squadron of four cruisers before undertaking a further replenishment near the Greek island of Naxos in the Aegean; they

reached Constantinople on 10 August. They had evaded ships of the British navy but it was clear that their chances of further operations in the Mediterranean were very limited so they were handed over to the Turkish Navy on 16 August and spent most of the remainder of the war operating in the Black Sea. The German commander, Rear Admiral Souchon, was given command of the Turkish fleet, *Goeben* became *Yavuz* and *Breslau Midilli*, while their German crews were issued with Ottoman uniforms and fezzes.

U-Boats

The U-boat offensive was, in effect, commerce raiding in a different and altogether more effective form. The first campaign, from August 1914 to February 1915, achieved some major successes but created a fear among some Germans that it would drive neutrals, particularly the United States, to join the Allies. The grand total of British, Allied and neutral shipping sunk by U-boats was 5,282 vessels (12,284,757grt). The U-boats also caused repeated strategic and political crises, out of all proportion to their numbers.

Losses to the U-boat arm were also great. The IGN started the war with twenty-eight U-boats and a further 343 were commissioned between August 1914 and November 1918, of which a total of 178 were lost. Losses in manpower were also great: 5,147 killed and 1,400 taken prisoner.

Land Targets

Apart from attacks on merchant shipping, there was a second element to this German naval campaign, which was to carry out attacks on Allied shore targets. In the event, these attacks inflicted little lasting damage, but they did cause serious embarrassment to the British and French navies, which were accused of failing in their duty of protection. This led, in its turn, to forcing both navies to deploy vast numbers of ships to search for and destroy the attackers.

The first incidents were in the Mediterranean where two ports in French Algeria were bombarded on 3 August, with *Goeben* shelling Philippeville and *Breslau* Bône. These bombardments were short in duration and caused little damage, but were totally unexpected and created great alarm. The next attacks were against targets on the British mainland. The first occurred on 3 November 1914 when German surface units attempted to bombard Great Yarmouth, although this turned into something of a fiasco, since their shells landed harmlessly on the beach and one of the cruisers involved, *Yorck*, ran into a German defensive minefield on return to its home port of Wilhelmshaven and sank with considerable loss of life. This was followed by a co-ordinated raid on three English East Coast ports – Hartlepool, Scarborough, and Whitby – on 16 December 1914. The attacks resulted in 137 deaths and 592 wounded, most of them civilians, plus a considerable amount of damage to houses and shops. There was great public outrage, mainly towards the Germans for attacking civilians, but also towards the Royal Navy for failing to protect them.

There were five attacks overseas, all carried out by cruisers. On 8 September 1914 *Nürnberg* attacked Fanning Island in the central Pacific, a major relay station in the British Imperial global cable system. The Germans cut the cable and then departed; there were no casualties. On 20 September *Königsberg* cheekily sailed into the British harbour at Zanzibar, sank a British cruiser, *Pegasus*, inflicted thirty-eight deaths and then departed. On 22 September *Scharnhorst* and *Gneisenau* attacked the French port at Papeete, intending to help themselves to the 5,000 tons of coal known to be stockpiled there. The French set fire to the coal, so the frustrated Germans sank a gunboat and shelled the town, causing much damage but only two deaths. The most famous of these raiders, *Emden*, attacked the port of Madras in southern India on 22 September, destroying a number of oil storage tanks, sinking one merchant ship and killing five civilians. *Emden*'s second attack was on the port of Penang on 28 October sinking a Russian cruiser and a French destroyer; there were some one hundred deaths in the two ships, but none ashore.

Further attacks were intended. *Karlsruhe* was on its way to attack Barbados when it blew up on 1 November. *Emden* was in the act of destroying the trans-Pacific cable in the Cocos Islands when it was attacked and destroyed by HMAS *Sydney* on 4 November 1914. Admiral von Spee was on his way back to Germany and decided to attack Port Stanley in the Falkland Islands as he passed, but encountered Sturdee's battlecruisers and was destroyed on 8 December 1914.

Notes

1. Despite its name, the German 'Australia Station' was headquartered in Kaiser Wilhelmsland (now part of Papua New Guinea).
2. Good quality was essential – the best 'Welsh steaming coal'. Lesser quality, such as US-mined 'Pocahontas coal', led to excessive sludge, corrosion within the furnaces, lessening of range and maximum speed. There was also an increase in the quantity and density of smoke sent up the funnel – an instant signature to a searching enemy.
3. Like the British in Hong Kong, the Germans had a 99-year lease from 1898.
4. *Pegasus* had been using Natal coal instead of the usual Welsh variety, and her boilers were completely clogged, leaving her captain with no choice but to drop fires and clean all the boilers simultaneously.
5. *Ettapedienst* = Base service.
6. Prince Eitel Friedrich (1883–1942) was the second son of Emperor Wilhelm II of Germany by his first wife, Duchess Augusta Viktoria of Schleswig-Holstein.
7. The Pentland Firth field was responsible for sinking the battleship HMS *King Edward VII* on 6 January 1916. The Gironde field sank two French ships.

CHAPTER 2

The Lessons of the First World War

Imperial Germany might have built up its military power on land to make it the most powerful army on the Continent, and had also become the most successful industrial power in continental Europe. Further, by 1914 it had also constructed a navy to the point where, on paper at least, it could challenge the might of the Royal Navy. It had constructed the Kiel Canal to link the Baltic and North Seas, thus overcoming the need to sail round the Skaggerak. Nothing, however, could alter the reality of geography. Thus, in any war with them, the British and French would close the Channel, so that any German ships, whether naval or merchant, would have to go around the British Isles to reach the open ocean, and similarly to return. Even worse from the German point-of-view, allied to this was the fact that their country had come late to the Imperial expansion of the late nineteenth century, and only had a very few, small and isolated possessions outside Europe, whose wartime value was minimal.

The Lessons for Surface Raiding

Partially offsetting this geographical disadvantage, at least in the early part of the war, was that the commerce raiders held the initiative in distant waters. Radar had not been invented and wireless was in its infancy, so the searching British warships had to rely, as had Nelson one hundred years earlier, on the lookout in the crow's nest, coupled with occasional intelligence reports and assessments. Thus, the German ships needed to avoid contact as far as possible, although they could only accomplish their mission if they actually sank merchant ships.

Logistics

One of the inescapable lessons of the First World War raiding campaigns was the vital importance of logistics. No matter how powerful or impressive the warships, if they did not have fuel to power the engines, ammunition for the guns or food for the crew, they would soon become inoperable.

The supply of coal was a permanent problem, primarily because there were few foreign ports which were prepared to allow German warships or auxiliaries to enter in order to replenish their bunkers on anything more than the barest conditions laid down in the Hague Conventions. This meant that a constant procession of colliers had to be chartered and positioned at rendezvous to meet the warships. The transfer of coal was sometimes done at sea, which was very dependent on weather and sea state and it was preferable for all involved for it to be done in a harbour or isolated bay. Wherever it was done, the physical transfer of coal involved back-breaking manual labour for the crew, and was also very time-consuming; as a result, both colliers and ships being coaled were extremely vulnerable during the replenishment process. Nor was that all, since cruiser captains often found that they could not attain maximum speed when coal stocks were low, because consumption increased dramatically with speed. Finally, the easiest coal to obtain was US-mined Pocahontas coal, so called because it was obtained from the Pocahontas coalfield, located in the US states of Virginia and West Virginia. Unfortunately, this was softer than Welsh coal, and caused clogging in the furnaces.

There was no provision to supply replacement ammunition, although this problem did not became severe, since most of the German ships were either sunk or scuttled before they could run out.

A small number of enemy seamen were sometimes killed when their ship was being taken, particularly if they resisted, but once captured all were treated with a modicum of respect and there were very few cases of them being cast adrift in an open boat. But once a raider achieved any success the ever-increasing numbers of prisoners became a problem; *Wolf (ii)*, for example, at one point had 467 prisoners. These had to be provided with somewhere, no matter how crowded or uncomfortable, for accommodation, and once that was sorted out they had to

be fed, provided with water and toilet facilities, and allowed some form of exercise. But, above all, they had to be guarded and if there were too many they became a serious potential threat though sheer weight of numbers, if nothing else.

Global communication was by cable and most German embassies and consulates had their own terminals, but this service was drastically reduced on 4 August 1914 when the British cut many of Germany's major overseas cables. Most larger warships had radios but these were high frequency sets, with limited range, and performance was variable. Indeed, on several occasions von Spee had to send ships to ports where there was a German consul with access to the global cable network in order to obtain the latest news and messages from Berlin.

The black art of electronic counter-measures (ECM) was in its infancy, but wireless operators were already listening to each other. Obviously, they could listen to any message in clear text, but there were also various 'tricks-of-the-trade'. For example, the Telefunken sets used by German naval ships had a characteristic high-pitched tone, which could easily be recognised, while skilled operators could identify other operators by the way they used the Morse key – known as their 'fist'. One major example was when the British Navy successfully intercepted wireless messages on the high seas. In an outstanding feat of code-breaking, Lieutenant Charles Stuart, RN, the signals officer of the cruiser *Glasgow* was able to break the German code and determine that the cruiser *Dresden* would coal at Juan Fernandez Island off Chile, which led directly to her demise.

The deployment of the aircraft aboard *Wolf (ii)* was both imaginative and effective. It enabled the ship's horizon to be greatly extended and led to the capture of numerous prizes which might otherwise have been missed. It was a struggle to keep it airworthy, although the fact that it was made of wood and fabric meant that no special tools or techniques were required.

Long times at sea and lack of dockyards meant fouled bottoms and ever slower speeds. This problem was exacerbated by the lack of docking facilities.

The RN reacted in two major ways, the first being to form their merchant ships into convoys. This was operationally sound, as it concentrated a large number of ships in a very small area, and made them much easier to defend against both surface raiders and U-boats. However, setting up the convoy and maintaining the convoy organisation was a laborious process and diverted British resources.

If the convoys were a defensive measure, then offence was also required and there can be no doubt that the very existence of the raiders tied down a large number of Royal Navy ships and manpower. The British did not control every corner of every ocean, but they were able to deploy and re-deploy their fleets and individual ships to meet every threat and they also had numerous bases in their various imperial and colonial possessions. On top of that there were many countries around the world where a mixture of power politics, diplomacy and commercial interests made them comply with British wishes. Finally, the Royal Navy maintained constant visits to foreign ports where British officers and sailors ensured that the local population gained a good image of Britain and the British.

Conclusions

The surface raiders required a minimal commitment by Imperial Germany. The number of men involved in both the ships and the support organisation was small, and the ships were not only few in number but also by no means vital to the German defence effort. For example, the loss of von Spee's entire squadron and all the men – seven cruisers lost, 2,204 men killed, and 544 taken prisoner – had no impact whatsoever on the German overall war effort and any loss of prestige, either at home or abroad, was quickly forgotten.[1]

On the other hand, the difficulty in finding a few ships in the vastness of the oceans meant that the British were forced to divert large resources. For example, *Königsberg*, a small and basically unimportant light cruiser, occupied the minds and activities of the Royal Navy in East African

waters from August 1914 to July 1915 while, at the peak of its activities, the cruiser *Emden*, operating in the Indian and Pacific Oceans, tied down no less than sixty units of the Royal Navy.

Note

1. Plus the squadron's auxiliary, *Seydlitz* and its crew, interned in Argentina a few months later.

PART II

The Ship – The Design of the Deutschland-class *Panzerschiffe*

CHAPTER 3

What's in a Name?

The three ships of the Deutschland-class have gone down in both popular and naval history as 'pocket battleships', the only warships in any navy ever to bear such an appellation. This matter of the name is an important feature of the *Graf Spee* story, because, while they were known in Germany as *Panzerschiffe* (armoured ships), a somewhat vague term, the name 'pocket battleship' created an aura of power and capability which seemed to be endorsed by *Graf Spee*'s very successful participation in the British Coronation Review in 1937. But, as will be shown, this reputation was undeserved.

For centuries it had been customary to divide warships into broad categories, which were well understood in naval circles, although perhaps less so by politicians and the Press. By the mid-nineteenth century, these included battleship, cruiser, torpedo boat, sloop, torpedo-boat destroyer (later shortened to destroyer), corvette, and so on. This meant that, both nationally and internationally, the designation gave most people some idea of the size and capability of a ship; i.e. a battleship was larger and more powerful than a cruiser, which was, in its turn, larger than a destroyer. New operational perceptions gave rise to new categories; for example, between 1906 and 1918 various battlecruisers were built, while during the Second World War a new type of anti-submarine vessel, which was larger and more capable than the tiny corvette but neither as well armed nor as fast as the destroyer, was designated a frigate.

Battleships

In the eighteenth century sailing ships intended to fight in the line-of-battle in a fleet engagement and which had two or more gundecks were designated under a rating system.[1] Thus, it was clear to all that a First Rate, carrying 100 (later 120 guns), was the most powerful, next came a Second Rate with 90–98 guns, then a Third Rate with 60–90, and finally a Fourth Rate with 48–60.

Once steam was introduced, the rating system fell out of use and major warships were given the generic title 'ironclads', which could be made more specific by the addition of prefixes such as 'broadside', 'central battery', sidewheel', and so on. By 1890, however, the term battleship had come into vogue, being applied to the largest capital ships, although sub-divided in many navies, such as the RN and US, into first- and second-classes.

This changed yet again with the commissioning of HMS *Dreadnought* in 1906, a design so revolutionary that it made all existing battleships out-of-date. So, all ships which followed became 'dreadnoughts' and, ipso facto, all earlier ships became '*pre-dreadnought battleships*'.

Battlecruisers

Dreadnought battleships were large, heavily armed and well-protected, as a result of which they were generally relatively slow. The British attempted to overcome this by developing a new type, which was the same size as a battleship and as well-armed, but economised on armoured protection in order to give greater speed. The concept was based on the idea that the battlecruiser would be fast enough to catch and outgun any other warship except those with heavier amour, i.e. dreadnought battleships, which it could then outrun. These were designated 'battlecruisers' but were built in small numbers and were generally unsuccessful, their one major triumph being at the Battle of the Falkland Islands on 8 December 1914 when a British force, which included two battlecruisers, defeated a German squadron of cruisers under Admiral von Spee. It was never an entirely sound theory and became totally outdated when advances in hull design, coupled with much more powerful engines made battleships just as fast, anyway.

Coastal battleships

The name ‘coastal battleship’ was a somewhat grandiose title for a type favoured in the period 1900–1940 by some of the smaller navies, such as those of Denmark, Norway, and Sweden.[2] These navies had no requirement for an ocean-going battleship, nor were they likely to take part in a fleet action, but they did need a relatively powerful warship which could patrol their territorial waters and act as a deterrent to all but the most major incursions. In all three countries expense played an important role in the design process.

The most powerful of the type were the three ships of the Swedish Sverige-class, completed between 1917 and 1921. With a full load displacement of 7,633 tons, these were armed with four 283mm (11.1-inch) and eight 152mm (6-inch) guns. They had an armour belt of 200mm (8 inches) and protection was enhanced by the positioning of the coal bunkers and oil tanks. These were re-designated from coastal battleships to *pansarskepp* (armoured ships) in 1926.

Small Battleships

From the start of the ironclad era the major navies concentrated on building ever larger, more powerful, better protected battleships, which thus became ever more expensive. The major navies built such designs in an effort to outclass their perceived rivals – there was even a ‘battleship war’ between Argentina, Brazil and Chile. Some smaller navies, however, wanted to build such ships but acknowledged their inability to finance them, which led them to consider smaller battleships. One of the most successful of these was the Spanish Navy’s España-class of three vessels completed between 1913 and 1921. They displaced 15,700 tons and were armed with eight 12-inch (305mm) guns in four two-gun turrets; one forward, one aft and two en echelon amidships. Protection was, however, weak, as were the ship’s range (5,000nm at 10 knots) and speed (19.5 knots).

Once the First World War was over there were strong movements, even among the major naval nations, to bring naval costs down, in the main by imposing limits on the numbers and size of battleships. This led to the consideration in the 1920s of a type known as ‘small battleships’, which differed from coastal battleships in that they were intended for ocean-going missions. The term ‘small’ was, however, purely relative and one such proposal, Vickers Design 802, prepared by Sir George Thurston in 1926, mounted six 16-inch (40.6cm) guns and a displacement of 26,500 tons.[3] None was ever built.

Cruisers

The term ‘cruiser’ originated in the eighteenth century as a functional description of almost any ship which operated independently away from the main battle fleet; i.e. cruising. It could thus be applied to a Fourth Rate, a frigate, or a sloop. In time, however, it began to be applied to a ship which was smaller and less well-armed than a battleship, usually employed on independent missions, such as commerce raiding or protection, but which could also assemble in groups as a scouting force for the battle fleet or be employed as leaders for flotillas of destroyers and, over time, various types emerged. The *Protected Cruiser* had an armoured deck to protect the machinery spaces from incoming shell fragments, with the coal bunkers located along the sides of the ship to provide additional protection. In addition to the internal armoured deck, *Armoured Cruisers* had a side belt of thicker armour, covering about two-thirds of the hull. Some of the larger armoured cruisers, such as the US Navy’s New York-class and the German Navy’s Scharnhorst-class were virtually small battleships. The armoured cruiser eventually evolved into the *Heavy* (or *First-Class*) *Cruiser*, which was, in essence, no more than a change of name. Typical was the British Drake-class, launched in 1901, with a 14,150 ton displacement and mounting two 9.2-inch (23.4cm) and sixteen 6-inch (152mm) guns. The *Light* (or *Second-Class*) *Cruiser* was smaller than the heavy cruiser, with a weaker armament, such as the Highflyer-class with a displacement of 5,650 tons and an armament of eleven 6-inch guns.

The Versailles Treaty

The document which ended the First World War was the Versailles Treaty of 28 June 1919, which imposed swingeing restrictions on future German armaments. Article 190 stated that:
Germany is forbidden to construct or acquire any warships other than those intended to replace the units in commission provided for in Article 181 of the present Treaty. The warships intended for replacement purposes as above shall not exceed the following displacement: Armoured ships 10,000 tons; Light cruisers 6,000 tons; Destroyers 800 tons; Torpedo boats 200 tons. Except where a ship has been lost, units of the different classes shall only be replaced at the end of a period of twenty years in the case of battleships and cruisers, and fifteen years in the case of destroyers and torpedo boats, counting from the launching of the ship.
[4]

The French text read:
Il est interdit à l'Allemagne de construire ou acquérir aucun bâtiment de guerre, autre que ceux destinés à remplacer les unités armées prévues par le présent traité (article 181). Les bâtiments de remplace-ment ci-dessus visés ne pourront avoir un déplacement supérieur à 10,000 tonnes pour les cuirassés; 6,000 tonnes pour les croiseurs legers; 800 tonnes pour les destroyers; 200 pour les torpilleurs. Sauf en cas de perte du bâtiment, les unités de différentes classes ne pourront être remplacées qu'après une période de: 20 ans pour les cuirassés et croiseurs; 15 ans pour les destroyers et torpilleurs, à compter du lancement du bâtiment.
The relevant terms are 'armoured ships' in the English version and 'Cuirassés' in the French (both underlined by this author).
In a separate document the French defined a 'cuirassé' as 'un grand navire de guerre doté d'un épais blindage, dont l'armement principal est formé de pièces d'artillerie du plus gros calibre'. ('A large warship with thick armour and with a main armament of guns of the largest calibre.')

Washington Naval Treaty

An international naval conference was held in the United States from 12 November 1921 to 6 February 1922 which resulted in the Washington Naval Treaty. This carefully avoided type names, except for aircraft carriers, but divided warships into two categories, the largest of which were 'capital ships' limited to a maximum of 35,000 tons (35,560 tonnes)[5] and an armament of no greater than 16-inch (406mm) calibre.[6] The only other stipulation was in Articles XI and XII[7] which, without actually saying so, meant that new cruisers could not displace more than 10,000 tons nor mount guns of calibre greater than 8-inch (203mm).

Enter the Pocket Battleship

The term 'pocket battleship' was coined in Great Britain, but by whom and when it was first publicly used has proved impossible to establish. It was certainly in use even before the launch of the first-of-class *Deutschland*, as *The Times* dated 29 April 1931 reported that:
THE GERMAN FLEET: 'POCKET BATTLESHIP' TO BE LAUNCHED AT KIEL. Berlin Apr 28. The launch at Kiel on May 19 of the first 'pocket battleship' built under the replacement clauses of the Treaty of Versailles at Kiel, the birthplace of the naval mutiny, has been eagerly awaited, with the typical German sense for symbolic events, as marking the rebirth of German sea-power. Germans are proud of the ingenuity that designed a ship, within the limits laid upon German naval construction by the Peace Treaties, of such speed and fighting strength. It is claimed that the 10,000-ton *Deutschland*, which has cost £3,000,000 to build, with her six 11-inch and eight 5.9-inch guns, her 28 knots, and her 10,000-mile steaming radius, will be able to sink anything that can catch her and escape anything that can sink her. (*The Times*, 20 May 1931)
The civilian and unclassified arbiter of naval matters is the annual publication *Jane's Fighting Ships*. The 1929 edition categorised *Deutschland*, the first of class, as 'Battleship, rated as Armoured Cruiser [*Panzerkreuzer*]' with the additional note that 'Though "Panzerkreuzer" is the present official classification, this type actually approximates more closely to a battleship,

which is also the class of ship it is being built to replace'. However, Jane's later modified this to use the German designation of 'armoured ship'.

Germany

The Germans themselves never referred to the Deutschland-class as 'pocket battleships', except occasionally when reporting the phrase as being used by the foreign navies.[8] In the Kriegsmarine and the German press, the class was always referred to, as in the Versailles Treaty, as *Panzerschiffe* (armoured ships) until 1941 when the two survivors were redesignated heavy cruisers.

Conclusion

There is no doubt that the Deutschland-class *Panzerschiffe* had an impressive appearance. They bristled with weaponry, with the massive 28cm (11-inch) turrets dominating the whole design, through the multitude of secondary weapons down either side, to the prominent torpedo tubes on the quarterdeck. For foreign observers, this appearance of naval power seemed to be endorsed by the title of 'pocket battleship' which implied that these ships somehow combined the power, weaponry, protection and speed of a battleship in a design less than half the displacement of its contemporaries. It will now be shown that this reputation was almost completely undeserved.

Notes

1. In the Napoleonic Wars the term 'line-of-battle-ship' was sometimes shortened to 'battleship' but this does not seem to have been very general.
2. The French also had built four *bateau de défense* in the 1890s and scrapped them between 1911 and 1922.
3. *Brassey's Naval and Shipping Annual*, 1926. Thurston was Chief Naval Architect at Vickers 1900–1920.
4. Source http://avalon.law.yale.edu/imt/partv.asp
5. **Article V**. No capital ship exceeding 35,000 tons (35,560 metric tons) standard displacement shall be acquired by, or constructed by, for, or within the jurisdiction of, any of the Contracting Powers.
6. **Article VI.** No capital ship of any of the Contracting Powers shall carry a gun with a calibre in excess of 16 inches (406 millimetres).
7. **Article XI**. No vessel of war exceeding 10,000 tons (10,160 metric tons) standard displacement … **Article XII.** No vessel of war of any of the Contracting Powers, hereafter laid down, other than a capital ship, shall carry a gun with a calibre in excess of 8 inches (203 millimetres).
8. For example, '"*Westentaschenkriegschiffe*" haben die Engländer und Frazosen diese 10,000-Tonnen-Schiffe getauft …' Dau, *Unentdeckt über die Meere*, p. 17. (= '"waistcoat pocket warship" as the English and French have dubbed these 10,000 ton warships …'

CHAPTER 4

Ship Design

Graf Spee took part in the Battle of the River Plate in December 1939 at a time when the Deutschland-class design was essentially thirteen years old. The original design team had been led by Marine Oberbaurat (Naval Senior Constructor) Blechschmidt, who would later be responsible for the *Scharnhorst* and *Gneisenau*. The Deutschland-class consisted of three ships: the name-ship, *Deutschland* (later renamed *Lützow*) commissioned in 1933; *Admiral Scheer* (1934) and *Admiral Graf Spee* (1936). The design purported to be within the restrictions imposed by the Versailles Treaty and the ships were replacements for the old pre-Dreadnought battleships *Preussen, Lothringen* and *Braunschweig*. Naturally enough, the design was developed in detail between each of the three ships and all three underwent periodic refits during their service, but the basic design remained unchanged.

Hull

The hull of the *Graf Spee* was 610 feet (186.0m) long overall, 596 feet (181.7m) at the waterline and, as the stem was straight and almost vertical, most of the 14 feet (4.3m) overhang was at the stern. Maximum beam was 71 feet (21.65m). Draught was 24.2 feet (7.3m) at maximum load; 19.0 feet (5.8m) at standard load.

The hull was constructed of Krupp ST52 steel plate[1] and consisted of transverse frames with longitudinal stringers and, since one of the primary considerations was saving weight, it was over 90 per cent electro-welded. The armour was predominantly nickel steel with a maximum thickness on the side belt of 3.1 inches (80mm) and on top of 2.8 inches (69mm). The forward command centre had sides of 5.9 inches (150mm) and a roof of 2.0 inches (50mm), while the two main turrets had faces of 5.5 inches (140mm). One of the aims of the design was that the ship should be able to withstand hits by any enemy that could catch it, in other words to resist any vessel short of a battleship, but during the Battle of the River Plate the thickest armour was pierced on several occasions by 8-inch (20.3cm) shells from HMS *Exeter*.

The strongest warship hull is flush-decked, i.e. the upper deck is continuous from stem to stern, so that the hull is, in effect, a box girder. The majority of German capital ships and cruisers from 1914 on had flush decks for this reason, but the Deutschland-class was a 'broken-deck design', i.e. it had a flush deck for most of its length, but with a break aft and a 121-feet (37m) long quarterdeck one level lower. Such a break is notoriously mechanically weak, placing a huge strain on the join, as was amply demonstrated on 11 April 1940 when *Deutschland* was hit aft by a torpedo from the British submarine *Spearfish*.[2] The propellers and torpedo tubes simply disappeared and the rudder was locked but, of far greater importance, the hull split precisely at the break, with a 4-feet (1.2m) wide gap at deck level, and the stern just hanging on. Indeed, when the ship eventually reached Kiel and was dry-docked it was discovered that it was only the two immensely strong propeller shafts that had kept the stern section attached to the hull at all.

One curious feature of the hull design was the large number of portholes – no less than 167 on each side. Their purpose was to provide ventilation and lighting for the spaces inside, but every one of them represented a potential weakness.

Graf Spee never had to experience really severe weather during her operation in the south Atlantic. However, it is worth noting that *Deutschland*, during her 1939 offensive cruise in the north Atlantic, did undergo some really bad weather, resulting in splits in the superstructure, while several motor rooms were repeatedly flooded. The ship was not in serious danger of foundering and the engineers kept the engines running, but it was, nevertheless, a very significant factor in that ship's early return to Germany.

Handling

Graf Spee is generally described in German books 'as a good sea-boat', but this is not borne out in many contemporary accounts. When heading into a sea the near-vertical bow tended to dig in resulting in 'shipping it green' over the forecastle and, unless in combat, in such circumstances Turret Anton had to be veered outboard at 90 degrees. This shortcoming was already well known and it was planned that all three ships would be fitted with a lengthened 'Atlantic bow' with greatly increased stem rake, but, in the event only *Deutschland* and *Scheer* were so fitted.[3]

This was known as early as 1934, as indicated in *Jane's Fighting Ships* of that year, when describing the *Admiral Graf Spee*, then under construction: 'raising of the foreturret is under consideration in this or later ships as *Deutschland* is very wet forward.'[4] Again, Captain Dove provided an eyewitness account.

I knew that we must be well into the Roaring Forties, there was a strong westerly wind and the ship was diving and butting into a heavy

head sea…. From where I stood in the lee of the funnel I could see that the *Graf Spee* was making a beast of herself, as we say in the service. She (sic) was pitching and rolling, heavy seas were breaking sheer across her, and time after time she buried her foredeck in solid green seas right over her forward gun turret.

[5]

In a stern sea or when at high speed the quarterdeck was also frequently submerged and uninhabitable, and equipment was regularly carried away, which was the reason for large protective cowls over each of the two sets of torpedo-tubes. Such a shortcoming was by no means confined to these three German ships, and the British battlecruisers *Hood, Repulse* and *Renown*, which had similar broken-deck designs, were also notoriously 'wet' aft.

Handling in action was helped by the technique of running half the diesels on each shaft ahead and the other half astern, which meant that the transmission could be switched very quickly enabling very rapid turns to be made – although with a lot of heel (up to 13 degrees). Many British participants in the Battle of the River Plate, including Commodore Harwood, commented very favourably on *Graf Spee*'s manoeuvrability.

During the voyage south from Germany the ship went through several storms, where its handling and lack of response led Langsdorff to feel that his ship was overloaded and lay too deep in the water – there was a vast amount of stores and ammunition, and the number of men was well in excess of the establishment figure. One result was that during his first meeting with *Altmark* on 3 September he transferred a variety of items including the landing sail for the Arado (which had proved of little use, anyway), various spars and the contents of the inflammable paint store.

Anti-Roll

Soon after completion, *Deutschland* made a trial voyage to the Atlantic, where the ship was found to roll prodigiously, which would clearly effect the provision of a steady gun platform. In the late 1920s anti-roll devices were being introduced in some foreign warships and large passenger liners, so the Germans adopted a similar system for the *Panzerschiffe*, which was retrofitted to *Deutschland* and built into both *Scheer* and *Graf Spee* during construction. These gyroscopically-controlled devices worked on variable flooding of a large tank in the ship's bottom, but used a vast amount of electrical power and were slow to react, so were only switched on when firing the main armament. As a result it was decided to remove them and use the space thus vacated for additional bunkers. *Graf Spee* was earmarked for this work in late 1939 but she sailed for the South Atlantic before it could be started although, as far as is known, it was never activated during the voyage.

Cooking Facilities

One apparently minor design feature that was to become significant in the battle was the

failure to either protect or duplicate some of the essential equipment. Thus, an auxiliary boiler was located in the base of the funnel and was the sole supplier of steam to the galley, the oil purification plant and the fresh water production machine. This boiler was put out of action during the battle thus preventing the use of the services it supported. The galley (where all food was prepared and cooked) was located in a deckhouse on the upper deck between the funnel and the bridge tower, and was itself damaged, in addition to losing its steam supply. In other navies the galleys were within the hull, which gave them a degree of protection. The reason for placing the galley in such a vulnerable position in the Deutschland-class may well have been that this followed German First World War practice when warships were designed for forays of no more than a week in the North Sea, so that if the galley was destroyed or seriously damaged the problem would only be short-lived.

The Unique Bridge Tower

Throughout the First World War the general pattern of bridge structures took the form of an open command bridge, a feature inherited from sailing ships, with an armoured conning-tower used during combat only. All also had a control top (fire control centre) supported by a tripod of armoured tubes, except in the United States Navy, where capital ships built between 1908 and 1920 had unique cage (lattice) masts.

The 1920s saw considerable new thinking among the major navies on the nature and role of bridges and battlemasts, one of the conclusions being that there was no longer any merit in exposing the command staff to the weather. The British opted for huge box-like structures, as in the Nelson-class. The Japanese developed very convoluted bridge structures, which were installed in their battleships during their 1920s rebuilds. In these, a basic tower supported an astonishing array of platforms, resulting in a complicated structure known, somewhat derisively, to Western navies as a 'pagoda-tower'.

The bridge in first-of-class *Deutschland* was a low structure, approximately half the width of the ship, containing an enclosed navigation bridge with a semicircle of windows and an open captain's bridge above. There were flying bridges at both levels to enable command staff to see astern. Above this was a battle mast, a very tall cylinder with a circular forward fire control post at its head, which was itself topped by a rangefinder. These masthead installations were reached by means of steps inside the mast. This design had an unforeseen consequence when the ship was attacked and hit by Spanish aircraft on 29 May 1937. The force of the explosion blew off a below-decks mast access door and, when a severe fire started in Turret Anton, the mast acted as a flue gas stack, with smoke rising through the mast, causing air to be ingested onto the fire, which thus increased in ferocity.

The next two ships in the class, *Scheer* and *Graf Spee*, had a quite different arrangement, with a unique tower mast, whose top was some 84 feet (25.8m) above the waterline, with the rangefinder cupola adding another 15.7 feet (4.8m) above that.[6] The tower was rectangular in planform with eight levels, including wheelhouse, navigation bridge, admiral's bridge, admiral's sea cabin, captain's sea cabin, communications office, foretop, and gunnery control office, with the rangefinder at the top. The height conferred a major advantage in that it placed the rangefinder (and later the radar antenna, as well) at the highest possible point on the ship, thus giving them the maximum possible range. There were, however, two resulting disadvantages. First, its height and shape were unique to *Admiral Scheer* and *Graf Spee* making them easy to identify at a distance. Secondly, as was discovered during the engagement phase on 13 December, it was so high that it stuck out above smoke screens, enabling the British gunnery officers to track the ship, despite the obscuration below.

One of the most distinctive features of *Graf Spee*'s tower mast was the foretop (*Vormars*), a platform surrounding the mast just below the rotating cupola, consisting of a walkway edged by a chest-high bulwark of mild steel. This was similar in function to the 'crow's nest' used by

other navies, but was far more accessible and offered an unimpeded 360-degree view, a factor which was to have a significant effect in the Battle of the River Plate.

Immediately forward of the battlemast, but behind Turret Anton, was the command centre (*Kommandostand*), a heavily armoured structure intended to house the command team during battle. It had sides 5.5 inches (140mm) thick of Krupp cemented steel, a roof of 2-inch (55mm) thick nickel steel, all topped by the 23 feet (7m) rangefinder in a rotatable cupola. There were also several periscopes let into the roof. This was supposed to be the battle station for the captain, his gunnery officer and the Gunnery Control Table, but proved to be too low, too crowded and with very limited visibility.

Ship's Boats

Graf Spee carried eight boats; two barges, two picket boats, one launch, one pinnace and two dinghies. These provided *Graf Spee* with the usual services of ship-shore, ship-to-ship transport and occasional recreation, but had an additional – and vital – function as they ferried stores between the supply ship, *Altmark*, and the warship during their many replenishment meetings, as will be described.

Refits

All warships undergo periodic refits where new equipment is added; damaged, obsolete or redundant equipment removed; mechanical equipment, such as the engines, serviced; the bottom of the hull is scraped and cleaned; and wear-and-tear made good. Having entered service in January 1936 *Graf Spee* underwent a minor refit in 1938, without being decommissioned, where the most significant work done was fitting an *FMG G(gO)* radar in a combined installation with the main rangefinder atop the tower. Other work included rounding off the corners on the foretop and a re-adjustment of the searchlights, with the two either side of the tower being replaced by a single searchlight on a new platform on the front of the tower.

A major refit was scheduled for late 1939/early 1940 where the major work would have included installing a new, longer and more raked bow with increased flare to overcome the sea-keeping problems. This was known in the German navy as the 'Atlantic bow' but internationally as a 'clipper bow'. Other planned changes included fitting a funnel cap, installing a mine protection system and the removal of the ineffective roll-damping system. None of this work was done, so *Graf Spee* deployed on her wartime cruise in a virtual 'as-built' configuration.

Notes

1. A carbon steel with a tensile strength of 52kg per sq. mm (approximately 74,000 psi).
2. The *Spearfish* launched a spread of four, which obtained this single hit, presumably from the left-hand torpedo. It had no more torpedoes so could not administer the coup de grace.
3. *Gneisenau* and *Scharnhorst* were also completed with a vertical stem and had an Atlantic bow fitted in 1938–39.
4. *Jane's Fighting Ships, 1934*, p.225.
5. Dove, op cit., pp. 88–9.
6. The German terminology was: navigating/ship's bridge – *Navigationsbrücke*; admiral's bridge – *Admiralsbrücke*; tower mast – *Turmmast*; captain's sea cabin – *Kommandantenkammer*; foretop – *Vormars*; rotating control top – *Vormars-Drehhaube*.

CHAPTER 5

Armament

As with any warship, the most significant feature of *Graf Spee* was its armament. The main weapons were six 28cm (11-inch) guns in two triple turrets, which, in accordance with German Navy custom, were designated Anton (forward) and Bruno (aft). Secondary armament consisted of eight 150mm (5.9-inch) in single turrets, six 106mm (4.2-inch) in three twin turrets and six 20mm cannon in single mounts. There were also eight torpedo tubes in two quadruple mounts.

Main Armament

The main armament of the *Graf Spee* comprised six 28cm/52 (11-inch) SK C/28 guns.[1] The calibre of this ordnance was always quoted as a round figure – 28cm (11-inch) – although in reality was marginally greater at 28.3cm (11.14-inch). Each barrel was 52 calibres long, i.e. 583 inches (14.8m), and, complete with breech, weighed 106,262lb (48,200kg). Each barrel had a rate of fire of 2.5 rounds per minute, giving about seven rounds per turret. Each barrel had a life of 340 effective full charges (EFC).

The turret was designated DrhLC/28 (*Drehscheiben-lafette* (turntable mounting) and had a revolving weight of 590 tons (600 tonnes). The gunhouse was built on a frame to which the armoured plates were secured by rivets and bolts and then welded; the face armour was 5.5 inches (140mm) thick, side armour 3.4 inches (85mm), and the roof varied between 3.4 and 4.1 inches (85–105mm). Each turret had a 10.5m (34.5 feet) rangefinder at the top rear of the turret, with the two external lenses being protected by armoured hoods.

The main charge weighed 156.3lb (71.0kg) and the fore charge 79.4lb (36.0kg). Each barrel returned automatically to an angle of 2 degrees (zero position) for reloading and there was an interval of 20–25 seconds between salvoes.

There were three natures of ammunition: armour-piercing (AP); high explosive (HE) base-fuzed; and HE nose-fuzed. All of these weighed 661.4lb (300kg). HE base-fuzed was intended for use against lightly armoured targets, the idea being that it would penetrate deep inside the hull before exploding, thus maximising the damage caused. HE nose-fuzed exploded on impact and was for use against lightly armoured targets, with the splinters being particularly devastating to personnel. AP was for use against heavily armoured targets and, as the name implies, was designed to penetrate armour plate before exploding. One consequence of this was that if an AP shell was used against unarmoured targets it would often pass through the entire ship and emerge on the far side before exploding relatively harmlessly over the open sea. In any engagement, one of the most important judgements to be made by the Gunnery Officer was which type of shell would be used.

The maximum stowage aboard *Graf Spee* was 120 rounds per gun, but for her war cruise she sailed with 100 rounds, a total of 600, which were split equally, with 200 each of AP, 200 HE Nose Fuze and 200 HE Base Fuze rounds. Further rounds were, of course, available from *Altmark*.

The two turrets could train to 145 degrees either side of straight ahead (Anton) or of dead astern (Bruno), at a rate of about 6 degrees per second. In practice, however, the limits were probably less, since the forward turret could not have trained quite so far due to blast effects on the bridge, while the after turret would have been limited if the floatplane was on its catapult. The guns could be elevated from –10 to + 40 degrees, the rate of elevation being about 8 degrees per second.

When driving into heavy seas the *Graf Spee* tended to ship a great deal of water over the bow and Turret Anton was, therefore, slewed to starboard to protect the tubes.

28cm Gun: Ranges using Armour Piercing Ammunition

Range	Barrel elevation	Impact velocity

	(degrees)	
5,470 yards (5,000m)	1.9	2,467ft/s (752m/s)
10,940 yards (10,000m)	4.5	2,005ft/s (611m/s)
16,400 yards (15,000m)	8.0	1,617ft/s (493m/s)
21,870 yards (20,000m)	12.5	1,335ft/s (407m/s)
27,340 yards (25,000m)	18.6	1,181ft/s (360m/s)
32,810 yards (30,000m)	26.3	1,158ft/s (353m/s)
38,280 yards (35,000m)	36.4	1,247ft/s (380m/s)

Gunnery Technique

The lack of a third turret was a serious tactical limitation. It meant that the ship could engage no more than two targets simultaneously, although during the battle on only one occasion was the fire ever divided between the two turrets; usually, both always fired at the same target. Further, in a bow or stern engagement only one turret could be brought to bear unless the ship altered course to enable the second turret to join the engagement. If one turret became unserviceable then only one turret could continue the engagement. However, once 11-inch calibre weapons had been selected the turrets were of such a weight and size that a 10,000-ton hull could not accommodate more than two turrets.[2]

The control of the two 11-inch turrets was exercised centrally throughout the main engagement on 13 December by the Gunnery Officer (Ascher) and, except on the occasion described below, he always fired both turrets at the same target. His technique was to use the optical rangefinder to establish an accurate range and then to fire a ranging salvo from one of the two turrets, which was deliberately aimed slightly short, observe the splash, calculate the correction and then fire for effect with both turrets. When the British saw incoming rounds in groups of three, it gave them the impression that the two turrets were engaging different targets. The only exception to this procedure was in the late evening of 13 December when *Graf Spee* was in the dredged channel approaching Montevideo, whose narrowness prevented Langsdorff from veering from his course to enable both turrets to engage.

While this method proved highly effective against *Exeter* its deliberate nature became predictable and the two British light cruisers, which were both fast and very manoeuvrable, were repeatedly able to predict where *Graf Spee*'s second salvo would fall and steer away from it.

Secondary Armament

Graf Spee's secondary armament comprised eight 15cm SK C/28 guns in single turrets, amidships, with four on either beam. The gun was of nominal 15cm (5.9-inch) calibre, although to be precise was 149.1mm (5.87 inches). Overall length was 55 calibres (8,200mm (322.8 inches). The projectile weighed 99.87lb (45.3kg). Maximum range was 24,000 yards (22,000m) at 35 degree elevation and rate-of-fire ten rounds per minute. The gunhouse was open at the rear, thus depriving the crews of protection against blast effects from incoming shells and the weather.[3] These weapons were to prove surprisingly, indeed totally, ineffective during the battle on 13 December when 377 rounds were fired and not a single hit was scored on any of the British ships.

Anti-Aircraft Guns

The only significant German naval disaster of the interwar years came on 29 May 1937 when *Deutschland* was operating as part of the International Non-Intervention Commission during the Spanish Civil War. The ship had just entered Ibiza harbour when it was the victim of a co-ordinated attack by six Republican warships and two aircraft. The warships achieved virtually nothing, but the aircraft dropped a number of bombs, two of which hit the German ship, causing extensive damage, killing thirty-one and wounding 110, many of them seriously. This

was a portent of what was to come in the Second World War when vast numbers of warships were sunk by aircraft, but this early lesson was ignored, even by the Germans, and in 1939 *Graf Spee* mounted only six 105mm/65 in three twin mounts, four twin 37mm and between ten and twenty-eight 20mm cannon. This was completely inadequate and fortunately for its crew *Graf Spee* never came under air attack although *Ajax*'s Seafox came under fire when it approached too close during the battle.

The 105mm/65 SK C/35 was mounted in pairs on a tri-axial mounting, one of the first in any navy, designed to maintain lock-on by compensating for the motion of the ship. It was electrically-driven and, surprisingly in a German design, the system was insufficiently waterproofed and thus prone to faults. Elevation limits were –8 to + 80 degrees at a rate of 10 degrees per second. Training was 360 degrees at a rate of 8 degrees per second. Maximum rate of fire was a mere eighteen rounds per minute

There were eight 3.7cm SK C/30 semi-automatic cannon in four twin mounts for short-range air defence. As with the 105mm guns these were tri-axial mounts, but in this case gave a lot of trouble and were discontinued later in the war. As the weapons were semi-automatic (i.e. loaded by hand) they were too slow – approximately thirty rounds per minute per barrel – to be an effective AA weapon later in the war, and were barely adequate even in 1939–40.

Torpedoes

There were two banks of four torpedo tubes each mounted on the quarterdeck, which were normally parked parallel to the ship's side, but were rotated outwards to launch. The torpedoes were the 533mm (21-inch) G7a, which was 23 feet 7 inches (7,186mm) long and weighed 3,369lb (1,528kg), of which the explosive charge (Hexanite) accounted for 661lb (300kg). There were two speed settings – 30 knots and 40 knots – for which the maximum ranges were 13,700 yards (15,000m) and 8,200 yards (7,500m) respectively.[4] The torpedo was powered by using compressed gas (Decalin) and water to generate super-heated steam, which drove a four-cylinder, radial engine. The G7a was a straight-runner (i.e. it had no guidance) but was fitted with gyroscopic stabilisation and variable depth setting.

When used by surface ships the G7a was set to run very shallow and to hit the target ship's side. Operational experience showed that two torpedoes were needed to sink even an average merchant ship, but that presupposed a hit or very near miss. However, as was discovered by both surface ships and U-boats of the *Kriegsmarine* the G7a was very unreliable, while the noise and trail of bubbles quickly gave it away.

There were two recorded occasions when *Graf Spee* used its torpedoes operationally, the first being when two torpedoes were launched against the captured tramp steamer *Clement* on 30 September 1939. Both *Graf Spee* and the target were stationary, the sea was calm, visibility excellent and range short, but both missed; one passed ahead of the target, the other underneath – and *Clement* had to be disposed of by gunfire.[5] Orders were also given from the bridge at 0716 hours during the Battle of the River Plate for a salvo of torpedoes to be fired, but the ship turned violently just as they were being launched. Only one actually got away and sped off into oblivion, while the deck officer ceased launching the others.

Unbeknown to the crew of the *Graf Spee*, there was a serious problem concerning all *Kriegsmarine* torpedoes. They had, of course, heard on the radio that *U-47* (Prien) had sunk the British battleship *Royal Oak* in Scapa Flow on 14 October 1939 but what they (and the rest of the world) were not told was that Prien had actually launched seven torpedoes. The first five missed, even against a massive and stationary target, and only the last two, launched by Prien in some desperation, hit. This and other failures led inescapably to the conclusion that German torpedoes, both surface and submarine launched, were extremely unreliable, particularly concerning depth-keeping, where they frequently ran well under the target's keel, as almost certainly happened with the *Clement*. The problems were eventually solved, but that was far

too late for *Graf Spee*.[6]

Apart from the torpedoes themselves, quite why the designers should have chosen to site the tubes on the quarterdeck is not clear. All such launchers were mounted on an axle and were usually aligned with the side of the hull, except when about to be launched when they were rotated outwards by 90 degrees. Thus a launcher needed a fair amount of deck space and the only possible explanation is that, with all the weapons and facilities they had to fit on a relatively small hull, the designers could not find sufficient space anywhere else.

Detailed examination of contemporary warships of major navies, including the German, does not show any design other than the Deutschland-class that had tubes mounted on the quarterdeck in this manner. During the First World War most all battleships were armed with two or more tubes, but these were almost always submerged, pointing either on the beam or astern. In the 1920s, however, the tubes were moved to above the waterline, usually amidships, either on an open deck or in a recess between decks. *Graf Spee*'s quarterdeck was dangerous in any sort of sea, but particularly so when the ship was steaming hard, and it was commonplace for deck fittings to be lost. An added hazard during the battle was that the ship made frequent hard turns, making it difficult for the men at the tubes to retain their footing. Further, the tubes were some twenty feet in front of the muzzles of the guns of Turret Bruno, which exposed them to the blast of the guns when fired in the aft quadrant, and the tubes could not be manned during such a situation.

Comments

The armament of *Graf Spee* looked impressive and had a great effect on uninformed onlookers, such as at the Coronation Fleet Review in 1937. The two triple 28cm (11-inch) turrets were particularly striking, their visual effect being enhanced by their great size in proportion to the rest of the ship and seeming to give endorsement to the popular title of 'pocket battleship'. Further, the midships section bristled with weapons: eight 15cm (5.9-inch) guns, and numerous anti-aircraft weapons, while the torpedo tubes were prominently displayed on the quarterdeck. It is reported (but cannot be authenticated) that in the mid-1930s a British officer asked a German officer why the 11-inch (28cm) gun had been chosen, to which the latter replied that it was the largest calibre they could get away with without objections from the Versailles Treaty powers.

But all was not as it seemed. First, while it appeared that the two main turrets could engage two targets simultaneously the control rules were so rigid that both had to be used against only one target at a time. Secondly, a problem with one turret, through breakdown or battle damage, immediately robbed the ship of 50 per cent of its firepower. This was greatly inferior to an armament of three turrets, but was forced on the German designers by the political need to keep within the 10,000-ton limit.

The secondary armament of eight 15cm guns appeared powerful but, as will be seen, was totally ineffective in the battle on 13 December due to some inadequacy, never explained satisfactorily, in the fire control arrangements.

Anti-aircraft defence was poor, although, to be fair, the attack by the two Spanish bombers on *Deutschland* in 1937 came after *Graf Spee* had been completed. Nevertheless, it was fortunate for Langsdorff that his ship was never attacked by the Fleet Air Arm.

Finally, the torpedo tubes were badly sited and, although no fault of the designers of the ship, the torpedoes themselves were of very dubious value.

Notes

1. SK = *Schiffskanone* (= ship's gun). "/52" is the length of the barrel expressed as a multiple of the calibre, in this case 28 × 52 = 14.56m. 'C/28' = *Constructionsjahr* (= year of design, in this case, 1928).
2. Rather like icebergs, the visible element of a ship's turret topped a complicated array of ammunition rooms, powder rooms, hoists, etc. The revolving weight of one turret was 590 tons (600t), meaning that the two turrets represented about 12 per cent of the available weight.

3. This was recognised and put right on later ships.
4. There was a third speed setting for 44 knots but this overloaded the engine and was disabled at the time *Graf Spee* went to sea.
5. Rasenack, p. 54.
6. The torpedo problem became a major scandal, with admirals and captains being sacked, and some even being court martialled.

CHAPTER 6

Propulsion

Type	Eight MAN two-stroke diesels, M9Z 42/58 (each 9 cylinders, 420mm bore, 580mm stroke). Normal operating speed – 450rpm.
Power output (per engine)	6,563hp normal, 7,000hp at emergency rating.
Total	Four sets, each of two M9Z. Total available power = 52,504bhp.
Shafts	Two.
Propellers	Two three-bladed propellers, each 3.82m diameter. Maximum shaft speed 250rpm.
Rudder	One, remotely controlled, spade rudder, 49m^2; emergency manual control aft.
Speed	Design speed – 26kt, trials – 28.5kt, actual (13 December 1939) – 22–23kt.
Fuel	2,500 metric tons (2,749 tonnes).
Range	8,900nm @ 20kt; 20,000nm @ 18kt.
Hotel Function[1]	Eight MAN 5-cylinder, Type M5Z 42/58, diesel generators in four twin-engine sets; 3,360kW at 220v DC.

The initial operational requirement for the three *Panzerschiffe* was to defend the sea routes between metropolitan Germany and East Prussia, operating in either the Baltic or the North Sea. It was also necessary to comply with the dictates of the Versailles Treaty. One way to help achieve all this was by installing diesel rather than steam propulsion, a decision which caused controversy within the German Navy and considerable surprise in foreign navies.

Diesel engines had been used in German ocean-going merchant ships since 1908 and in U-boats since 1912, and in both cases they proved both effective and economical, but nothing on the scale of the *Panzerschiffe* had been attempted. The 1920s were, however, a painful period for the German armed forces as they attempted to rebuild after the disasters of 1918, but this had to be done within the straitjacket of the Versailles Treaty. Among the navy's propulsion experts, however, there were two schools of thought: one advocated diesels, the other high-pressure steam turbines.

The approach to an all-diesel large warship was a gradual one. The first major warship to be built in Germany after the war was the light cruiser *Emden*, completed in 1925, which was powered by four coal-fired and six oil-fired boilers driving conventional steam turbines. Next to appear were the three Königsberg-class cruisers which had both steam turbines and diesels, in an 'either/or' system, with the diesels being used for cruising at up to 10 knots and steam turbines for a flank speed of 32 knots, but the two systems could not be used together. These were followed by the cruiser *Leipzig*, laid down in 1928, which had a combined system in which the steam and diesel systems could be used together, as well as separately. There were three shafts, with two diesels coupled through a common gearbox to the centre shaft for sustained cruising at moderate speed (up to 18 knots), and steam turbines on the two outer shafts, which were brought in to achieve maximum speed of 32 knots. Thus the all-diesel installation in the Deutschland-class was a daring innovation.

Propulsion power for the *Graf Spee* was provided by eight MAN 9-cylinder diesels, each of 6,563 horsepower, or 7,000 horsepower for short periods in an emergency. These were coupled through two drive systems to two shafts, each turning a 12.5-foot (3.8m) diameter three-bladed propeller. There were also four MAN 5-cylinder diesels providing auxiliary power for non-propulsion functions.

Among the advantages of diesel engines were that they took much less volume than a steam-turbine system, were much less complicated and required many fewer men to operate and maintain them. This last was important since it reduced the numbers to be accommodated, fed

and administered. Diesels were also much more economical in terms of fuel. This gave the ship considerable range, although this depended on a number of factors, such as speed, acceleration and the number of engines used. Typically, *Graf Spee* could cover 16,300nm at 18 knots, reducing to 8,900nm at 20 knots, and 7,900nm at 26 knots.

Diesel-engined ships could drift at low speed or even remain stationary, since they could develop full power quickly. Much is made in some sources of the superior performance of diesel over steam turbine propulsion for acceleration, although this should not be overstated. It is certainly correct that when two Second World War warships were alongside and had to get to sea quickly, then the diesel-powered ship would get away sooner, because it did not need the lengthy process of 'getting up steam'. One coincidental, but nevertheless valuable, advantage of diesel over turbine propulsion was that the former had no danger from escaping steam, a major hazard in battle where steam units were involved.

Graf Spee recorded 28 knots on trials, but this steadily decreased during its wartime Atlantic cruise, due mainly to the accretion of barnacles and other marine growths. Langsdorff had no dry-dock, or even a beach where his ship could be taken out of the water to be given a proper careening. Performance was also adversely affected by the lack of overhauls and while some servicing could be carried out at sea, all maritime diesel engines need regular deep maintenance in dry-dock, including the replacement of worn components. As a result, by the time of the battle *Graf Spee*'s speed was no more than 22 knots at best, as was recorded by Commodore Harwood.

A factor that was to become of major importance in the events of 13–19 December 1939 was that of cooling. The diesel engines had a closed-circuit fresh-water cooling system, in which the coolant was used to remove the heat to a heat interchanger where salt water in the secondary coils conducted the heat away to the surrounding sea. This required seawater intakes (also known as 'seachests') and in merchant ships these were normally located aft, on the sides of the ship and several feet below the waterline. These seachests were holes in the hull which were protected by gratings to prevent ingesting large weeds or stones, although they were also notorious breeding grounds for zebra mussels, which progressively reduced the size of the gaps, thus impeding the water flow and reducing the efficiency of the engines. So, like the hull, they needed regular cleaning.

A further factor involving the cooling system was that the speed was affected by the ambient temperature of the seawater surrounding the ship. Thus, Rasenack records in his diary that on 10 September the external air temperature was over 29°C (84° F) resulting in warmer water entering the secondary coils of the cooling system, which in turn reduced the permissible speed from 26 to 21 knots.

The major problem, however, was that the seachests were located in the bottom of the hull, which was to be a significant factor in Langsdorff's decision when taking his ship into the Plate estuary. This was because he was concerned that if he tried to reach the Argentine port of Buenos Aires he would have had to cross some shallows, where mud could have been ingested, clogging the heat interchanger – a process which would have been accelerated due to the growths on the grates – and causing the engines to overheat and eventually come to a stop. Even if the hull did not actually touch the bottom, the narrower the gap the more the mud would have been stirred up.

One unwanted consequence of a sudden acceleration was a short-lived but very obvious plume of black smoke. This was a known problem and various solutions were tried, including a run at full power during the last full hour of darkness. Despite this, it was precisely such a plume that was first spotted by the British ships at 0610 hours on 13 December.

One of the most severe problems resulting from the diesel installation was that of vibration. The engines had deliberately been built to the lightest possible design and the outcome was

severe vibration which led to splitting in the engine mountings, and, at certain frequencies, acute discomfort throughout the ship. Worst of all, however, was the effect on optical equipment, which sometimes became unusable. Improvements were attempted in the *Scheer* and *Graf Spee* but the problem was never eliminated and Captain Dove, an independent witness, commented: 'The first night I spent aboard the *Graf Spee* the terrific vibration kept me awake until the morning … the *Graf Spee* vibrated more than any ship I have ever known.'[2]

Diesel versus steam-turbine was a major issue among German naval designers in the 1920s. The diesels were installed in these three ships for reasons of space-saving and availability in a ship designed to prevent hostile incursions into the Baltic in a war with France but, as that threat diminished and the range capability of the diesels became fully appreciated, the use of the ships in a distant-water commerce-raiding role took over.

However, the three *Panzerschiffe* proved to be both the first and the last large Kriegsmarine ships to be so powered and all following ships to be actually completed (i.e. *Scharnhorst, Gneisenau, Bismarck* and *Tirpitz*) were powered by high-pressure steam-turbines.[3] Nor did any other Second World War navy follow the German example of using diesels in such a large ship.

Notes

1. Hotel function is the power required to drive all systems other than those propelling the ship through the water; i.e. heating, lighting, electrical and electronic equipment, cooling, cookers, etc.
2. Dove, op cit., p. 66.
3. Several designs for new *Panzerschiffe* (P1-class) and battlecruisers (O-, P-, Q-classes) were prepared and all would have been diesel-powered. However, none of them was ever laid down.

CHAPTER 7

The Aircraft

Specifications (Arado Ar 196A-1)

Crew	Two – pilot (non-commissioned officer); observer (officer).
Dimensions	Length: 38ft 6in (11.7m); wingspan: 49ft 6in (15.1m), height 16ft 5in (5m).
Weight	Empty 6,580lb (2,980kg), maximum take-off 8,200lb (3,720kg).
Power plant	One BMW 132K nine-cylinder, air-cooled radial engine, rated at 820hp (611kW) at 3,280ft (1,000m).
Performance	Maximum speed: 193mph (312km/h); cruising speed 166mph (267km/h), range: 670nm (1,080km), service ceiling 22,965ft (7,000m); rate of climb: 980ft/min (300m/s).
Armament	One 7.92mm MG 15 machine gun (flexible mounting, 525 rounds); two 110lb (50kg) bombs.[1]

The unavailability of an aircraft to conduct a dawn reconnaissance on 13 December 1939 was of great significance and the reason for this needs to be examined in some detail. *Graf Spee* carried a shipboard flight of two reconnaissance aircraft, which should have provided a reliable and effective extension of the ship's command-and-control system. Despite some limited successes, however, it failed to do so and neither aircraft was available on the day of the Battle of the River Plate; had it been, it is just possible that the outcome might have been quite different.

The First World War commerce raider *Wolf (ii)* had carried a single reconnaissance aircraft, a Friedrichshafen FF-33e, which had proved extremely useful and was still operational when the ship returned to Germany after a 451-day deployment. This concept was carried forward to the Deutschland-class ships which, from mid-1934 onwards, were equipped with the Heinkel He-60, a single-engined, biplane floatplane. For her deployment to the South Atlantic, however, *Graf Spee* carried two of the very latest Arado Ar-196A-1 monoplane floatplanes; indeed, the actual aircraft carried by *Graf Spee* were not only the initial production version, but were the first two off the production line and delivered just in time to be loaded onto the *Graf Spee* before she sailed.

In the armed forces organisation built up in Nazi Germany, all air activities were the responsibility of the Luftwaffe, which included the development, procurement, operation and maintenance of all shipboard aircraft. There was no separate naval air arm and even the air wing aboard the never-to-be-completed aircraft carrier *Graf Zeppelin* would have been Luftwaffe-manned. In this case, the two aircraft aboard *Graf Spee* were operated by the Luftwaffe's *Bordfliegerstaffel 1/196* (Number 1 Flight of Number 196 Shipboard Flying Squadron). Once at sea, however, the flight came under the operational command of the commanding officer of *Graf Spee*. The two aircrew, both Luftwaffe personnel, were *Oberleutnant* (senior lieutenant) Detlef Spiering, who combined the roles of observer, aircraft commander and detachment commander, and *Fliegerunteroffizier* (sergeant) Heinrich Bongardts, the pilot.

The Arado Ar-196 was designed to meet a requirement for an aircraft for overwater reconnaissance, which would operate from ships or shore bases on the coast or the banks of rivers or lakes. In its shipboard role it could be launched by a catapult from warships but then had to land on water to be taken back aboard by crane. When deployed aboard auxiliary cruisers converted from merchant ships, however, there was no catapult, so it had to be hoisted onto the water for take-off as well.

The Ar-196 was a low-wing monoplane, powered by a single BMW 312K nine-cylinder radial

engine, which was enclosed in a tight-fitting cylindrical cowl. The first prototype flew in 1937 and two versions were tested, one with two floats mounted on underwing struts, the other with a single central float and two small stabilising floats under the wingtips. After prolonged trials the twin-float arrangement was deemed marginally better and selected for production, which started in 1939.

The version carried by *Graf Spee*, the Ar 196A-1, had a useful range and performance, and was armed with a single 7.92mm machine gun on a flexible mounting in the observer's cockpit. Two 50lb (110kg) bombs could be carried on underwing racks. Its primary task was reconnaissance, scouting for potential merchant ship targets and guiding *Graf Spee* towards them, or detecting approaching enemy warships and alerting *Graf Spee* to take evasive action. It could also be used to fire its machine gun or drop bombs in order to frighten a target into surrendering, or, more immediately, to cease radio transmissions. Finally, it could be employed in an engagement to observe fall-of-shot and send corrections to the *Graf Spee*'s fire-control centre.

The floats contained the fuel tanks, large smoke canisters, and storage bins for emergency rations and handheld flares. These bins were accessed when afloat by the observer climbing down from his cockpit, using the built-in steps on the forward struts.

Aboard *Graf Spee* the operational aircraft was stored on the catapult – there was no hangar – so there was no protection against the sea, weather, hostile fire, nor, indeed, the blast from *Graf Spee*'s own guns. The forty-six feet (14m) long catapult was mounted immediately abaft the funnel and could be trained to either beam. It was operated by compressed air, and its operation and maintenance, as well as that of the crane used to lift the aircraft out of the water, was a navy responsibility. The Ar-196 had manually folding wings and the second aircraft was stored in the deckhouse below the catapult, and, although theoretically available, during *Graf Spee*'s cruise it was only ever used as a source of spares.

In all of this, the German practice was little different from that of the British. Most Royal Navy cruisers of the 1930s carried a shipboard aircraft, which, like the Arado, was launched from a catapult and then landed on the sea to be recovered by a crane. The British aircraft of the time were the Supermarine Walrus amphibian and the Fairey Seafox floatplane and were operated by Royal Air Force personnel until 24 May 1939, when the Fleet Air Arm became an integral part of the Royal Navy.

The flight logbook for the Arado has not survived. The following entries list the significant flights, although there were many others.

- **30 August 1939.** Aircraft conducts practice bombing sortie.
- **11 September.** *Graf Spee* was replenishing from *Altmark* when the Arado was launched just after dawn. Thirty minutes later the observer spotted a ship on the horizon and immediately ordered the pilot to reverse course. Not wishing to compromise their position by using the radio, the aircraft flashed warnings by light signal to both German ships, which ceased replenishing, recovered the boats, and made off to the ESE. The aircraft had not been spotted, which was very fortunate for the Germans, as the ship they had seen was the British cruiser HMS *Cumberland* and the Arado had given the German ships just enough time to escape. This was a textbook use of the aircraft.
- **30 September.** The next flight of any importance took place on 30 September when the Arado overflew SS *Clement*, and sprayed her upper-works with machine-gun fire, inflicting several minor wounds. There was no particular reason for firing the machine gun and Spiering was subsequently told so, in no uncertain terms, by Langsdorff.
- **7 October.** The Arado carried out another flight in support of the capture and sinking of SS *Ashlea*. On returning to *Graf Spee*, however, the aircraft kicked up spray which hit the engine, which was hot after the extended flight, causing several cylinders to crack. It was exchanged with the reserve engine, which took five days.

• **21 October.** The Arado spotted *Trevanion* and guided *Graf Spee* to a successful interception. On return to the ship, however, the pilot had difficulty in landing and *Graf Spee* steamed in a circle to create a 'duck-pond'.
• **23 October.** The Arado spotted a ship, which was seen to turn away, but this may have been a coincidence as no radio message was heard.
• **8 November.** The Arado made a short flight but returned with engine problems.
• **1 December.** The Arado made a short test flight; all was in order.[2]
• **2 December.** The Arado made an early morning flight which went well and, having refuelled, it took off for a second flight at midday. It was already well into its mission when *Graf Spee* sighted a target in the opposite direction – *Doric Star* – closed with it, boarded it and eventually sank it at 1635. Meanwhile the Arado had failed to find *Graf Spee* at the end of its flight and the observer had been unable to send to or hear from *Graf Spee* because, as he discovered, the wireless battery was damaged and not giving full power. Now critically short of fuel, the pilot was forced to come down on the ocean at 1440 and, in doing so, damaged the port float which flooded, so that the aircraft lay with its port wing in the water. The crew were now in a perilous position and Spiering eventually transmitted using the emergency transmitter, but still failed to raise *Graf Spee*. It appeared unlikely that the aircraft would remain afloat until morning, so the two men broke out the emergency rations and had what they thought would be their last-ever supper, washed down by swigs of cognac, which, very fortunately, was also stored in the float. However, *Graf Spee* was proceeding at best speed to find the missing aircraft and, by good judgement, mixed with considerable luck, the ditched aircraft was eventually spotted dead ahead, the crew rescued and the aircraft hoisted aboard just as night fell.
• **12 December.** On return from a routine reconnaissance flight spray again hit engine, which was cracked beyond repair in situ and had to be dismounted to be taken to the workshop. The engine had not been replaced the following morning, as a result of which the Arado sat on the catapult throughout the battle and was totally destroyed.

The possibility of landing problems had been foreseen before the war and at the start of the voyage *Graf Spee* carried a Hein'sches landing sail.[3] This was a rectangular rubber mat which was boomed out from the side of the ship so that it trailed on the surface, rather like a matador's cape. It was then towed at considerable speed so that it calmed the waves, but this meant that the aircraft had to come down very close to the ship's side and then match its taxiing speed to that of the ship. The sail was quickly found to be totally useless and discarded.

There is no record of any attempt to remove the second aircraft from its hangar. However, there would have been little point as the only significant problem with the first aircraft was the engine, and this could be exchanged more easily than changing the complete aircraft.

Other ships also had problems with the Ar-196. The raider *Komet* carried one which was destroyed on landing at the end of its first operational flight (2 October 1940). Captain Weyher, commanding the most successful raider, *Orion*, said that his aircraft suffered from landing damages, and that taking off was frequently very hazardous and sometimes impossible. The problems were generally attributed to a high wing-loading, long take-off run to get airborne (for those ships lacking a catapult), and, in particular, too high a landing speed. Weyher's opinion was that the type was 'totally unsuited for operations on the high seas …'

Since the end of the Second World War there has been a constant flow of books on German wartime aircraft and, almost without exception, they report that the handling of the Ar-196 was excellent, both in the air and on the water, and that it was particularly popular with its crews. It is clear, however, that while these reports may have been generally correct for later versions, and, in particular, for those operating from coastal bases, the shipboard aircraft had serious problems in landing on the open ocean. The specific problem was that spray was kicked up by

the front ends of the floats and entered the open front of the engine cowling, which offered no protection. The spray then hit the engine-block, which was hot from several hours running, and caused it to cool so suddenly that the cast-iron crankcase split. This required the engine to be removed and taken to the workshop so that the crack could be welded up – and this happened three times.

There seem to be three possible explanations for this very important problem. The first is that the Arado's floats were designed for sea conditions in the North and Baltic Seas, and all the flight testing of the prototypes was done at the experimental station at Travemünde on the Baltic coast. However, both those seas are shallow and substantially enclosed, giving rise to a particular type of wave pattern. In contrast, the wave patterns encountered in the central and southern Atlantic – open ocean, far from land, and very deep – were quite different and it appears that the Arado's floats had difficulty in coping. Thus, it is possible that they may have been either too long or too short to fit in with the wavelength of the waves.

Secondly, although the cross-section of the bows of the two floats was scalloped in order to divert the spray sideways and away from the engine, this does not seem to have worked, especially at higher landing speeds. Finally, the pilot may have contributed to the problem, due to lack of experience, failure to understand the problem, poor landing techniques, or, perhaps, incompetence. The inescapable fact is that the Arado, which should have been as important an asset to *Graf Spee* as *Wölfchen* had been to *Wolf* in the First World War, was not. It was Langsdorff's practice to have the Arado make a short reconnaissance flight at dawn; had it been available to do so on 13 December 1939 the outcome might have been very different.

Notes

1. Later versions also had forward-firing machine guns, but these were not fitted in those aboard the *Graf Spee*.
2. Cracks in the cylinder block – the old problem – had been filled with a nonstandard substance, but seemed to be holding.
3. This device was also carried by the other Deutschland-class ships, as well as Blücher-class heavy cruisers. All discarded it in 1939–40.

CHAPTER 8

The Crew

Graf Spee's peacetime crew was thirty officers and 921 petty officers and ratings, for a total of 951. The ship was designed to be able to serve as a squadron flagship, so both working and living accommodation was available for an admiral and his staff of seventeen officers and eighty-five ratings. There was, however, no admiral on her wartime cruise, which enabled the crew to be considerably augmented and comprised fifty officers plus 1,084 others (1,134). Not quite all of these were still aboard on 13 December as *Oberbootsmannsmaat* Herbert Matzker had fallen overboard on 26 August 1939 and could not be found, while one officer (*Leutnant-zur-See* Smitt-Urquhart) and twelve sailors were transferred to the *Altmark* on 14 October to serve as guards for the prisoners.

The Crew

The crew was made up, as was to be expected, of a mass of enlisted men with an upper echelon of more experienced long-service senior petty officers. The ship ran efficiently, although the size of the crew was high; the British London-class and US Northampton-class cruisers, for example, were contemporaries of *Graf Spee* and much the same size, but had crews of only 700. Training was constant and there were frequent exercises to practise gun and torpedo crews, rangefinder operators, use of searchlights at night, damage control teams, and so on. As throughout the Third Reich, there was also a strong emphasis on physical training, and aboard *Graf Spee* both officers and men had an hour's PT every day.

Captain Dove was an interested and not unfriendly observer of the crew and had ample opportunity to see them both on and off duty. His main comments were on the extreme youth of the great majority and their inexperience. One example came while walking the decks with Langsdorff, when he was horrified to see a young German sailor coiling a rope the wrong way (i.e. left-handed). Dove commented on this and Langsdorff replied, 'Well you see, Captain,' he shrugged. 'This is all I have aboard here – bakers' boys and soldiers!'

As was common in most navies, each member of the crew had his own specialisation – gunner, seaman, chef, communicator, and so on. Each also belonged to a 'division', which was approximately 120 strong, with a hierarchy of officers and senior NCOs. These divisions were responsible for discipline, general training, sports and personnel administration.

The officers are listed at Annex B. Twelve of these had been midshipmen (*Fähnrich zur See*), who were aboard for sea-training when *Graf Spee* sailed in August 1939. All were commissioned at sea and moved into officers' accommodation, which, quite by chance, freed their flat for later occupation by captured British Merchant Navy prisoners.[1]

There was a small ship's band, headed by *Musikmeister* (Bandmaster) Kurt Kunz. In combat they served in the ammunition handling chain.

Five merchant marine officers were rushed aboard *Graf Spee* shortly before she sailed. They were experienced seamen chosen for their knowledge of the different waters in which *Graf Spee* was likely to operate. Their tasks were to advise Langsdorff on local conditions and to take over prizes; also, if Langsdorff so directed, to keep those prizes at sea in accordance with his orders. All ranked as *Leutnant (Sonderführer)*. They were:

- **Herzberg, Bruno.** Formerly chief officer aboard various Hamburg-Amerika Atlantic liners.[2] He spoke excellent English and always headed the boarding party. He was also in charge of the prisoners aboard *Graf Spee*.
- **Dittmann, Werner.** *Hamburg-Amerika Linie* (HAPAG)
- **Schünemann, Heinrich.** *Deutsche Ost-Afrika Linie* (German East Africa Line)
- **Sörensen, Paul.** *Hamburg-Amerika Linie* (HAPAG)
- **Ulpts, Gerhard.** *Hamburg Südamerikanische Dampfschifffahrts-Gesellschaft* (Hamburg-

South America Steamship Company)

In addition to *Graf Spee*'s normal communications team, the ship also carried a small group of men from the *Kriegsmarine Beobachtungsdienst* (naval radio monitoring service), known popularly as the *B-Dienst*. This service was responsible for interception of enemy communications and for breaking any codes encountered. These were civilian specialists employed by the *Kriegsmarine* and the head of the team gave rise to some misreporting by the British. This man was a German navy official (*Beamter*); i.e. a civil servant with a special status. When at sea this man wore a *Kriegsmarine* officer's uniform, but with silver (as opposed to brass) cap badge and buttons. Also, when he took part in boarding parties, he always wore a black leather naval jacket and white duck trousers, an unusual dress which caused Captain Dove to conclude that he must belong to the Gestapo[3] but this was a simple case of misunderstanding his role.

By all reports *Graf Spee* had excellent medical facilities. Medical staff were:

- **Kertzendorff, Frahnz.** *Marineoberstabsarzt* (Senior Naval Staff Surgeon)
- **Habel, Rolf.** *Marine Oberstabsarzt* (Senior Naval Staff Surgeon)
- **Härting, Friedrich.** *Marinestabsarzt* (Naval Staff Surgeon)

There were also full dental facilities, and the ship's dental officer, *Marine-stabsarzt (Zahnarzt*) (Naval Staff Surgeon) (dentist) Oskar Peerenboom, worked as an anaesthetist for the surgical team during the battle.

The two aircraft aboard *Graf Spee* were operated by *Bordfliegerstaffel 1/196* (Number 1 Flight of Number 196 Shipboard Flying Squadron), as explained in the previous chapter.

Civilians

In peacetime most major German warships carried a small laundry manned by Chinese, a similar arrangement to that operated by the Royal Navy. In the German case this was, presumably, a relic of the days when they had possessions in China, such as that at Tsingtau. Those territories were, however, lost in 1914, so how and where these men were recruited in the 1930s is not known. It was the practice that these laundrymen should be landed on the outbreak of war but this had proved impossible in the case of those aboard *Graf Spee*.[4]

Captain Dove reported that:

These Chinamen were not the only civilians aboard the *Graf Spee*; in fact, I sometimes thought the ship resembled a departmental store with its well equipped hairdressing saloons (sic) and revolving chairs, attendants in white coats, the bootmaker's, and tailoring departments complete with civilian staff. It even looked as if all the Hamburg restaurants had been deprived of their waiters and seen them transferred to the *Graf Spee*.
[5]

Morale

Langsdorff's relationship with the crew was excellent. He maintained his position as *der Kommandant* but was clearly able to communicate with them in an easy and relaxed manner. He gave regular briefings both to officers and to the crew.

The crew also had supreme confidence in their ship. Again, Captain Dove records Langsdorff's actual words on the subject: 'I command a very powerful ship' (Langsdorff told Dove)

a pocket-battleship, as you call it. I have great speed, powerful guns to fire on other warships or on aircraft. Ships of the British Navy which have guns which could sink me are not fast enough to catch

me, and the ships with the speed have not the guns heavy enough. You British have only three ships that can make it unhealthy for me, the *Repulse*, the *Renown* and the *Hood*. And how can these three ships hope to find me when I have every sea in the world as my hunting ground?

Dove added his own comments:

Spoken by Langsdorff with all the confidence of his own conviction that his ship was invincible, those words sounded ominously impressive. It was a view shared by every officer on board. No one to whom I ever talked in the *Graf Spee* at that time ever dreamed that their fast and powerful ship could be cornered, out-manoeuvred and put out of action.

Notes

1. Dove, op cit., p. 100.
2. The *Hamburg Amerikanische Packetfahrt Aktien Gesellschaft* (= Hamburg American Packet-shipping Joint Stock Company), was usually known as HAPAG or in English as Hamburg America Line.
3. Dove, op cit., p. 32.
4. 'He [Langsdorff] explained that before the war started all German warships carried a complete Chinese laundry. In the case of the *Graf Spee*, he said, his laundrymen were on board and at sea when the war broke out, and he was unable to land them.' Dove, op cit., p. 93.
5. Dove, op cit., p. 93.

CHAPTER 9

Communications, Command and Control

Communications

Graf Spee carried a particularly comprehensive radio fit, and all the links seem to have worked satisfactorily, as no complaints are recorded in any of the surviving logs or memoirs. The primary link was to and from the *Seekriegsleitung* (Maritime Warfare Command [SKL]) in Germany, and, considering the distances involved and the unreliable nature of communications in those days, this seems to have worked very well. The SKL regularly passed intelligence reports from sources in South American ports, and Langsdorff sent messages successfully back to Berlin, although he kept his transmissions to the minimum in order to prevent interception and direction-finding by the British.

There were no co-operating German warships in the area but communications were required to and from the *Altmark*, both at long range to arrange meetings and at short range when replenishment was taking place. Again, these seem to have worked well.

A radio link was established to the Arado aircraft whenever it was airborne, although this did not work on some occasions because the aircraft was either too far away or too low. On 11 September, when *Graf Spee* was being replenished from *Altmark*, the aircraft spotted a hostile warship (it was, in fact, HMS *Cumberland*, a heavy cruiser) but the crew, quite correctly and despite the immediacy of the threat, chose to fly back until they were able to pass the information by signalling lamp, whereupon the two German ships separated and headed away at top speed.[1] Also, on one occasion communications failed because the radio battery in the aircraft was not working.

Communications were also required to the merchant ships under attack, ordering them to stop and to cease all radio transmissions of their own. Such communications from *Graf Spee* were usually initially by radio, using international maritime frequencies, but more often the ranges were so short that signalling lights or flags could be used, and there was even a noticeboard on the front of the bridge tower. The ultimate signal was a shot across the bows, or, in extreme cases, into the general location of the radio room.

Despite the excellence of their own equipment *Graf Spee* communicators took a Marconi transmitter from *Newton Beach* which was then used to monitor commercial frequencies, and was also used as a rudimentary jammer.[2]

Electronic Warfare

In addition to her normal communications team *Graf Spee* also carried a team of intercept and decoding specialists from the *Funkbeobachtungsdienst* (Naval Radio Monitoring Service; usually abbreviated as the *B-Dienst*). The chief of this team was always one of the first to board captured victims in order to collect all codebooks, message logs and any other classified documents. This *B-Dienst* detachment was able to intercept and decode many British Royal Navy and merchant ship transmissions and also had some success in using DF (direction-finding) techniques to give an approximate location of the transmitter.

Graf Spee's own communications security was excellent, observing radio silence except when absolutely vital, and even then transmissions were kept short and power to a minimum. The British admitted afterwards that they gained virtually nothing from electronic surveillance, direction-finding, or cryptanalysis, and while they knew that a raider was at large in the Atlantic and that it was almost certainly a 'pocket battleship', they had no idea of its identity. According to the British Official History, 'the first we knew the ship was the *Graf Spee* was from an intercept of a United States' civil broadcast as she entered Montevideo harbour. Before that she was thought to be the *Scheer*.'[3]

Optical Sensors

Graf Spee was fitted with a variety of optical and electronic sensors, of which the most important were the rangefinders, all built by Zeiss of Jena. The four largest were 10.5m (34.5 feet) devices, one in a special cupola at the head of the tower, one each built into the roofs of Turrets Anton and Bruno, and one atop the after control centre. Atop the forward command centre was a 23-feet (7m) rangefinder for the medium armament, and there were two more, both of 9.8 feet (3m) for the anti-aircraft guns, one on the battlemast, the other aft.

All these rangefinders used the stereoscopic principle in which a mark was centred on the midships of the target. This system was good at finding the initial range, as Commodore Harwood's force found to their cost, but was less good at the subsequent tracking of the target. The most important was the tower-head rangefinder, whose height gave it the maximum possible range, while the 10.5m base conferred a remarkable degree of accuracy. The best known achievement was when the *Doric Star* was spotted at a range of thirty-three miles (53km). The ever-observant Captain Dove noted that:

Every day as I walked around the deck my eye kept catching the lookout turret at the top of the control tower. I nicknamed it, 'the eyes and ears of the world', and Captain Langsdorff told me that with the powerful lenses fitted there he could sweep an area thirty miles distant on every side of him.

The German navy had devoted much research in the inter-war years to improving the performance of both rangefinders and operators. All lenses and mirrors were 'bluecoated' to improve the image and the whole device was stabilised. Research was carried out on the colour and brightness of the measuring marks to minimise their effect on the operator. Finally, the operator himself was studied, as a result of which the men were carefully selected and given thorough training ashore, following which they were given both daily practice and psychological counselling once at sea. One of the most important problems for the operators, however, was vibration, which was both natural from the hull, and machine-made from the diesels and propellers.

Radar

Graf Spee was one of the first seagoing warships in any navy to be fitted with a radar, which was installed in great secrecy during the ship's 1938 minor refit. The apparatus was mounted in the foretop cupola together with the 10.5m optical rangefinder, while the antenna array was mounted centrally at the front.

The antenna was rectangular in shape, measuring 4ft 7in × 9ft 6in (2.9m × 1.4m) and because of its shape was christened by the German sailors *die Matratze* (mattress). The radar was highly classified and, prior to the outbreak of war, whenever *Graf Spee* was in port or near foreign ships the antenna was covered by a sailcloth cover. The actual set was designated FMG 39G(gO) – see table over.

The most important components of the radar were the valves (tubes) which suffered from both electrical and mechanical problems, in the latter case from the vibrations referred to above. On 3 October the radar developed a fault and it was then discovered that the equipment was so highly classified that no plans, servicing manuals or even circuit diagrams had been allowed aboard. After several days of frustration, *Graf Spee*'s communications crew chief, *Oberfunk-meister* (senior communications master) Fröhlich, was ordered by Langsdorff to attempt the repair and, working from first principles and using his skill and training to the full, he eventually found the fault and fixed it on 9 October.

***Graf Spee*'s *Funkmessgerät* (= radar equipment)**

Type	FMG 39G (gO)	'39' = year of introduction into service (1939), 'G' = manufacturer (GEMA), 'g' = operating frequency (in this case

		335–439MHz), 'O' = antenna installation (in this case, shipboard, atop the rangefinder tower).
Manufacturer	GEMA	= Gesellschaft fur Elektroakustische und Mechanische Apparate.
Operating frequency	Approximately 368MHz	
Pulse repetition frequency	500c/s	
Range	Ca 15km (9 miles)	
Range accuracy	+/– 70m	
Rotation rate	180 degrees per minute	
Beam width	15°	

The basic role of the radar was for gunnery rangefinding. On this cruise, however, it proved to be more important in night-time and poor weather surveillance, when the performance of the optical rangefinder was very limited.

Searchlights

In common with most warships of the era, *Graf Spee* was equipped with large, powerful searchlights as part of an integrated night fighting capability. The lenses were 5.25 feet (160cm) in diameter and mounted on tri-axially-stabilised mounts. They were remotely controlled from directors on the bridge. There were originally six, four on a platform surrounding the funnel and two on small platforms either side of the tower. In the 1939 mini-refit the latter two were removed and replaced by a single searchlight mounted on the front of the tower. These searchlights were quite separate from signalling lamps. Periodic night exercises were carried out, but there is no record of a night engagement in which they were actually used.

Command and Control

The overall command-and-control arrangements were similar to those in any major warship. The action station for the captain and his command team was in the armoured *Kommandostand* (conning tower) just forward of and one deck below the bridge. The second-in-command was in the after command centre, situated on the upper deck between Turret Bruno and the funnel, where he organised and controlled the damage control arrangements, but his main task was to stand by to take over from the commanding officer should the latter be killed or seriously wounded.

As will be shown, this arrangement did not suit Langsdorff during the battle, because the British forces were split and the conning tower's display resources of the time could not give him a visual picture of what was going on, and matters were little better from the navigation bridge. As a result, he positioned himself in the fighting top, which gave excellent visibility, but was protected only by chest-high thin plate without any overhead cover, with disastrous results.

Notes

1. Bidlingmeier, op cit., p. 39. *Cumberland* was totally unaware of either the aircraft or the two German ships.
2. See Bidlingmeier, op cit., p. 90.
3. *British Intelligence in the Second World War: v. 1: Its Influence on Strategy and Operations* (*History of the Second World War*). Volume 1. Hinsley, F. H.; HMSO, London. ISBN 0116309334. p. 105.

CHAPTER 10

Replenishment at Sea

Virtually all narratives of *Graf Spee*'s commerce-raiding voyage concentrate on the design and achievements of the warship while the accompanying supply ship is relegated to a minor role and infrequent mention. In reality, *Altmark* was vital to the enterprise and, while appearing at first sight to be a typical 1930s tanker, its design was far more revolutionary and its influence on naval strategy and tactics much more marked than that of the 'pocket battleship'. Indeed, the influence of the *Altmark* design continues to be felt to this day.

Up to the end of the First World War the German Navy had concentrated its efforts on warfare in the Baltic, the North Sea and Western Atlantic, the operational areas of its two main opponents, Britain and France, as described in Part One. However, one of the lessons of that war seemed to be that surface operations further afield could be potentially valuable, albeit with two practical problems. The first was that any ships involved would have to start and end their voyages from ports in Germany, thus requiring outward and homeward passages north around the British Isles. The possibility of operating out of captured bases on the French Atlantic coast, as actually happened, was never even considered. The second was that, once in the open ocean, the warships would need resupply, but Germany's few colonial possessions had been removed during the First World War and while in any future war there would be many neutral nations, few, if any, were likely to be so sympathetic to Germany as to resist British, French or American pressure to act as a dependable source of supply.

This left two possibilities. The first was that, in accordance with international conventions, the warship could call at neutral ports to take on fuel and non-offensive supplies such as water, provisions and, perhaps, lubricating oils. But, of course, this would mean that the German ship's precise position could be signalled to every Allied warship in the area. The only alternative was that these supplies could be brought to the warship at sea, but this was not without its difficulties. In the days of coal-fired boilers, colliers were used in such operations, but, at best, the two ships had to come alongside each other, so that cranes could be used to lift the coal from the collier's hold and lower it into an access chute to the warship's bunker. At worst, the operation had to be done by men carrying sacks. In both cases either calm water or a sheltered anchorage were required.

The international rules were laid down in the 1907 Hague Convention.[1] These were of importance to replenishment in general, but were to become crucial in the saga which ensued in Montevideo.

Article 18 banned certain activities: 'Belligerent warships may not make use of neutral ports, roadsteads, or territorial waters for replenishing or increasing their supplies of war material or their armament, or for completing their crews.'

Article 19 covered what was permissible: 'Belligerent warships may only revictual in neutral ports or roadsteads to bring up their supplies to the peace standard. Similarly these vessels may only ship sufficient fuel to enable them to reach the nearest port in their own country. They may, on the other hand, fill up their bunkers built to carry fuel, when in neutral countries which have adopted this method of determining the amount of fuel to be supplied. If, in accordance with the law of the neutral Power, the ships are not supplied with coal within twenty-four hours of their arrival, the permissible duration of their stay is extended by twenty-four hours.'

Article 20 imposed a further limitation: 'Belligerent warships which have shipped fuel in a port belonging to a neutral Power may not within the succeeding three months replenish their supply in a port of the same Power.'

Dithmarschen-Class

Thus, for raider warfare to work, the Germans needed a new answer. The first German

replenishment-at-sea (RAS) trials took place in the late 1920s, when a civilian tanker, *Hansa*, was chartered from the recently-established *Atlantik Tank Reederei* (Atlantic Tanker Shipping Company). More ambitious trials took place during the annual fleet exercises in 1934 and 1935 which led to the finalisation of plans for a new type of ship, for which a new term was devised, *Trosschiff* (supply ship).[2] This design was many years ahead of similar ships in any other navy and was the direct ancestor of the modern 'one-stop replenishment ship'. In effect, it combined the then separate functions of oiler, ammunition ship and stores ship, thus enabling warships to undertake long voyages without the need either to call in at a port, or to be trailed by a number of ships. Of course, it was not all advantage, and as *Altmark* was the sole means of resupplying *Graf Spee*, its loss during the latter's Atlantic voyage would have been an unmitigated disaster.

The five completed ships of the Dithmarschen-Class

Name	In service date	Fate
Dithmarschen	June 1938	To US Navy 1946 as USNS *Conecoh*. Scrapped 1960.
Altmark	November 1938	Renamed *Uckermark* September 1940. Destroyed by explosion, Japan, November 1942.
Nordmark	January 1939	To RN 1946 as HMS *Bulawayo*. Scrapped 1955.
Ermland	September 1940	Sunk by bomb September 1943.
Franken	March 1943	Sunk by bomb April 1945.

The original plan was to build nine ships of the Dithmarschen-class, but in the event only six were laid down, of which one was never completed (see table above). Only two survived the war and both were immediately taken into service by the Royal and US Navies, where they had a significant influence on their future designs.

Dithmarschen-Class – Main design specifications[3]

Dimensions	Displacement, full load	20,528 tons (20,858 tonnes)
	Length (Overall)	584.8ft (178.25m)
	Beam	72.2ft (22.0m)
	Draft at full load	30.5ft (9.30m)
Capacity	Liquids	11,810 tons (12,000 tonnes)
	Dry goods	3,937 tons (4,000 tonnes)
	Fresh water	2,214 tons (2,500 tonnes)
Crew		133
Weapons	20mm Flak	4 (only 2 in Altmark)
	37mm Flak	2 (none in Altmark)
	Machine guns	8
Propulsion	Shafts	2
	Engines	4
	Type	MAN 9-cylinder diesel
	Power	21,400shp total
Performance	Speed	21.1 knots
	Range	5,000nm at 14kn
		12,500nm at 15kt

The Dithmarschen-class supply ships were designed to spend up to six months at sea in order to replenish warships engaged on long-range operations. To achieve this they carried fuel, lubricating oil, aviation fuel, ammunition, fuzes, explosives, spare torpedoes, refrigerated provisions, general stores, and water, both distilled and fresh. In the event, *Altmark* was also required to accommodate prisoners taken by the *Graf Spee*.

From a distance these looked like contemporary tankers, with the bridge structure amidships,

stack and superstructure aft and long well-decks. They had large tanks for the various types of liquids taking up about one-third of the centre of the hull, with five levels of storerooms at either end of the tanks. These storerooms were linked by vertical ladders and, more importantly, by lifts. At the forward end of the ship were five levels of refrigerated spaces. The engine room, crew accommodation and further storerooms were right aft.

Transferring the supplies from below decks to the weather deck and thence to *Graf Spee* at sea was a challenge. For the liquids, pipes led from the tanks to connectors on the upper deck from where the liquid was passed through a hose direct to the receiving ship's bunkers. Moving solid stores was more difficult, but the task was eased by overhead travelling rails in each hold, which enabled the stores to be transferred to an elevator with a floor area approximately 12ft × 6ft (3.6m × 1.8m) which was raised and lowered by steam-powered winches. Electric-powered cranes lifted stores from *Altmark*'s deck to the motorboats.

The composition of the loadouts for these ships depended upon the type of ship to be resupplied as well as the nature and predicted duration of the mission, but typically comprised:

***Altmark* – Typical outload**

Commodity[4]	**Weight (tons (tonnes))**	**%**
Fuel oil	9,773 tons (9,930)	82.5
Lubricants	377 tons (383)	3.2
Munitions	326 tons (332)	2.8
Provisions[5]	386 tons (393)	3.3
Water, distilled	492 tons (500)	4.1
Water, drinking	116 tons (118)	1.0
Water, fresh	375 tons (381)	3.1
Total	11,845 tons (12,037)	100

Having arrived at their mid-ocean rendezvous the two ships closed on each other and then proceeded in line head, at a speed of 5 knots, *Altmark* always in the lead, with *Graf Spee* approximately one cable (240 yards or 220m) astern. *Altmark* then dropped a spherical glass float into the water carrying a thin line. One of *Graf Spee*'s motorboats, which was already waiting, caught the buoy and attached it to a heaving line. At this stage an officer was standing in *Graf Spee*'s bows passing directions to the bridge by telephone, since the float and motorboat were hidden from view of those on the bridge. The motorboat crew then threw the heaving line to a party waiting on the forecastle, who hauled in the float line to which was attached a thin manila rope which was, in its turn, attached to a thicker towing cable from which two hoses were suspended by stirrups: an eight-inch (20cm) diameter hose for fuel and a narrower hose for water.[6] Both hoses were tightly capped and pressurised with air, which ensured that they floated and kept any sea-water out.

Once the ends of the hoses had been opened secured replenishment began. The fuel was pre-heated in *Altmark* to ensure a faster flow-rate, but even so the operation took many hours. There were rapid-release arrangements at both ends to enable either party to disengage in the event of an enemy ship or aircraft appearing. If sea conditions were suitably calm, Langsdorff sometimes ordered an increase in speed of the two ships up to a maximum of 12 knots. All signals between the ships were by flag by day and light by night so that radio signals could not be intercepted by the enemy.[7]

Verkehrsboot (Picket boat)

Verkehrsboot – Specifications

Dimensions	Length	37.8ft (11.52 metres)
	Beam	10.2ft (3.10 metres)
Speed (maximum)		8.2 knots
Carrying capacity	Moderate conditions	14,054lb (6,375kg)

	Calm	18,298lb (8,300kg)
Passengers		85

Transfer of all other supplies was made by picket boats (*Verkehrsboote*). These boats had a large open well, but, even so, capacity was limited, often by shape as much as by weight. The supplies were assembled on *Altmark*'s deck, then lowered to the waiting motorboat by crane, with the process repeated in reverse at the *Graf Spee*. Once aboard the warship the supplies had to be manhandled to the appropriate stowage place. The process was very labour intensive and time-consuming, took many hours and sometimes had to be continued in darkness.

Captain Dove remarked of the replenishment on 26 November that 'the weather was calm, and the sea perfectly smooth, so there was no reason why the *Altmark* could not have come alongside to port where my cabin is'. This may have been because the drills were so rigid that no thought was given to taking the easier and speedier option. However, it may also have been due to tactical considerations in that it was preferable to have at least some way on both ships and it would be easier for them to disengage in the event that an enemy warship appeared.

Graf Spee and *Altmark* found each other using the excellent German 'grid system' and neither ever failed to keep a rendezvous. These meetings took place: (1) 1 September; (2) 11 September; (3) 20 September; (4) 25 September; (5) 4 October; (6) 15 October; (7) 28 October; (8) 26 November; (9) 6 December. Each meeting involved a transfer of fuel and supplies to *Graf Spee*, and the later ones also involved a transfer of prisoners in the opposite direction.

It appears that *Altmark* had sufficient of most commodities for the voyage, but a particular crisis arose over carbonic acid, which became a frequent and urgent topic in signals from *Graf Spee* to Berlin, as a result of which urgent action was taken to replenish their stocks. This is described in more detail below.

The normal crew of the *Altmark* was 133 officers and men, but this was later supplemented by an armed detachment from *Graf Spee*, which was responsible for guarding the prisoners. *Altmark*'s captain (*Kommandant*) was Heinrich Dau, a very experienced seafarer. Dau was born in 1874 and joined the Imperial Navy in October 1898. He served throughout the First World War as a deck officer, his posts including watchkeeper and navigation officer aboard the battleships *Friedrich der Grosse* and *Schlesien*. He was one of many such officers to be discharged in 1919 in the reductions forced by the Versailles Treaty and joined the merchant service, first with the Norddeutscher Lloyd line, then the Hugo Stinnes Line, which, in 1927, was absorbed by the Hamburg-Amerika Line. In 1933 Dau was given command of the Hamburg-Amerika liner *Deutschland*[8] but retired in compliance with company policy in 1934 at age sixty. He was, thus, thoroughly familiar with the routes between Germany and north and central America. He then appears to have obtained employment with the *Kriegsmarine*, as captain of auxiliaries, culminating in the *Altmark*. The British prisoners aboard *Altmark* believed that Dau had been a prisoner-of-war in England during the First World War where his experiences had turned him against the British, but this cannot be substantiated.

Dau's principal officers were: First Officer Paulsen; Chief Engineer Schleusner, Supply Officer Wegener, and Medical Officer, Dr Inrolt. The latter was an energetic man and a good doctor, and was much respected by both crew and prisoners.

As built, the Dithmarschen-class was capable of mounting two 37mm antiaircraft guns, four 20mm cannon and a number of machine guns. However, *Altmark* sailed from Germany without any deck-mounted weapons, which would have created problems during her visit to Port Arthur. Razenack reports having transferred two 20mm cannon to *Altmark* during the first meeting on 1 September and when the guard party transferred to *Altmark* on 14 October, they would have carried their personal weapons plus one or two machine guns. Several British prisoners reported catching glimpses of a tarpaulin-covered object which they were sure was a

gun of 'about 4-inch caliber' but none was ever positively seen and German sources are adamant that nothing heavier than 20mm was ever mounted by *Altmark*.

Altmark had only one major 'near miss' when, on 9 October 1939, the aircraft carrier *Ark Royal* was on passage from the UK to Freetown; she had no escorting destroyers but flew off aircraft on routine patrols. One of her aircraft surprised a tanker off the Cape Verde Islands, which was lying stopped with some members of the crew either sunbathing or fishing. The ship managed to convince the aircrew that it was the US tanker SS *Delmar*, but there appear to have been some doubts as the aircrew were questioned by the captain on their return to the carrier. It was decided not to close the tanker as the carrier had no destroyer escorts. Even so, a further reconnaissance aircraft was despatched, but it was late and failed to find the suspect tanker in the darkness. It was, in fact, the *Altmark*, which had a very fortunate escape. Had she been identified and sunk the position of the *Graf Spee* would have been untenable.[9]

There is no doubt that *Altmark* was an excellent design and that Dau showed exceptional skill. Without the supply ship *Graf Spee* could not have carried out such a long voyage so far from base, and her loss would almost certainly have prevented Langsdorff from returning to Germany, leaving him the unpalatable alternatives of seeking internment in a neutral port or scuttling. As it was, Dau kept his ship well clear of possible Allied shipping routes and kept every rendezvous with *Graf Spee*. The only criticism of *Altmark* is that the actual replenishment process was exceptionally slow and laborious, and it is surprising that the Germans, having come up with this brilliant concept, did not take it a stage further to develop side-by-side underway replenishment as did the US Navy only a year or so later.

Carbonic Acid

In general, *Graf Spee* and *Altmark* between them seem to have carried all that was necessary for their lengthy cruise, but there was one item that was quickly found to be in short supply and then featured with increasing frequency in Langsdorff's communications with SKL. This was carbonic acid, a substance which today is of limited importance, but at that time was critical to *Graf Spee*'s refrigeration system.

It was vital to maintain the ship's magazines at a uniform and low temperature for three reasons. First, to ensure performance of the propellant that was both constant and predictable. Thus, by maintaining a uniform temperature in the magazine, ballistic computations in the Fire Control Centre were simplified, which in turn reduced the dispersion of salvoes fired from different magazines, all of which resulted in greater accuracy. Secondly, the refrigeration system prevented 'outgassing'; i.e. the slow but significant escape of gas from solids and solvents, in this case, the propellants. Finally, the lower the temperature in the magazine, the greater the thermal energy required to initiate combustion, thus enhancing safety in the ship. Indeed, the fate of the *Karlsrühe* in the First World War (see page 7) illustrated only too clearly what could go wrong.

Carbonic acid (chemical formula H_2CO_3; German = Kohlensäure) is a weak acid formed when carbon dioxide is dissolved in water, usually by compression. It came into use as a marine refrigerant in the last decade of the nineteenth century, where brine grids on the walls of a refrigerated space, such as a hold or magazine, were used to produce low and exceptionally even temperatures. It had further advantages in that a leak was much less serious than in shore-based systems which used ammonia. It also made economic use of space.

For reasons now not known, it is clear that the requirement for carbonic acid aboard *Graf Spee* was seriously underestimated and that not only were the stocks aboard the *Panzerschiff* inadequate, but that there were also insufficient reserves aboard *Altmark*. Langsdorff communicated his concerns to Berlin on 26 September; indeed, he told them that the situation was so acute that he could not venture farther north than 5 degrees South. SKL took urgent action and two German-flagged merchant ships were tasked with carrying a supply to *Graf*

Spee as rapidly as possible.

First, *Emmy Friedrich* (4,372 tons), an old tanker, sailed from Tampico, a port on the Mexican Gulf coast, on 15 October, carrying diesel fuel, rations, water and the all-important carbonic acid. Not surprisingly, the Americans knew all about the cargo and provisionally tasked Neutrality Patrol assets, the carrier *Ranger* (CV-4) and heavy cruiser *San Francisco* (CA-38), to locate and then, if necessary, to trail the ship. In the event, US action was not necessary as the British cruiser *Orion* and Canadian destroyer *Saguenac* located the *Emmy Friedrich* whilst it passed through the Yucatan Channel and the German ship was then intercepted by another British cruiser, *Caradoc*, and fled, but when capture became inevitable it was scuttled by her crew.

The other attempt was made by the motor-ship *Dresden*, which sailed from Coquimbo, Chile, on 19 October, carrying provisions, carbonic acid, oil, etc. It was ordered to go to a position 30° S, 30° W and then wait for *Graf Spee*. It was a rendezvous that the *Panzerschiff* was never to keep.

Unfortunately for Langsdorff *Doric Star*, captured on 2 December, had large refrigerated spaces which would have required carbonic acid, but he had to rush her sinking to go to the rescue of the crew of the ditched Arado and thought that the only cargo carried was wool. The following day, however, *Tairoa* yielded no less than eighteen barrels, which must have been sufficient to last until the Battle of the River Plate.

Notes

1. Laws of War: Rights and Duties of Neutral Powers in Naval War (Hague XIII); October 18, 1907. XIII. CONVENTION CONCERNING THE RIGHTS AND DUTIES OF NEUTRAL POWERS IN NAVAL WAR. Source. http://avalon.law.yale.edu/20th_century/hague13.asp.
2. The word *Tross* is almost untranslatable into English. The term *der Tross* originated with the fifteenth century Landsknecht armies in central Europe and was the collective term used to describe the baggage train of camp followers, supplies, food and so on. For the purposes of this book it will be translated as 'supply ship'.
3. Source.http://motortankschiff-altmark.com/motortankschiff%20altmark001.htm.
4. She is also said to have carried clothing and spare parts but this cannot be confirmed.
5. Provisions included fruit, vegetables, meat, bacon, sausages, butter, margarine, lard, preserves, flour, spices and cheese. Other items included tobacco, general canteen goods, beer and spirits.
6. Some reports suggest that the fuel hose was not suspended from the towing cable, but was kept afloat by a series of kapok lifejackets.
7. Rasenack, op cit., p. 44.
8. *New York Times*, 30 June 1933.
9. Curiously, although this incident is well documented in British sources, it is not mentioned by Captain Dau in either his log or in his book *Unentdeckt über die Meere*'.

CHAPTER 11

Summary

As with any warship captain, Langsdorff had to accept and make the best of the ship he was given to command, complete with all its advantages and shortcomings. *Graf Spee* was, essentially, a fourteen-year-old design, which, when first unveiled in the late 1920s, had received very positive reactions, both inside Germany and internationally. Once in commission all three ships, *Deutschland, Admiral Scheer* and *Admiral Graf Spee*, formed the core of the German contribution to the international Spanish Neutrality Patrol, and they called at British ports, such as Gibraltar. *Graf Spee* herself took part in King George VI's Coronation Review at Spithead in 1937.

The 10,000-ton limit laid down by the victorious Allies was common knowledge and naval experts realised that the German designers had stretched the restrictions to the very limit – although it was not until after the war that they realised just how far they had actually exceeded them.

The Germans repeated the mantra 'Faster than anything that outguns us; outguns anyone that can catch us' so often that they came to believe it themselves. But this phrase overlooked one vital fact–that it was based on a one-on-one meeting. Thus, there can be little doubt that had *Graf Spee* met just *Exeter*, without the other two cruisers being present, and had the British ship elected to come within range, then the Germans would, although nothing can be certain, probably have triumphed.

Major warships will remain in front-line service for many years or more and with a mid-life refit can remain effective for twenty-five or more years. The British battleship *Warspite*, for example, was completed in 1915, totally rebuilt in 1935–36 and finally paid-off for scrapping in 1946, a service of thirty-one years.

Graf Spee was undoubtedly a capable warship, which had the reputation of being an extremely clever attempt for the German navy to obtain the most powerful possible ship within the very tight restrictions laid down in the Versailles Treaty. But all warship designs are the outcome of a series of compromises, the most obvious in capital ships being protection, armament and speed. There were, however, many other limitations, such as capital expense, mix of weaponry, size of docks, and so on. If canals were to be used, then the appropriate limits of beam, draught and, in some cases height as well, had to be factored into the design. US Iowa-class battleships, for example, had a beam of 109 feet (33m) which gave them a clearance of just 6 inches (15cm) in the Panama Canal locks, while German ships had a maximum height of 131 feet (40m) in order to pass under the bridges across the Kiel Canal.[1]

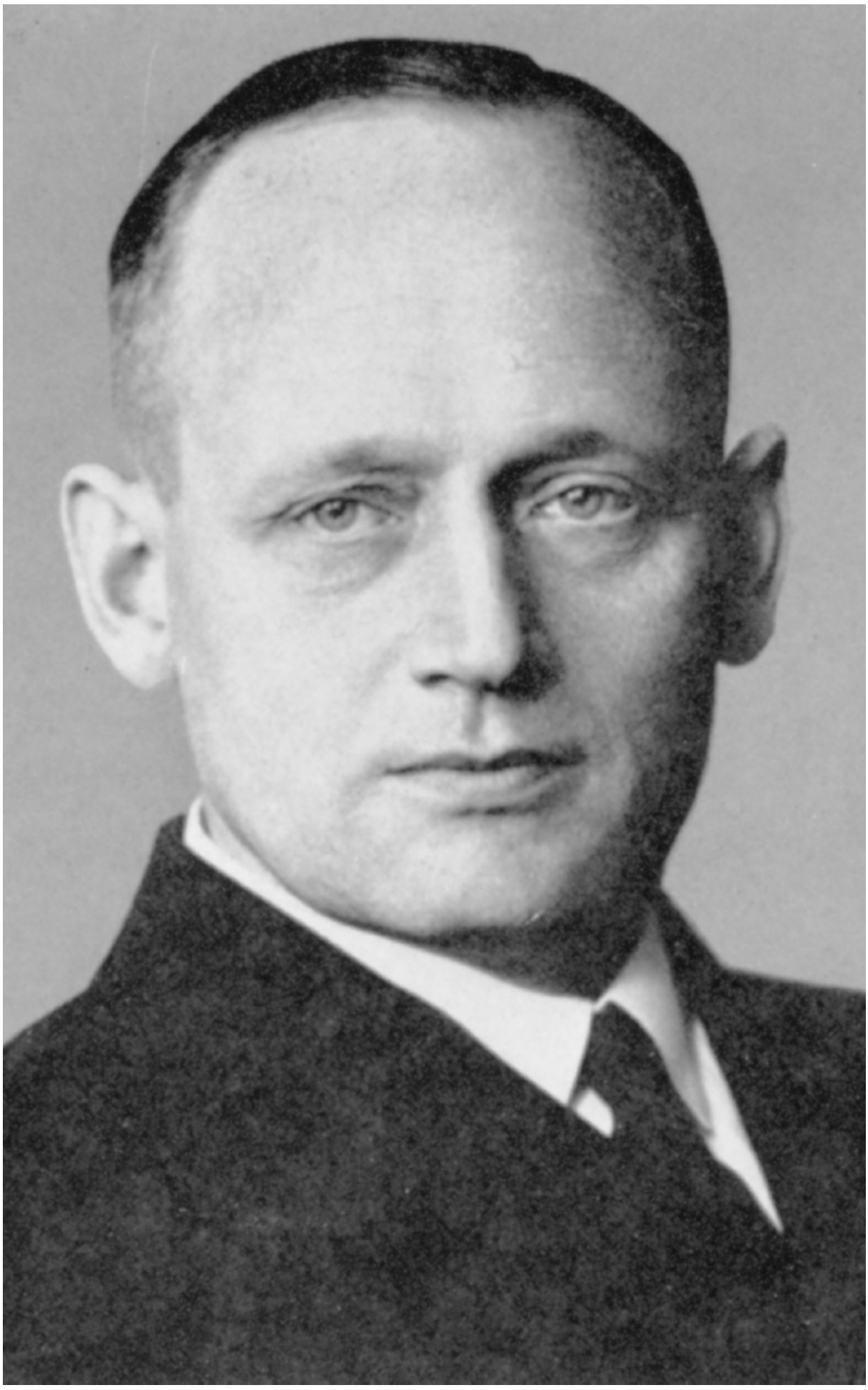
In the case of these German ships, the designers were limited to a displacement of 10,000 tons (although, in the event, they exceeded this by a fairly wide margin – by 2,340 tons in the case of *Graf Spee*). Somewhat surprisingly, however, the Versailles Treaty did not specify the maximum calibre of guns for the new ships, and the German Navy opted for 28cm (11-inch). This was, in part, due to the fact that there was already such a calibre in service. There were two other factors. First, it was the very largest calibre that could be accommodated in a 10,000-ton hull. Secondly, as a German naval officer told a British naval officer, 'twenty-eight centimetres was the largest calibre we thought we could get away with without criticism from the Armistice Commission'. This choice not only limited the total number of tubes – six in two turrets – but also dictated the amount of below-decks space devoted to magazines and, by no means unimportant in the aftermath of the Battle of the River Plate, the total number of rounds that could be carried.

In essence, the Deutschland-class was essentially a 'one-off' – a product of the restrictions imposed by the Versailles Treaty, combined with the German desire to squeeze the absolute

maximum into a relatively small hull.

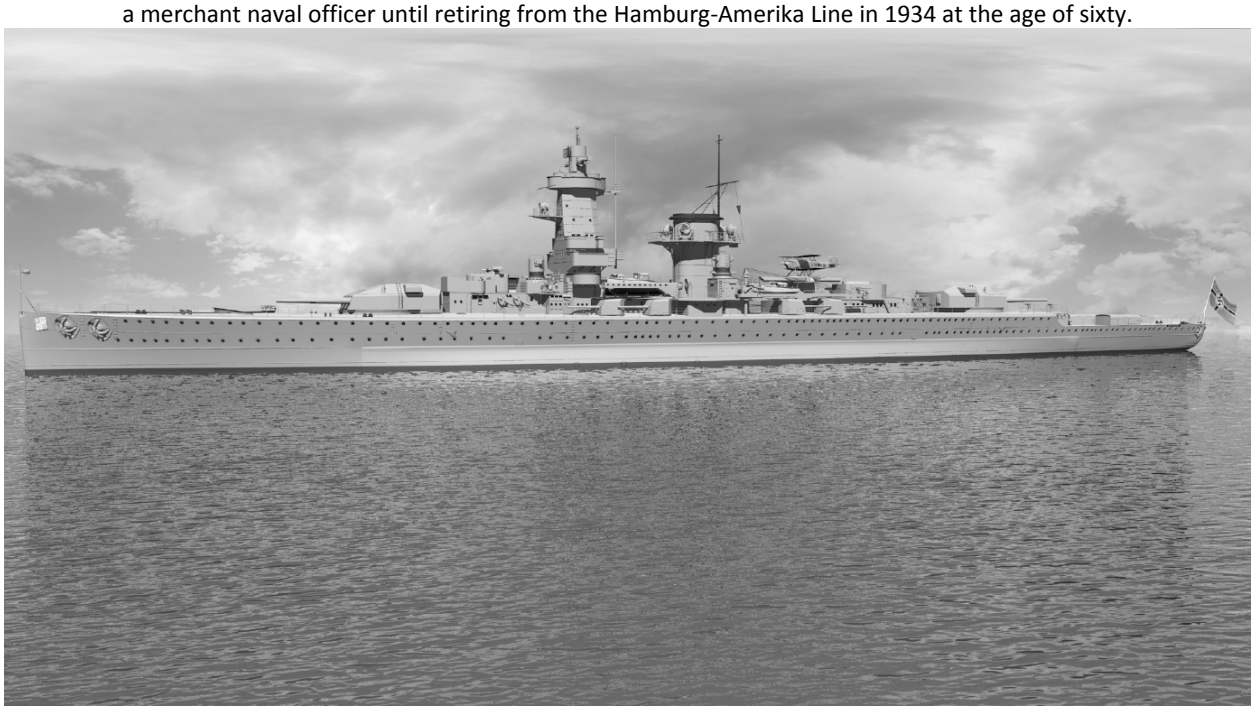
Note

1. Even *Bismarck* and *Tirpitz* battleships were able to transit the Kiel Canal.

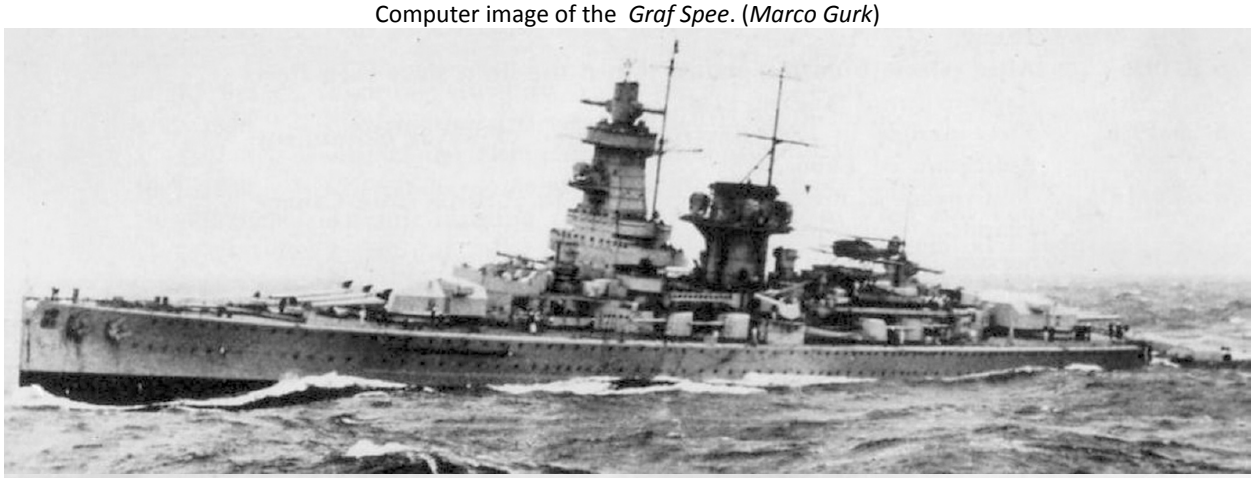


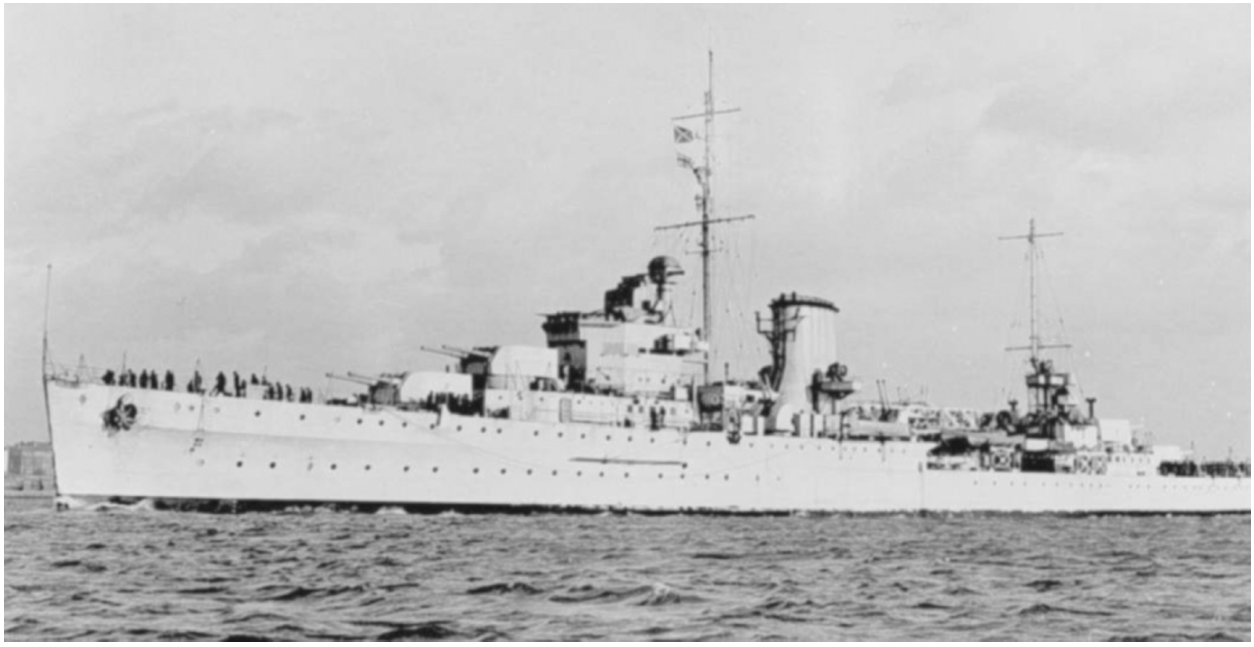
Kapitän-zur-See Hans Wilhelm Langsdorff of the *Kriegsmarine*, commanding officer of the *Graf Spee* from 11 November 1938. A thoughtful man, he was highly respected by his crew.

Heinrich Dau, commandant of the *Altmark*. Dau had served in the Imperial German Navy in the Great War and then as a merchant naval officer until retiring from the Hamburg-Amerika Line in 1934 at the age of sixty.

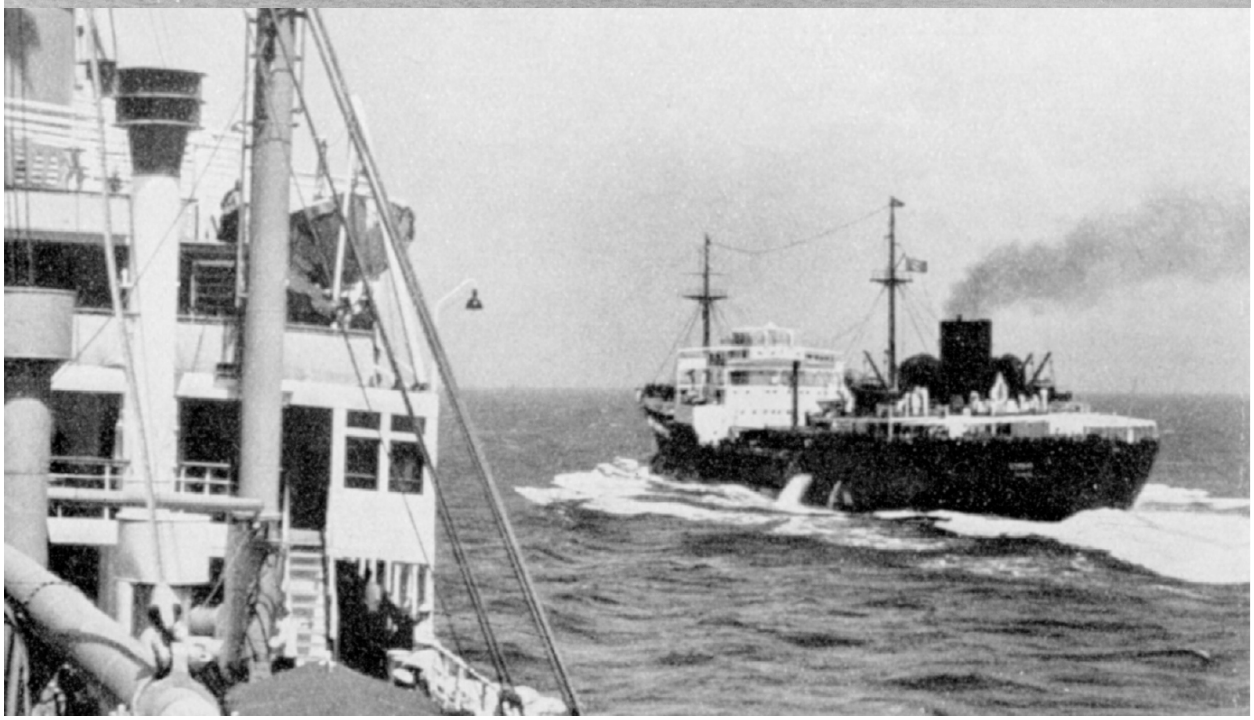


Computer image of the *Graf Spee*. (*Marco Gurk*)

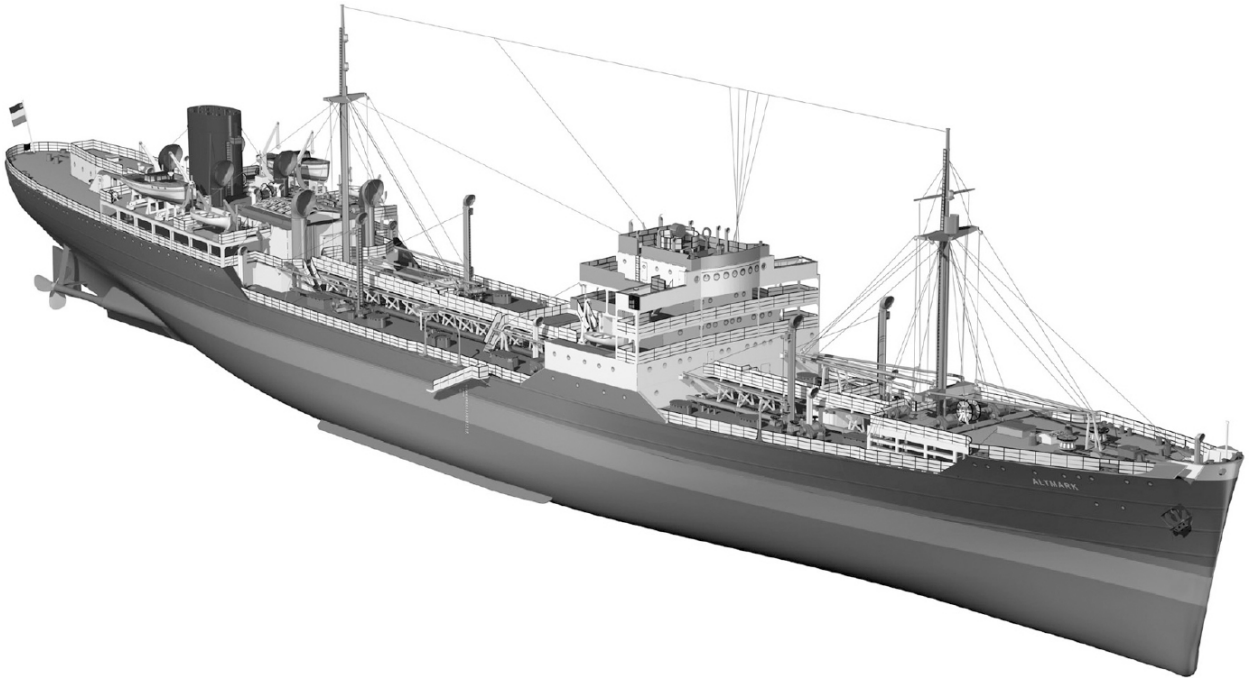




(*Top*) *Graf Spee* at sea; (*Middle*) HMS *Exeter*; and (*Above*) HMS *Ajax, Achilles* was identical.



The *Altmark, Graf Spee*'s purpose-built and very efficient support ship.



Computer generated image of *Altmark*. (*Marco Gurk*)

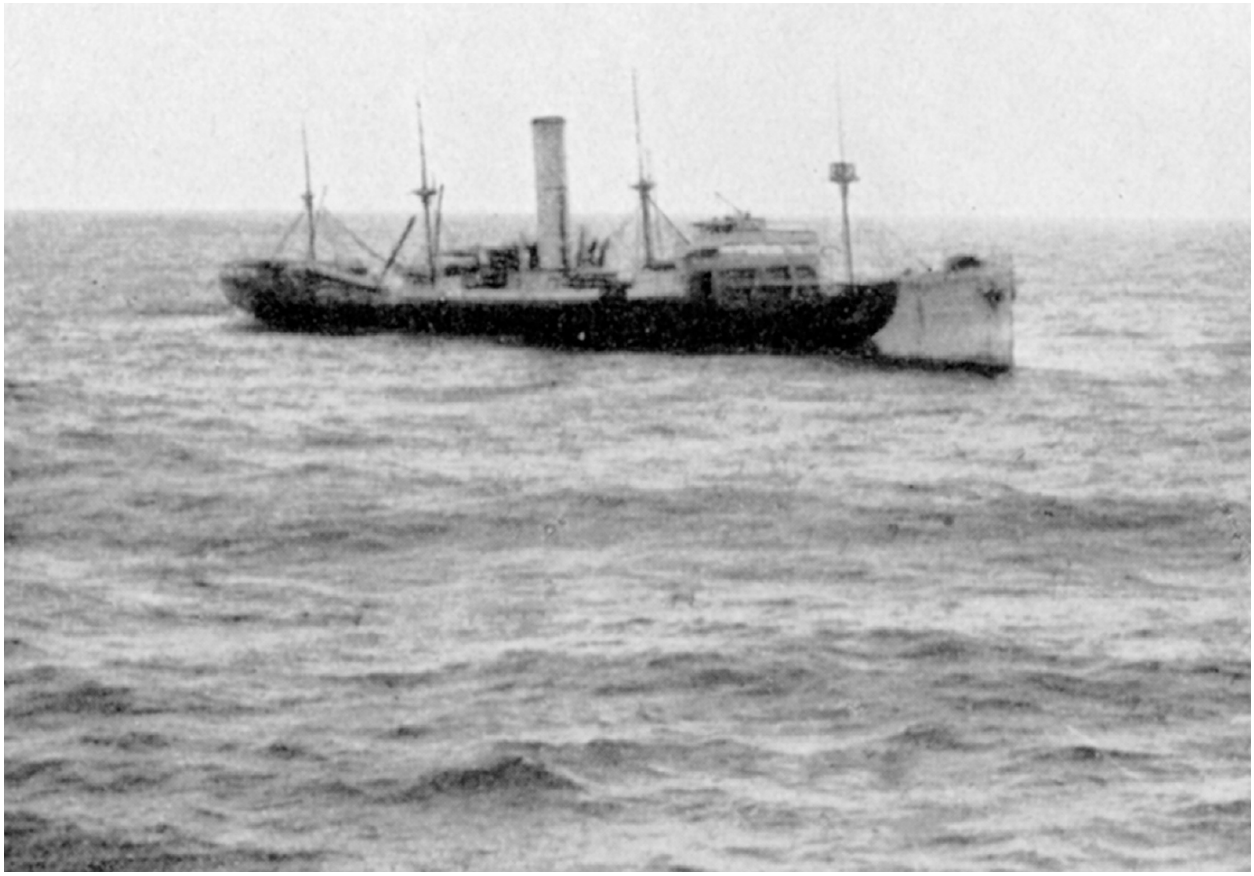
Crew at their midday meal in one of *Graf Spee*'s messdecks. White uniforms and open scuttles indicate the ship is in tropical waters. (*Maurice Laarmann*)

Prisoner-of-war accommodation aboard *Altmark*. They were housed in converted storerooms, with furniture made by *Altmark*'s carpenter and elaborate carpets from one of the captured merchantmen.

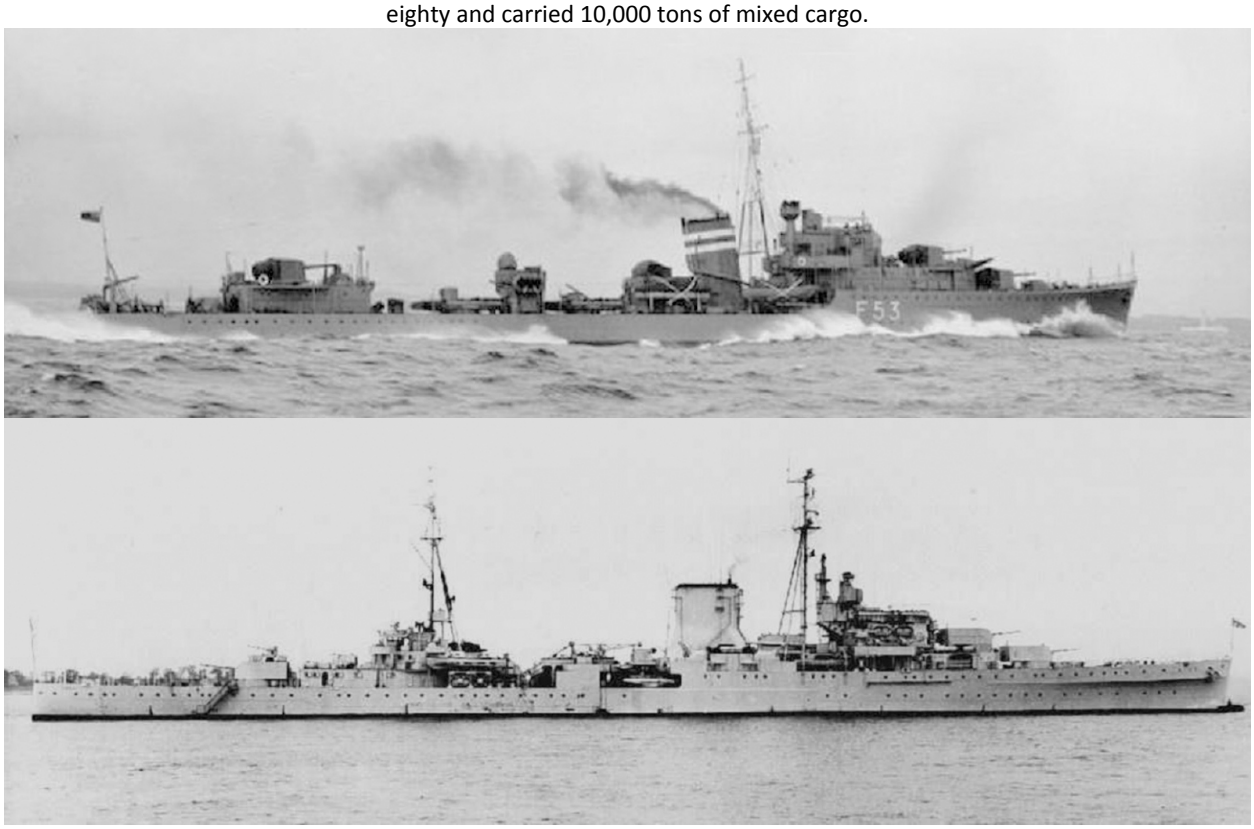
Altmark refuels *Graf Spee* with crew standing by to release tow and hoses in an emergency. (*Maritime Quest*)

Carbonic acid containers being manhandled on board *Graf Spee*. Of limited importance today, this substance was critical to *Graf Spee*'s refrigeration system. (*Maritime Quest*)

Graf Spee carried two Arado Ar196 floatplanes for reconnaissance. Only one was ever used, but gave many problems, and the other was cannibalized for spares.



SS *Huntsman* was intercepted by *Graf Spee* on 10 October 1939. The largest victim thus far, *Huntsman* had a crew of eighty and carried 10,000 tons of mixed cargo.



Graf Spee lookouts were warned to expect two Leander-class cruisers (bottom), but for a few crucial minutes reported seeing two 'single-funnel destroyers.' But in December 1939 the only single-funnel destroyers in the Royal Navy were eight brand-new Javelin-class ships (top); all others had two funnels. Differences included: position of turrets; angle of funnels and masts; length of forecastle; superstructure aft.

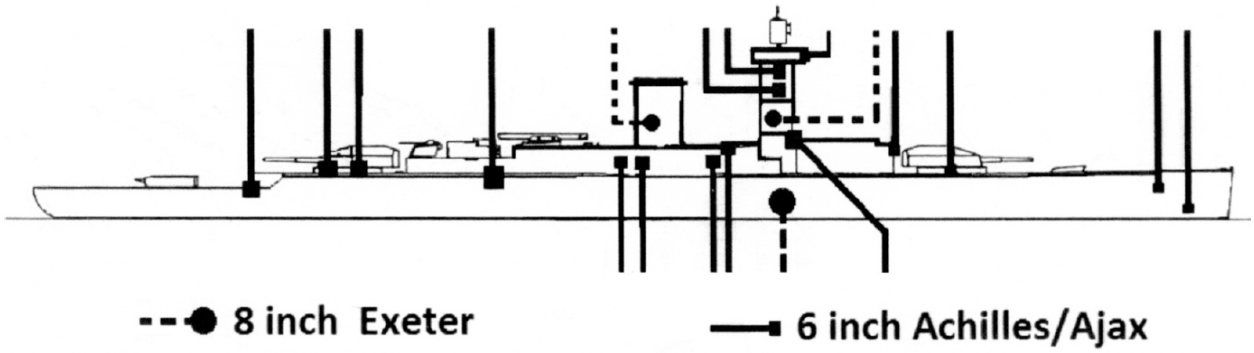


Diagram showing the main hits on *Graf Spee* from the 8-inch guns of *Exeter* and the 6-inchers of *Achilles* and *Ajax*.

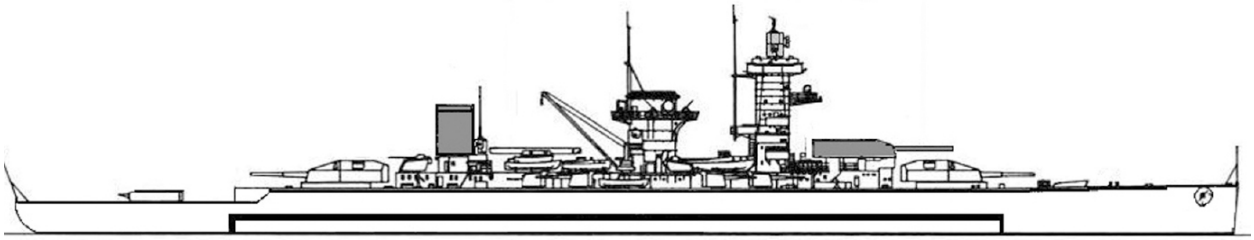


Diagram of *Graf Spee* with a dummy turret and second funnel (shaded).

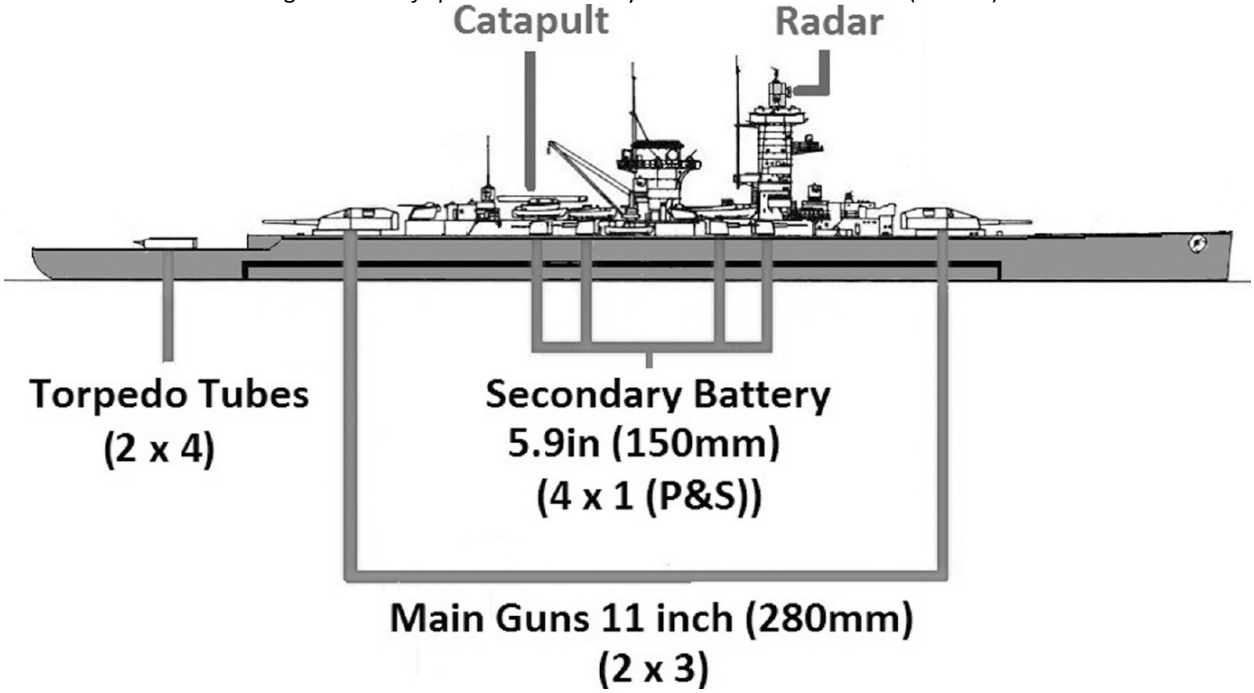
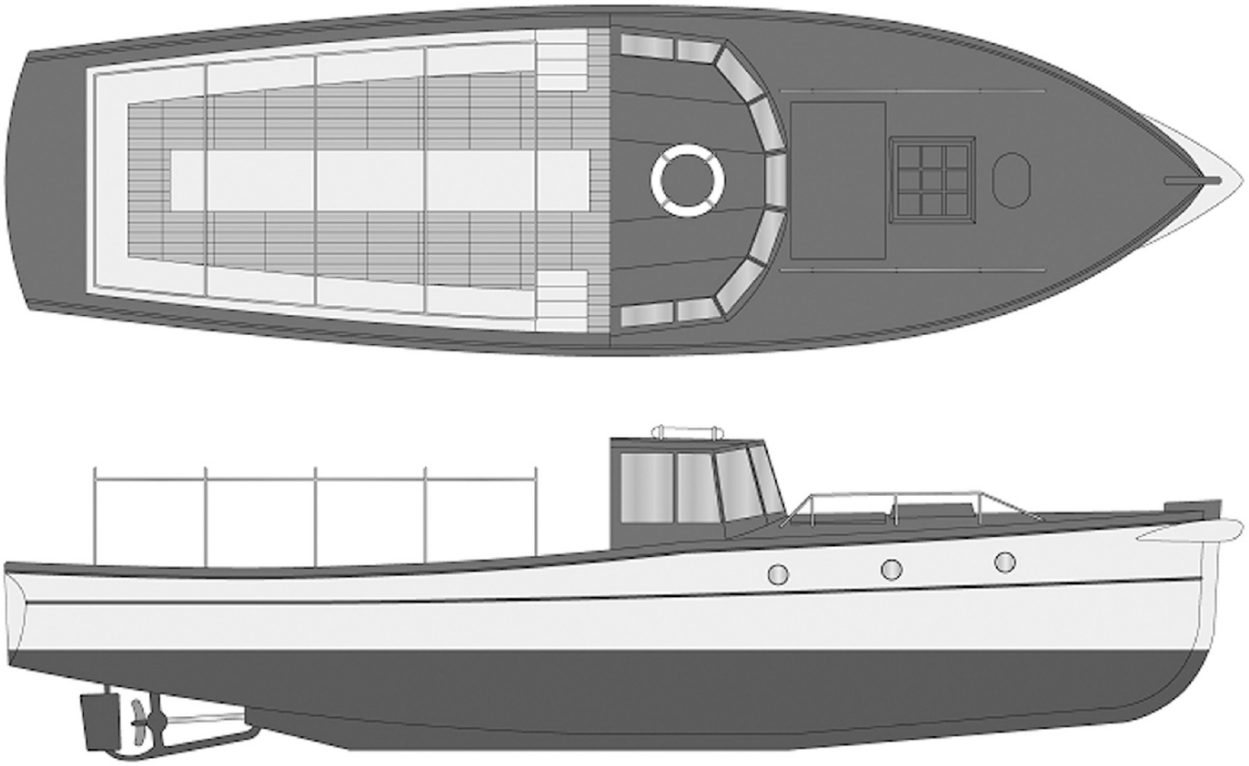


Diagram showing *Graf Spee*'s armament (P&S = Port and Starboard).



Computer image of a *Verkehrsboot* (supply boat), which was used to transport supplies from *Altmark* to *Graf Spee*. In calm weather these boats could carry approximately 8 tons, but it was a slow and laborious process. (*John Asmussen*)

PART III
The War Cruise of the *Graf Spee*

CHAPTER 12

Deployment Narrative

In early August 1939 the *Kriegsmarine* took speedy steps to prepare for the naval element of *Fall Weiss* (Operation White), the German national plan for the invasion of Poland, which was, obviously, primarily an army and air force undertaking. The navy was able to give some support along the Baltic coast, but the latter's plans also included attacks around the British Isles and on British oceanic lines of supply. Thus, in late July 1939, *Kriegsmarine* ships already in harbour were prepared for war, while those at sea were ordered to return at once. This was all done in great haste and under such good cover of secrecy that the British did not become aware of any of the sailings until much later, which is somewhat surprising given how many ships put to sea and the number of people that must have been involved.[1] Sailings included:

2 August	*Altmark*, supply ship for *Graf Spee*
19–23 August	Eighteen U-boats
21 August	*Graf Spee*
22 August	*Westerwald*, supply ship for *Deutschland*
24 August	*Deutschland*

The storing of *Altmark* commenced on 27 July and, having taken on three months supplies for *Graf Spee* and itself, it sailed on 2 August, proceeding openly down the English Channel and then across the Atlantic to Port Arthur, New Mexico, where it took on 9,400 tons of diesel fuel. This was completed on 19 August and it then sailed for the first rendezvous with *Graf Spee*.

Graf Spee was on torpedo-launching exercises on 17 August when Langsdorff received his orders to return immediately to Wilhelmshaven. Once there, the ship was prepared for a wartime operational cruise in distant waters, which included a very rapid overhaul of her machinery as well as storing for war, including ammunition, stores, provisions, and the very latest equipment that could be installed in such a short time. This included the arrival and embarkation of two Arado Ar-196 floatplanes, one being dismantled and stored in the hangar, the other on the catapult. The ship's complement was also brought up to war establishment; reservists were called up and reported for duty, five merchant navy officers joined as prize officers and eighty young recruits came aboard to undergo their basic training whilst at sea. In addition, a number of young midshipmen already aboard for training were given immediate commissions.

Graf Spee sailed from Wilhelmshaven under conditions of strictest security at 2100 on Monday 21 August 1939. Once safely at sea, Langsdorff briefed his crew, telling them of the imminent outbreak of war with England and that their mission was to proceed undetected into the south Atlantic, where they would undertake 'trade war' (*Handelskrieg*) against British shipping. During darkness on 23/24 August they slipped through the narrows between Shetland and Norway, showing the lights of a merchant ship. They continued north and then swung southwards through the Iceland-Faroes Gap where the weather worsened and they lost their first casualty – *Oberbootsmaat* Matzker. This unfortunate petty officer was swept overboard by a wave and, although the ship searched the area for over two hours, he could not be found. They then pressed on southwards, crossing the main trans-Atlantic shipping lane on the night of 28/29 August. As they went they listened to the news broadcasts as the international situation in Europe worsened by the day until, on 1 September, Langsdorff called his crew together to announce that Germany had invaded Poland at 0145 (0445 Berlin time) that morning.

The first replenishment was conducted on 1 September, when, approaching each other from different directions, *Graf Spee* saw *Altmark* at 0730 at a range of twenty-four miles (thirty-nine kilometres). As planned, *Altmark* provided *Graf Spee* with lubricating oil and spare parts in the morning and with 600 tons of fuel oil in the afternoon, while the warship transferred two 20mm cannon to the otherwise unarmed supply ship. The two ships then cruised in company and were still together when, on the morning of 3 September, they heard by radio of the outbreak of war between Germany and England; somewhat ironically it was heard first from the British transmitter at Rugby, followed by a signal from SKL forty-five minutes later.

The two ships crossed the Equator on 8 September and on the 10th arrived in an area remote from the shipping lanes where they were unlikely to be discovered, which was flanked by the islands of Ascension and St Helena to the East and Trinidad to the West. There was a short-lived scare on 11 September when the Arado spotted a British warship (it was HMS *Cumberland*) at a time when *Altmark* was actually refuelling *Graf Spee*. The British failed to spot the aircraft and made a change of course just before sighting the German ships would have become inevitable. The Germans continued for a fortnight, cruising slowly, conserving fuel, conducting training and occasionally stopping altogether to enable the engine-room staff to maintain the machinery.

On 30 September *Graf Spee* met, captured and sank the first victim, SS *Clement*.

Analysis

This was the first testing period for Langsdorff. He had to take his ship on a long voyage around the British Isles and then across the Atlantic shipping lanes without being detected by either British or French naval or air forces, in which he was most successful. Secondly, he had to work up his ship, absorb the newcomers into the crew and train his men for war – again he was successful. In fact, it is clear from every report that he had created a 'happy ship' in which the crew clearly enjoyed serving under his command and had unquestioning respect for his judgement.

His was one of only two major warships deployed by the *Kriegsmarine* in this period of heightened tension and command was exercised direct from SKL and not delegated to Commander-in-Chief West at Wilhelmshaven. In effect, Langsdorff was under the direct command of Gross-Admiral Raeder, who reported any matter of any importance to Hitler. It was, therefore, inevitable that Langsdorff should be constrained by changes in direction from his political masters in Berlin. His orders on sailing on 21 August were:

- To intercept and damage enemy supply routes by all possible means.
- At least in the initial stages, to conduct Trade Warfare according to Prize Regulations (*Prisenordnung*).
- To engage enemy naval forces, even if inferior, only if this furthered the main purpose of the operation.
- His allocated operational areas were: first, the South America–Cape Verde islands–Biscay trade route; and, secondly, the South and Central Atlantic area, including the Capetown–Cape Verdes route and the Southern Indian Ocean. He was, however, free to interpret these orders according to the opposition and the density of traffic.
- To employ frequent changes between operational areas, thus causing dislocation and injury to enemy mercantile traffic, while *Graf Spee*'s appearance in distant waters would further serve the purpose of increasing the enemy's feeling of insecurity.
- Initially, operations against objectives ashore were not permitted.
- Until hostilities commenced *Graf Spee* was to wait in an area to the northwest of the Cape Verdes and to maintain radio silence.

These orders were clear and in line with Grand Admiral Raeder's philosophy to leave a

considerable amount of initiative to the man on the spot. It would appear, however, that there were thoughts of expanding the role in the future, by relaxing the adherence to Prize Regulations and, possibly, permitting attacks on shore targets, as had been done in the First World War in the attacks on Dar-es-Salaam, Madras and Penang (see Chapter 1).

On 3 September Langsdorff was told that Britain had declared war and to commence hostilities, but later on that day he was told that French ships were not to be attacked as Hitler still hoped to dissuade Britain and France from supporting Poland. The flow of orders increased with yet another signal on 5 September telling him that no action was to be taken against passenger ships, even in convoy, an order which was a direct consequence of the sinking of SS *Athenia*.[2] In essence:

- France's 'Wait and See' attitude and the present British inactivity made operations by *Panzerschiffe* inadvisable at present.
- The SKL had detected a suspension of enemy merchant shipping movements and suspected that they were organising searches for the *Panzerschiffe*, so the possibility of successful operations by these ships was reduced.
- Trade Warfare was therefore to be discontinued and the *Panzerschiffe* were to move well away from their operational areas; to the Arctic Ocean in the case of *Deutschland*, and to the South Atlantic or Indian Ocean in the case of *Graf Spee*, and both were to remain on radio silence.

On 25 September Langsdorff received the latest intelligence report from SKL. This told him that seven Royal Navy ships were working off the east coast of South America: the cruisers *Cumberland, Exeter, Ajax* and *Despatch*; the destroyers *Hotspur* and *Havock*; and the submarine *Severn*. Working off the west coast of Africa were the cruisers *Neptune, Cape Town* and *Danae*, the submarine *Clyde* and two unnamed gunboats. This report was correct in most instances, except for *Danae*, which was in the North Atlantic, and *Severn*, which was based with another submarine, *Clyde*, at Freetown, from where both were escorting convoys to the Indian Ocean.

On 26 September SKL authorised the start of operations by both *Deutschland* and *Graf Spee*, with the previous restrictions on attacking French targets lifted.[3] This was further amended on the evening of 29 September when Langsdorff was told that:

At the present time England needs successes. Any gain of prestige by England is therefore undesirable. On the other hand attacks on shipping by *Panzerschiffe* are to be carried out to the fullest extent.

The restriction of *Panzerschiffe* operations to specific areas is hereby cancelled …[4]

It may appear that Langsdorff was being given conflicting instructions from Berlin, and he certainly felt that the limitation on French victims was contradictory. Nevertheless, any senior naval commander knows that he is subject to political direction, particularly in a sensitive period such as that immediately following the outbreak of war.

Thus this first phase of *Graf Spee*'s deployment was a total success. *Altmark* had been seen steaming down the English Channel, made no secret of taking on diesel oil in Port Arthur, but then disappeared into the central Atlantic. Meanwhile, *Graf Spee* had sailed and rounded the British Isles undetected, and was now established, her presence totally unsuspected, in the central Atlantic.

Notes

1. *The War at Sea*, Volume 1, Roskill, p. 58.
2. SS *Athenia* (15,465grt) sailed from Liverpool on 1 September 1939 and was torpedoed by U-30 at 1940 on 3 September. There were 1,418 aboard; 117 died, of whom twenty-eight were US citizens. Germany denied all knowledge of the sinking and, in fact, did not know for certain until U-30 returned to base on 27 September. Nevertheless, they only publicly admitted responsibility in 1946.

3. Bidlingmaier, op cit., p. 40.
4. Bidlingmaier, op cit., p. 41.

CHAPTER 13

Active Operations
Phase I: *Clement* to *Africa Shell*
Narrative

SS *Clement*, 30 September 1939[1]

Now that he had been given the go-ahead by Berlin, Langsdorff headed for the South American coast, where, at about 1130 on 30 September and in a position some fifty miles southeast of Pernambuco, he encountered a British tramp steamer, SS *Clement*. Langsdorff adopted the tactic he was to use as standard and advanced towards *Clement* head-on and at maximum speed. *Graf Spee* transmitted orders to her victim over the radio not to send a distress call, but, despite this, the radio operator sent the distress signal and ship's position, while the captain threw the confidential documents overboard.[2] The Arado seaplane made several passes and fired its machine gun at the upper works, where the Chief Officer was wounded in the hand. *Graf Spee* sent the boarding party across, and *Clement*'s crew were sent to the boats and directed to make their own way to land, the officer-in-charge having been given the correct course to the South American port of Maceio, which they all reached safely on 1 October.

The master and the chief engineer were taken prisoner and were sent to the *Graf Spee*, where Captain Harris was questioned, but gave nothing away. *Clement* was then sunk, although this proved much more difficult than expected. Two torpedoes were launched and both missed, then some twenty-five rounds of 5.9-inch and finally five rounds of 11-inch. She finally sank at 1640. That evening the Greek tramp SS *Papalemos* was stopped by *Graf Spee*. Her captain promised not to send a sighting signal until 600 miles from his current position, upon which Captain Harris and chief engineer were transferred. *Graf Spee* then continued her raiding operation. *Papalemos* reached St Vincent on 9 October where the two British ship's officers were released.

SS *Newton Beech*, 5 October 1939[3]

Graf Spee's second victim was SS *Newton Beech*, another tramp steamer, this time carrying some 7,000 tons of maize, en route from Cape Town to Freetown where she was due to join a UK-bound convoy. It is worth noting that the general threat posed by the German surface raiders had already forced the British to introduce the convoy system as early as 2 September 1939.

Graf Spee and *Newton Beech* met on 5 October at a point some 480 miles east-south-east of Ascension Island, but the latter's wireless operator managed to transmit an SOS distress signal, rather than the Admiralty's preferred raider report. The transmission was weak but just strong enough to be heard by another British ship, SS *Martand*, which passed it to the cruiser HMS *Cumberland* when they met later that day. The latter did not, however, retransmit it to his RN superiors as the ship was on radio silence. The Germans also seized some instructions; not high level codes, but they did find the formats for the various types of raider report.

Langsdorff retained *Newton Beech* and her crew, and when SS *Ashlea* was captured two days later her crew was also placed aboard the temporary auxiliary. But on 8 October the combined crews were all transferred to *Graf Spee* and *Newton Beech* was sunk by the prize crew using explosive charges in position 09° 35′ S : 06° 30′ W, off the coast of Angola.

SS *Ashlea*, 7 October 1939[4]

Only two days after taking *Newton Beech, Graf Spee* found SS *Ashlea*, also a British tramp steamer, which was carrying some 7,300 tons of unrefined sugar, and, like *Newton Beech*, was

on its way from Cape Town to Freetown to join a homeward-bound convoy. The master thought the approaching warship was French until too late. The entire *Ashlea* crew was transferred to the *Newton Beech* and a few sacks of sugar and potatoes transferred to *Graf Spee*. The *Ashlea* was sunk using explosive charges in position 09° 52′ S : 03° 28′ W.

SS *Huntsman*, 10 October 1939[5]

Huntsman was the largest victim so far, with a crew of eighty and a 10,000-ton cargo of tea, carpets, minerals, gum arabic, footwear, hats and other items. It had loaded in India and East Africa and had intended to go home via the Suez Canal, but had been redirected via the Cape of Good Hope as being 'safer'. As with *Graf Spee*'s previous victims, *Huntsman* was on its way to Freetown to join a homeward-bound convoy, but *Graf Spee* sighted the ship at 0640 and took it easily and without any casualties.

Huntsman's crew were retained aboard to run the ship under the direction of the German prize crew and they steamed north-westwards until meeting both *Graf Spee* and *Altmark* on the fourth day. The sea was so calm that *Huntsman* was able to tie-up alongside *Altmark* for the transfer of some eighty tons of the cargo, following which the crew also transferred to *Altmark*, at the same time as other prisoners were arriving from *Graf Spee*. This completed, *Huntsman* was blown up and sunk in position 08° 30′ S : 05° 15′ W, about 650 miles south-west of St Helena.

MV *Trevanion*, 22 October[6]

The fifth victim was MV *Trevanion*, a modern diesel-powered ship carrying some 8,000 tons of zinc concentrates. She was sailing from Port Pirie in South Australia to Swansea and, like the others, her next port-of-call would have been Freetown to join a UK-bound convoy. *Graf Spee* intercepted her on the afternoon of 22 October 1939 at a position approximately midway between St Helena and the west coast of Africa.

It was only when *Graf Spee* rounded up and halted a few hundred yards away that *Trevanion*'s captain realised that she was German and he personally supervised and protected his radio officer as he transmitted an RRRR signal, despite *Graf Spee* firing a 20mm anti-aircraft cannon at the bridge.[7] Captain Edwards then collected the secret documents in their weighted pouch and, in full view of the approaching Germans, threw it into the sea. As was his custom, Langsdorff met *Travanion*'s captain on his arrival, apologised for having to sink his ship and congratulated him on his crew's courage. *Trevanion* was then sunk using prepared charges, although it took some hours for her to disappear.

To the Indian Ocean

During the next six days *Graf Spee* steered to the south-west away from the trade routes and, on 28 October, met the *Altmark* near Tristan da Cunha, roughly midway between the Cape of Good Hope and the east coast of South America. Once refuelling had been completed, *Trevanion*'s crew were transferred to *Altmark*, and *Graf Spee* set course to the Indian Ocean.

Analysis

By the time he met *Clement*, Langsdorff had developed a standard operating procedure (SOP) which had been practised in exercises with *Altmark* and which, with the one disastrous exception of *Doric Star*, he then followed with only minor adjustments for the rest of his raiding activities. The first element was that, having found the potential victim and decided to attack, he headed straight for it at maximum speed. A large French ensign was flown from a yard abaft the bridge tower thus ensuring that the viewer would see occasional flashes of red and white without being quite certain which nation's flag it was. The effect was enhanced by the fact that, when viewed from dead ahead, *Graf Spee* vaguely resembled the French battlecruiser *Dunkerque*, which was reputed to be in the South Atlantic. It should also be borne in mind that Merchant Navy watchkeepers – at least this early in the war – were not skilled in

warship recognition; indeed, with the war only a few weeks old, many of them were not even expecting to be attacked.

Thus *Graf Spee* was able to approach very close before rounding up, using its engines and rudder to bring it to a standstill in a very precise position, broadside on to the victim and with the massive 11-inch turrets pointing straight at it. Langsdorff's first priority in all this was to prevent the victim from transmitting a message, his warning 'Do Not Transmit or I Will Shoot' being painted in large letters in English on a board on the front of the bridgetower, and also communicated by light signal, flags and, on occasions, also by radio. Only if the victim ignored such a warning did Langsdorff order opening fire, usually using a 20mm anti-aircraft cannon.

First away was the boarding party, always led by one of the five reservist officers who would be thoroughly familiar with merchant ship layouts and practices. His task was to go straight to the bridge in order to arrest the captain, seize control of the ship, prevent any sabotage, and confiscate any charts and books. Second in the boarding party was the chief of the *B-Dienst* detachment who went to the wireless cabin to ensure that no transmissions could be made, and then to seize any codebooks and instructions. Particular attention was also paid to trying to prevent the captain or another officer from throwing the codebooks overboard. The remainder of the boarding party, usually twelve strong, headed straight for previously specified parts of the ship, the highest priorities being to ensure that the engines had not been tampered with and that the seacocks had not been opened.

Two practical issues arose concerning the victims. The first was that Langsdorff had started by using minimum force in order to avoid taking life or, even, if possible, causing injury, which involved using the 20mm cannon. However, this had proved insufficiently effective to prevent a really determined wireless operator from sending the 'under-attack' message. The other problem was that the merchant ships were proving difficult to sink and while using the guns or torpedoes provided useful target practice for the crew the stock of all types of ammunition was strictly limited.

Taken in the round, however, this first period of commerce raiding had proved reasonably successful, although the number of victims had not been great and their cargoes of little value. It was time to move on.

Notes

1. SS *Clement*. Booth S.S. Co.; Captain F. C. P. Harris OBE; completed 1934; 5,051grt; 412ft; 13kt.
2. If attacked, British merchant ships were instructed by the Admiralty to send a very short signal, using the Morse code, giving the transmitting ship's call sign and location, prefixed by: AAAA for air attack; SSSS for submarine, and RRRR for surface raider. Recipients were expected to acknowledge receipt and pass the message on to the nearest Admiralty shore station.
3. SS *Newton Beech*. John Ridley, Son & Tully, Newcastle-upon-Tyne; Captain J. Robinson; completed 1925; 4,651grt; 373ft; 9.5kt.
4. SS *Ashlea*. Cliffside Shipping Co.; Captain C. Pottinger; completed 1929; 4,222grt; 367ft; 12kt.
5. SS *Huntsman*. Charente Steam Ship Co. Ltd. (T&J Harrison), Liverpool; completed 1921; Captain A. H. Brown; 8,300grt; 482ft; 13kts.
6. MV *Trevanion*. Hain Steamship Co.; completed 1937; Captain J. N. Edwards; 5,299grt; 432ft; 12kts.
7. This signal was heard by a British ship, Union-Castle liner *Llanstephan Castle*, who reported that she had intercepted a signal from an unidentified steamer stating that she was being shelled in a position '16° South, 4° 3' East at 1400 GMT.'

CHAPTER 14

Active Operations
Phase II: Indian Ocean
Narrative

Graf Spee underwent replenishment from *Altmark* on the morning of 28 October in a position some 100 miles north-east of Tristan da Cunha. That afternoon Langsdorff convened a *Kriegsrat* (council of war) at which he announced his intention of taking the ship into the Indian Ocean and a few hours later *Graf Spee* set off on the new phase of his mission. His course took the ship towards the Antarctic before turning east, passing some 400 miles south of Africa's southernmost tip, Cape Agulhas, and then north-east into the Indian Ocean. In the event, this foray into what seemed to be a potentially fruitful hunting ground was to prove singularly unproductive for *Graf Spee* but of great importance to historians, as will be explained.

As *Graf Spee* left *Altmark* on 28 October a group of officers celebrated the promotion of two of their number with a glass of champagne in the admiral's mess[1] and there seemed every reason for Langsdorff and all his crew to be full of optimism. The captain himself exuded a quiet and apparently unshakeable confidence and, on 30 October, he announced the award of the Iron Cross to no fewer than one hundred members of the crew, although he was careful to stress that in his view every member deserved one. He also took the opportunity to tell his crew that, in January, *Graf Spee* would '*versuchen in die Heimat durchzubrechen*' (attempt to break through to the homeland), although the use of the word '*versuchen*' (to attempt) seemed to imply a less than one hundred per cent belief that it would be successful.

On 4 November Langsdorff visited the officers' wardroom and in the course of conversation with a small group of officers he told them that he intended to act in the Indian Ocean as *Graf Spee* and then to return to the coast of South America where he would resume the guise of *Admiral Scheer*.

As they proceeded around the cape the weather deteriorated and by the time they crossed the Cape–Australia shipping lane – which was disappointingly empty of any potential victims – the seas were so steep that it would have been impossible to launch any of the ship's boats anyway. So Langsdorff decided to continue farther north towards the southern end of the Madagascar Channel.

MV *Africa Shell*, 15 November[2]

At 1115 on 15 November *Graf Spee* was sailing along the coast of Moçambique (Portuguese East Africa) some 150 miles north of Laurenço Marques[3] when lookouts spotted a small tanker, MV *Africa Shell*, sailing close to the shore. It was a brand-new vessel whose task was to restock dumps of aviation fuel between Mombasa and Durban for the British Imperial Airways flying boats plying the UK–South Africa route.[4] Unlike previous victims, *Africa Shell*'s master, Captain Patrick Dove, recognised *Graf Spee* immediately as a 'pocket battleship', and he worked up to full speed in an attempt to drive his vessel onto the beach, or, at best, to get within the three-mile limit, where he would be safe from capture. Faced by *Graf Spee*'s heavy weapons, however, he had no option but to surrender. His ship was not fitted with wireless, so the question of attempting to transmit did not arise.

The crew were all put in boats except for the captain who was about to join them when *Graf Spee*'s lookouts sighted another vessel and the boarding party was rushed back to their parent ship, taking Dove with them. *Africa Shell* was sunk 160 miles north-east of Lourenço Marques in position 24° 41′ S 35° 00′ E.

The capture and sinking of *Africa Shell* was a trivial matter as it was a very small vessel and in

ballast, so apart from a few nautical items, such as sextants, the German raider gained virtually nothing. What historians gained, however, was that an unlikely friendship developed between Captain Patrick Dove and his captor, Langsdorff, which, thanks to Dove's subsequent book, gives a unique insight into Langsdorff's character and events aboard the *Panzerschiff* up to Dove's release in Montevideo on 14 December.

Other Ships

Graf Spee encountered few other ships during this foray. On the night 14/15 November (the day before the meeting with *Africa Shell*) they stopped a small coaster. This turned out to be the Dutch-registered MV *Holland (*1,895grt) sailing from Beira to Laurenço Marques, so, as she was neutral, she was allowed to continue unmolested. Then, immediately after taking and sinking *Africa Shell, Graf Spee* closed up on the Japanese freighter *Tihuku Maru* (5,857grt) which also quickly established its neutral status and was allowed to proceed with the German signal '*Gute Reise*' (safe journey).

On 16 November, about 350 miles south-west of Madagascar, the *Graf Spee* stopped the Dutch motorship *Mapia*, (9,600grt) sailing from Amsterdam to Medan in Sumatra, but on establishing her neutral status she, too, was released.[5]

On 16 November *Graf Spee*'s *B-Dienst* radio monitors intercepted a signal from the British Senior Naval Officer Durban warning all ships of the presence of a German raider, which must have resulted from debriefing the crew of the *Africa Shell*. That was correct, but a subsequent report that the raider had been seen off the Tanganyikan coast was not. However, it was clear that the Allies knew that a German ship was roaming the Indian Ocean, so Langsdorff decided it was time to return to the Atlantic. Accordingly, *Graf Spee* headed due south and once again crossed the Australia–Cape shipping lane without seeing a single potential victim.

Analysis

The foray into the Indian Ocean was fully in compliance with the orders Langsdorff had received. His intentions were to threaten merchant shipping in a new area and thus draw British naval forces away from the Atlantic.

He also had high hopes of rich pickings among the Australian, British and New Zealand ships which he was confident he would find on the Australia–Cape route. He was, therefore, somewhat taken aback when none were to be found and was so puzzled that he asked his newly-arrived British prisoner, Captain Dove, why this should be so. Dove, who had been plying the East African coastal route, could offer no explanation at the time, but writes that he was later told by the captains of *Tairoa* and *Doric Star* that the Australian wool-clip was late that year and the ships had been delayed awaiting its availability. That may have been so in some cases, but the real reason was that the threat of German raiders in the Indian Ocean had forced the British and Australian governments to establish convoys and the ships had been held up for several weeks while a proper convoy system was established.

Langsdorff's only achievement in the Indian Ocean was to sink a very small tanker. However, by allowing all the crew except one to escape, he made sure that his presence was known and the British had no choice but to greatly increase their surveillance over the Indian Ocean and to devote yet further resources to convoys.

Notes

1. Rasenack, p. 86.
2. *Africa Shell*. Shell Co. of East Africa; Captain P. Dove; 1939; 706grt; 185ft; 10kt.
3. Now renamed Maputo.
4. Dove, op cit., p. 26.
5. For unknown reasons, but possibly due to strict observance of its country's neutrality, *Mapia* did not report this encounter until arriving in Sumatra in mid-December.

CHAPTER 15

Active Operations
Phase III: Return to the Atlantic
Narrative

By 21 November *Graf Spee* was back in the South Atlantic and having little else to occupy them, the officers turned the wardroom into a 'gambling den' where most played *Doppelkopf* (double head), a popular German card game. The more serious-minded played chess and the younger officers were particularly pleased that Langsdorff joined them on several evenings, when he proved to be both passionate and skilled at the game.

On 23 November Langsdorff felt sufficiently confident of the safety of his ship's location to allow the engine-room staff to give the machinery an overhaul. The bases were cracked and some of the pistons had to be replaced, but this was scarcely surprising after covering some 30,000 miles. Also, in order to alter the ship's appearance the carpenters and seamen were put to work using wood, canvas and paint to construct an additional forward 28cm turret and a second funnel. The turret was three-dimensional, but although the funnel could only be two-dimensional, it was still sufficiently realistic in side views and from a distance. This work continued to 28 November and *Graf Spee* was wearing this disguise when she took *Doric Star* and *Tairoa* but it was removed on 6 December.[1]

On 24 November Langsdorff called a midday meeting for all his junior officers where he announced that it was now his intention to return to Germany, which cannot have come as a great surprise because they all knew that the ship had to return by the end of January anyway. What did surprise them, however, was his announcement that, in future, he would cease avoiding action with enemy ships but would attack them head-on even if this meant losing their ship.[2] His actual words were: '*mitnehmen, was mitzunehmen gehe*' (accept the consequences).[3]

26–27 November

Altmark arrived at the rendezvous in the morning and the two ships immediately linked up for what proved to be a particularly successful replenishment.[4] They transferred 1,810 tons of fuel via the pipeline and, because the sea was so calm and the moon so bright, they were able to continue the transfer of stores by motorboat throughout the night, eventually moving no less than 120 tons, their greatest total ever in such a transfer. Although the 26th was a Sunday (it was also *Totensonntag*)[5] they worked hard to complete the transfers, so that the Monday could follow a Sunday routine. The overhaul of the engines was completed at 0800 on 27 November and *Graf Spee* set off once again to search for victims.

28 November

To cap what seemed a very high period for *Graf Spee*'s crew, and, indeed, for the *Kriegsmarine* in general, on 28 November they heard on the British news broadcast that the battlecruisers *Gneisenau* and *Scharnhorst* had returned to Germany from a sortie in the Atlantic in the course of which they had sunk the British armed merchant cruiser *Rawalpindi*. They also heard from the German news that U-47 had sunk a London-class cruiser.[6]

Doric Star, 2 December[7]

On 2 December the Arado undertook two flights. The first, just after dawn, found nothing and the aircraft returned safely to the ship. It took off again at midday. At 1225 lookouts operating *Graf Spee*'s optical rangefinder saw traces of smoke in the opposite direction to that taken by the Arado and at the considerable distance of thirty-three miles (53km). The target was then lost to sight but reacquired at a range of twenty-three miles (37km) and it then seemed to increase speed and turn away, suggesting that it had spotted the rapidly approaching *Graf*

Spee. Concerned that his intended victim might escape, Langsdorff ordered the firing of two rounds of 28cm, the first at about 1300 and, when the target showed no signs of stopping, a second at about 1310, after which the unarmed merchant ship had no option but to stop. Both rounds landed within 200 yards of the target, a tribute to *Graf Spee*'s rangefinding and gun control systems. The victim was SS *Doric Star*, sailing from New Zealand to the UK by way of Australia and Cape Town, carrying a refrigerated cargo of New Zealand lamb, mutton, cheese and butter, with a layer of baled Australian wool above. The second round made the victim stop but it also gave him the opportunity to transmit a full raider report: 'RRRR RRRR RRRR 19° 15' south 05° 05' east, *Doric Star* gunned battleship'.[8] *Graf Spee*'s monitors not only heard the transmission, but also no less than six acknowledgements.[9]

The problems for Langsdorff were compounded when, after the boarding party had arrived aboard *Doric Star*, he was told that the Arado could not be contacted. He immediately ordered the prize team to return at once and showed visible frustration when they failed to do so, remaining instead until they had ensured that every member of the British ship's crew had left the ship, that all nineteen silver bars, discovered hidden in the captain's cabin, had been removed, and that the detonating charges had been correctly placed.

When the charges were detonated they failed to sink the *Doric Star*, so Langsdorff ordered the Gunnery Officer to fire 28cm rounds into the waterline, and when seven of these, too, failed to have any demonstrable effect he ordered the launching of a torpedo, which, on this occasion at least, actually hit the target and detonated with a huge roar. Langsdorff then set off to find the Arado and its crew, and while they were on the way the crew of the optical rangefinder reported that they had seen *Doric Star* sink.

Tairoa, 3 December[10]

Graf Spee's next victim was SS *Tairoa* which was sighted at first light the following day. She was carrying meat in refrigerated holds, as well as lead and wool. She had heard *Doric Star*'s distress call and was heading away when caught. Langsdorff reverted to his more usual procedure and approached at full speed, flying the French flag until some six miles (10km) distant, when he went broadside on and signalled the ship to stop and not to transmit. To emphasise the point, the 28cm turrets swung round to aim at her. Despite this, the operator transmitted a radio report, so *Graf Spee* fired 37mm at the wireless room although, after boarding *Tairoa*, the German prize crew found that the outside of the room was protected by sandbags and the wireless officer had been able to transmit, including identifying the raider as '*Admiral Scheer*' before shells destroyed the set. The captain's cabin, part of the steering mechanism, and much of the bridge were also destroyed, and five men were wounded. Despite the shortage of time, the boarding party managed to find and tranship eighteen drums of carbonic acid – a most important find.

As in earlier cases, the explosive charges failed to sink the ship, so *Graf Spee* opened fire with 5.9-inch guns and the range was so short that spray from the explosions fell on the warship's own quarterdeck. Finally, a torpedo had to be used, which, as with *Doric Star*, both hit and detonated, possibly due to the extremely short range. It blew a huge hole in *Tairoa*'s side and at 0730 the ship duly sank. *Graf Spee* then made off at speed, heading almost due west for her next rendezvous with *Altmark* and then on to attempt to take prizes in Santos Bay.

Ships Passing in the Night, 6 December

Graf Spee met *Altmark*, as planned, on 6 December. By now the numbers of prisoners aboard *Graf Spee* had grown excessive, so 144 were redeployed to *Altmark*, leaving twenty-nine officers in *Graf Spee*, plus three wounded boys from *Tairoa* in the sickbay.[11] As soon as the oil transfer was complete the two ships disengaged but remained together in order to conduct night exercises using *Graf Spee*'s searchlights, with *Altmark* as the target.

The night exercise having been completed satisfactorily the two crews reverted to night

cruising stations only to be stood to again when the alarm sounded at 2242. The cause was a blacked-out ship which passed to starboard at a distance of some 5,000 yards (4,500m). *Graf Spee* identified the stranger as a merchant ship and, since it was totally without lights, Langsdorff would have been within his rights according to Prize Regulations to engage without further warning. He did not do so and at about 2300 the ship disappeared into the darkness. This blacked-out ship was also seen from *Altmark*, where Captain Dau thought that it might have been an 'English cruiser'.[12]

Streonshalh, 7 December[13]

Graf Spee parted from *Altmark* on the morning of 7 December and at 1746 that day the lookouts sighted a small British tramp, which proved to be the *Streonshalh*, carrying 5,000 tons of Argentine grain to England. As with *Tairoa*, Langsdorff reverted to his customary approach, head-on and at maximum speed, only rounding up when about a quarter of a mile distant. *Streonshalh* did not attempt to use its wireless but observers aboard *Graf Spee* saw someone throwing weighted bags into the sea.[14] The boarding party rushed aboard the victim, rounded up the crew, and grabbed whatever documents and goods they could lay their hands on. She was sunk with fire from the 105mm guns. This was to be *Graf Spee*'s final victim: nine ships had been sunk for a total of 50,089grt, and not one life had been lost on either side.

Fatal Information

Somehow or other – the details are disputed – the staff aboard *Graf Spee* deduced that the British were routing ships from the Plate out to sea and then following a great circle route to Freetown in Sierra Leone from where they were assembled into convoys for the voyage to the UK. This seemed to offer more than Santos Bay, so Langsdorff changed his plan.

Analysis

26 November, Appreciation

At this point Langsdorff wrote an appreciation of the situation in his war diary – see Annex C – which can be summarised as follows. Operationally, his instructions from SKL were to continue to tie down as many enemy naval forces as possible by causing destruction to enemy merchant vessels, but to avoid giving the enemy a propaganda boost by the loss of a *Panzerschiff*. An important consideration for Langsdorff was the weather, which in the south and central Atlantic offered excellent daytime visibility and usually bright moonlit nights. This meant that if the enemy found *Graf Spee* it would be easy for their cruisers and destroyers to shadow his ship while heavier forces were assembled to eliminate it.

On the logistical side the *Graf Spee*'s armament was in good condition. Concerning the ammunition, he had used a small number of 28cm rounds and torpedoes, but the amount remaining appeared sufficient. There was also sufficient fuel. However, the machinery, and, in particular, the diesel engines, were in desperate need of a major overhaul after prolonged continuous operation.

From all this he evolved a plan whose strategic element was that he would continue to operate in the same area of the Cape route until about 6 December and then, depending on state of machinery, either head straight for home or divert via the River Plate. At the operational level his plan was unambiguous: if he met an enemy cruiser he would head straight for it in order to use his 28cm guns to eliminate it as quickly as possible.

The Ship that Passed in the Night

The identity of the ship that passed on the night of 6/7 December remains a complete mystery. There can be no doubt that the ship was real and not some form of maritime illusion, as it was observed from and recorded separately by both *Graf Spee* and *Altmark*. Rasenack and others were convinced that it could not have failed to see *Graf Spee* conducting its searchlight exercises. Nevertheless, the stranger neither showed a light nor did it change course to try to

escape detection.
Rasenack, in particular, felt very strongly that it was a British merchantman, which chose not to transmit a distress call at the time of the mid-ocean meeting, but did so when it was well clear of the two German vessels. He remained convinced that this explained how Harwood's squadron was able to find *Graf Spee* on 13 December. But there is no evidence whatsoever of any such sighting report being received, and British sources are unanimous that no information concerning *Graf Spee* was received from any source between *Tairoa*'s raider attack message on 3 December and the sighting of *Graf Spee* by Harwood's squadron on 13 December. There is no record of any British shipboard or shore station receiving a radio signal and no report was made by a ship on reaching port.
It is possible that it was a British merchant ship following the great circle route from the Plate to Freetown where it would join a convoy. If that is correct and if its watchkeepers did see *Graf Spee* and/or *Altmark*, they never reported it on arrival at their destination.
Another possibility was offered by Rasenack in his book, which was published in 1957. He says that after the war he met Commander Washbourn, who had been Gunnery Officer aboard *Ajax* during the battle. Rasenack recounts how Washbourn told him that the mystery ship was a Norwegian, that it had recognised *Graf Spee* as the two passed, but had refrained from reporting the sighting to the British Admiralty until next morning, when it used a shortwave frequency not monitored by the Germans.[15] There is no such report anywhere in the Admiralty files, nor does Commander (later Rear Admiral) Washbourn mention it anywhere else. Captain Rasenack was, however, a patently honest man so it can only be assumed that there was a misunderstanding.
It is not unknown for the night watch on a merchant ship to be less than fully alert, particularly in a remote area of the ocean. It also seems possible that the merchantman's crew were alert but simply did not see the two German ships.
Langsdorff had a different theory and made an extensive entry in the KTB:
From previous experience it is improbable that an English ship heading for Freetown would be so far to the east … On the contrary, it seems probable that this is a German merchant ship that has broken out of a South American port that is trying to reach home by sailing through the middle of the South Atlantic far from all known shipping lanes.
He was certainly correct that there were several German ships in the south Atlantic at the time. To give just two examples. A cargo-liner, SS *Adolph Woermann*, was found by the British in mid-Atlantic on 22 November and scuttled herself.[16] Another ship, the liner SS *Windhuk*, managed to evade capture in the south Atlantic for two months and eventually entered Santos harbour in Brazil on 7 December 1939.[17]
This incident on 6/7 December remains baffling and nobody has ever found a satisfactory explanation. It seems reasonable that if the crew of the mystery ship had realised that they were passing a warship and even if the Master decided not to send a signal about it, then at least one of the crew would have mentioned it either on arrival at their next port or at some time in the succeeding seventy years. But there has never been even a whisper.

Change of Destination

Langsdorff's original destination on the South American coast was Santos Bay. This is a fine natural harbour with a mouth twenty miles (thirty-two kilometres) wide, some 200 miles (322km) south of Rio de Janeiro. His calculation was that British merchant ships sailing from the Plate area would stick close to the shore, either staying within the three-mile limit, or just outside it so that they could run to shelter inside it if threatened by his ship – which was what Captain Dove in *Africa Shell* had tried to do. Then, so Langsdorff's calculations ran, when they reached Santos Bay, instead of going inside in order to remain within the three-mile limit, they would cut across and he would catch them there.

Attacking *Doric Star*

Prior to attacking *Doric Star*, Langsdorff's standard operating procedure was to approach the victim head-on, at maximum speed and flying the French ensign. On this particular occasion he had the additional fact that his ship had been disguised by the addition of a third turret and second funnel and he should have been able to get very close before anyone on *Doric Star*'s bridge realised he was an enemy. Indeed, although Langsdorff was not to know that until afterwards, before the first round arrived nobody aboard *Doric Star* had even realised that *Graf Spee* was anywhere near. Even after the second shot had been fired all that the officers on *Doric Star*'s bridge could see was the very top of *Graf Spee*'s control tower on the far horizon.

When *Doric Star* broadcast her raider report, both that ship and the listeners aboard *Graf Spee* were convinced that a number of shipboard radio stations had received and acknowledged the signal and assumed that all would have passed it on. In reality, only one ship, SS *Port Chalmers*, a Port-line ship and, like *Doric Star*, on the New Zealand–UK run, re-transmitted the message and did so on several occasions, until it appeared to have been acknowledged by an unidentified shore station at 1417. However, it was not until 0007 the following morning that shore stations started to broadcast the sighting report, as retransmitted by *Port Chalmers*, the first time that it was realised that the mysterious raider had returned to the south Atlantic.

The unfortunate Arado seaplane seems to have exercised a malign influence at every stage of this voyage. On this occasion not only had it flown off in totally the wrong direction to be involved in the action with *Doric Star*, but its technical fault and landing meant that Langsdorff had to curtail the activities of the boarding party, thus preventing the discovery of the cargo of refrigerated meat which would have been of great benefit to the sailors' diet, but also of carbonic acid.

Notes

1. Curiously, Captain Starr of *Tairoa* saw the false turret and stack when he was captured on 3 December but still thought that the *Graf Spee* was disguised as *Deutschland*, Millington-Drake p. 142.
2. *'… in Gegensatz zu unseren bisherige Taktik, nicht mehr feindlichen Schiffen auswicken, werden, sondrn wir werden mitnehmen, was mitnehmen geht, unter vollem Einsatz des Schiffes*.' Rasenack, op cit., pp. 110–11.
3. Bidlingmeier, p. 89.
4. Rasenack, op cit., p. 112.
5. *Totensonntag* (Sunday of the Deceased), the last Sunday before Advent, is the German national day for commemorating the dead.
6. Rasenack, op cit., p. 114. This latter was, in fact, incorrect, but the crew of *Graf Spee* were not to know that.
7. SS *Doric Star*; Blue Star Line; Captain W. Stubbs; completed 1921; 6,347grt; 531ft; 12kt.
8. Pope, *Battle of the River Plate*, p. 99.
9. Rasenack, op cit., p. 118.
10. SS *Tairoa*. Furness Withy; Captain W. B. Starr; completed 1920; 7,983grt; u/k; 12kt.
11. Transfers to *Altmark* included Captain Brown (*Huntsman*) and Captain Starr (*Tairoa*) who went to *Altmark* to be with their Lascars, a request which was put to, and promptly agreed by, Langsdorff.
12. Dau, *Unentdeckt über die Meere*, p.54. '*Während der Nacht hatten wir ein abgeblendetes Schiff gesichtet – vielleicht ist es ein englischer Kreuzer gewesen …*' (During the night we saw a blacked out ship – perhaps it was an English cruiser …')
13. SS *Streonshalh*. Captain J. J. Robinson; Rowland & Marwood Steamship; 3,895grt; 349ft; 9kt.
14. There is a significant difference in reporting this incident. Captain Robinson was always adamant that he had personally thrown the bags overboard from the port side (i.e. the opposite side to *Graf Spee*) and seen them both sink, while he shredded his routing instructions and mixed the bits into a can of paint. The Germans were equally firm that they had recovered one of the bags, which had failed to sink.
15. Rasenack, op cit., p. 169.

16. SS *Adolph Woermann*, completed 1922, Captain Burefind, 85576grt, 132m; 12 knots. The ship remained in Santos until being interned on Brazil's declaration of war on Germany on 22 August 1942.
17. SS *Windhuk*, completed 1936, 578ft, 18kt, 16,662grt.

CHAPTER 16

Prisoners

Langsdorff had now taken his last prisoners, so this makes a convenient point to examine the issue. In both world wars the Germans considered Allied merchant seamen to be valuable enemy assets, since they enabled their vast trading fleets, particularly those of the UK and USA, to remain at sea, bringing personnel, military equipment, ordnance and food supplies to beleaguered Europe. But the legal status of these men fell somewhere between combatants, such as naval personnel, and civilian non-combatants, and strictly speaking captured merchant seamen were not prisoners of war, but civilian internees. Thus, for most of the Second World War, the Germans accommodated them in a separate camp – *Marine Internierten Lager* (sailors' internment camp), usually abbreviated to 'Milag' – which was located at Westertimke, near Bremen, and which, by 1945, housed some 4,500 Allied seamen of various nationalities.[1]

The legal position of captured merchant seamen had first been addressed internationally in the latter half of the nineteenth century, when the Brussels Declaration (1856) and the Hague Conventions (1899 and 1904) were ratified. These laid down what were generally known as 'Prize Rules', which stated that passenger ships could not be sunk, while merchant ships could be sunk, but only once their crews had been removed and placed in safety. The victim's lifeboats were not, of themselves, considered 'a place of safety' unless they were close to land, although quite what was meant by 'close' was never defined.

The Hague Convention of 1907 took a different view, declaring that merchant seamen should not be detained but released as soon as practicable, provided they undertook not to engage in any further hostilities. That continued to be the legal position throughout the First World War although, in practice, belligerents treated them differently. As explained in Part One, German surface raiders did their best not to harm merchant seamen and either released them to a neutral port as soon as feasible or took them back to Germany.

Whilst still at sea captured merchant seamen posed particular problems for the captors. Numbers could be large, with the result that guarding, accommodating, feeding and providing medical support, sanitation and exercise posed severe problems. One answer was simply to leave them in their lifeboats to seek their own salvation, and this was the course normally adopted by submarines of all nations, which could not accommodate more than a very few extra people without having their operational efficiency impaired. Surface raiders, however, normally operated differently and by extrapolation Langsdorff set himself the following rules:

- In capturing an enemy ship he would take no merchant seaman's life unnecessarily.
- He would only open fire if a ship refused to obey clearly conveyed orders such as to stop, or, most importantly, to cease transmitting wireless messages.
- Priority prisoners were masters, chief engineers, radio officers, and chief refrigerating officers.
- Prisoners would be treated humanely and every reasonable measure taken to ensure their survival.

The first victim, SS *Clement*, was sunk on 30 September 1939 and all except two of the crew were allowed to take to the four lifeboats and given directions on how to reach the Brazilian coast, which was only some fifty miles away. Even though he knew that *Clement* had transmitted a distress call, Langsdorff also broadcast a message 'Please save lifeboats of *Clement* at 09° 04' South 34° 04' West' although, to confuse the British, it was signed off with the maritime call sign for *Admiral Scheer*. This was acknowledged by a Brazilian shore station. One of the lifeboats was picked up by a Brazilian ship, which landed the men at Maceio on 2 October, while the other three reached Maceio under their own means later the same day. The two individual exceptions were the *Clement*'s master and chief engineer, who were taken

aboard *Graf Spee*, where they were questioned but treated courteously at all times. *Graf Spee* summoned a nearby neutral ship, the Greek *Papalemos*, and, having obtained an assurance from the captain that he would not transmit news of *Graf Spee*'s presence in the area until his ship was 600 miles distant, the two British officers were transferred. They were released at St Vincent in the Cape Verde Islands on 9 October.

Newton Beech was captured on 5 October but her full crew was left aboard to operate under German orders so that the ship could be employed as an auxiliary. Thus, when *Ashlea* was captured and sunk two days later, her crew was put aboard *Newton Beech*. On 8 October, however, Langsdorff decided that *Newton Beech* was too slow and was impeding his operations, so he ordered that she should be sunk after all the prisoners aboard had been transferred to the *Graf Spee*.[2]

When *Huntsman* was taken on 10 October her crew of seventeen Europeans and sixty-seven lascars was temporarily left aboard, so that, like *Newton Beech*, the ship could be employed as a temporary auxiliary. At the 13 October rendezvous with *Altmark*, however, all *Huntsman*'s crew, plus the crews of *Newton Beech* and *Ashlea* were transferred to *Altmark*, leaving *Graf Spee* free. These were the first prisoners to be put aboard *Altmark*.

Victim Number Five was *Trevanion*, taken and sunk on 22 October. Her crew of thirty-three was temporarily taken aboard *Graf Spee* but transferred to *Altmark* on 28 October, in order to free the warship of prisoners, this time in order to enable her to operate in the Indian Ocean. During this somewhat unrewarding foray Langsdorff took only one victim, the coastal tanker *Africa Shell*, on 15 November. The crew was ordered into the lifeboats and told to row for the shore, which they reached safely. The only exception was the master, Captain Dove, who was taken aboard *Graf Spee* and remained there until released in Montevideo.

The next victim was *Doric Star* (2 December) with a crew of sixty-four Europeans, mainly Australian, who were all transferred to *Graf Spee* before the ship was sunk. The next day it was *Tairoa*'s turn, with eighty-four men, mostly lascars. By now there were 176 prisoners held aboard *Graf Spee:* twenty-nine officers in the midshipmen's accommodation; all the crewmen, plus two officers were in a section of the crew's quarters, and three wounded cabin boys in the ship's hospital.[3]

At the 6 December rendezvous all 142 crewmen were transferred to the *Altmark*, plus Captains Brown and Starr who had asked Langsdorff that they be allowed to transfer to the ship where their lascar crews were being held. The remaining twenty-seven officers, plus the three wounded cabin boys, were retained on the *Graf Spee*.

On 7 December *Graf Spee* captured and sank her last victim, *Streonshalh*, whose eight officers and twenty-three crew were held aboard *Graf Spee*, four with the other officers, the remainder in the crew's quarters.

After these various transfers, the position on the day of the battle was that there were sixty-one prisoners aboard the *Graf Spee*. Of these, thirty-four were in the midshipmen's quarters and twenty-seven below decks in the crew's quarters.[4] The remaining 299 were aboard *Altmark*.

Treatment aboard *Graf Spee*

Treatment of prisoners aboard the *Graf Spee* can best be described as firm but fair. Langsdorff met every captain within minutes of him being brought aboard and his words to them almost always indicated regret that their ship had to be sunk, but that it was necessary for the prosecution of the war. Captured men were always allowed to remove their personal property from their ship before it was sunk, although chronometers and sextants were confiscated, but usually against a receipt. Cargoes and ships' equipment were, quite legitimately, regarded as spoils of war.

Accommodation aboard *Graf Spee* was cramped, but probably little worse than for the ship's

own crew. Langsdorff laid down that the prisoners were to be served exactly the same food as his own crew but less the 'active service supplement', which meant that they received the same as a civilian in Germany – see Table on page 110. The man responsible for the prisoners was Master-at-Arms Albert Jerichow who, by all reports, conducted himself with correctness and the occasional touch of heavy-handed humour. He seems to have tried his best to make their lives at least bearable and was described by one British officer as 'a very decent fellow'.

Also, unless *Graf Spee* was being replenished from *Altmark* or engaged in talking a prize, the prisoners were allowed regular exercise on deck and they were given books in English to read.

Treatment aboard *Altmark*

When the prisoners were released from *Altmark* in Jøssingfjord and returned to the UK they were loud in their condemnation of their treatment aboard *Altmark* in general and of Dau in particular, and the latter has suffered from a hostile Press in former Allied countries ever since. The first thing to be said in Dau's favour is that the alternative – for the captured men to have been abandoned in their ships' lifeboats – would have been infinitely worse and those whose ships had been taken in mid-Atlantic would inevitably have undergone considerable privations, and their prospects of survival would, at best, have been doubtful.

One of the major difficulties Dau faced was that he and his crew were considerably outnumbered by their prisoners, even including the *Kriegsmarine* detachment of twelve men under *Leutnant-zur-See* Smitt-Urquart. Not just that, but virtually every one of the prisoners was an experienced seaman, which meant that they would have quickly found their way around his ship and could have run it if they had managed to seize control.

One particular source of friction was that Dau strictly limited the places where smoking was permitted, which was scarcely surprising aboard a tanker, carrying large amounts of fuel of various types, as well as explosives. His view may also have been reinforced by the fact that he had personal experience of a fire aboard one of his ships in the 1930s. Thus when one British captain was caught smoking a cigarette in an unauthorised area he was hauled in front of Dau and promptly sent to the isolation cell for several days.

Dau kept officers in one location, European seamen in a second and Asian crew in a third, and communication between the three groups was virtually impossible. This effectively prevented co-ordinated attempts at taking over the ship, except for one occasion on the night of 15 February 1940, when a Norwegian Navy officer was on board and the officers attempted to break out but were held at bay by fire hoses. The Germans then turned off all lights making it impossible for the prisoners to carry on trying to escape.

Daily rations per prisoner aboard *Altmark*[5]

English	German	Imperial ounces	Metric grammes
Bread (Black)	Brot	1.9	55
Meat	Fleisch	4.5	125
Butter	Butter	1.4	40
Legume, rice or vegetables	Hülsenfrüchte, Reis oder Gemüse	3.5	100
Coffee	Kaffee	0.7	20
Sugar	Zucker	0.9	25
Sliced bread	Brotbelag	2.6	75
Dried potatoes	Trockenkartoffeln	2.1	60
Tea on request	Tee nach Bedarf	0	0
Total		17.6	500

With the benefit of hindsight it seems clear that Dau had little alternative to imposing strict control over his many prisoners. He was by nature a stern and humourless man and this undoubtedly served to make his prisoners dislike him. However, he had a job to do and did it well.

Passenger Ships

By chance rather than design, one problem Langsdorff never had to face was what to do with an Allied passenger liner, or, indeed, what to do with women and children had there been any aboard the ships he did capture. In the case of a passenger liner it seems probable that he would have stopped and searched it for contraband goods and serving members of enemy armed forces, as he was perfectly entitled to do under International Law. The British, for example, intercepted the Japanese liner *Asama Maru* on 21 January 1940 and removed twenty-one Germans of military age, who were taken to Hong Kong for internment.[6] Having conducted his search and any removals Langsdorff would almost certainly have then allowed the liner to continue.

In the second case (i.e. women or children aboard his captures) he would have been faced with a dilemma. He could have released the ship to continue its voyage, but in that case he would have failed in his mission to destroy enemy shipping and goods. Alternatively, he could have taken the women and children and held them aboard either *Graf Spee* or *Altmark* until he could transfer them to a neutral ship. But, fortunately for him, the problem did not arise.

Notes

1. Royal Navy prisoners of war were held in *Marine Lager* (Marlag) which was adjacent to but physically separated from Milag.
2. Officer in command of the guards was *Leutnant-zur-See* Smitt-Urquart who, in pre-war days, had regularly stayed in the UK with the English branch of his family and thus spoke excellent English.
3. All the midshipmen had been commissioned as *Leutnant-zur-See* when *Graf Spee* sailed, so their previous accommodation was now free.
4. The three wounded deckboys from *Tairoa* had been discharged from the sickbay on 13 December and moved in with the officers.
5. Source. Dau, *Unentdeckt über die Meere*, p. 35.
6. The intercepting ship was the cruiser HMS *Glasgow* and the incident took place only thirty miles off the Japanese coast. It developed into a major diplomatic incident, but the British stood firm, although they did eventually agree to return nine of the Germans as a face-saving gesture.

CHAPTER 17

The Mid-Ocean Meeting

Narrative

Dawn on 13 December 1939 was at about 0540 and found *Graf Spee* proceeding at a speed of 15 knots on a bearing of 155 degrees (i.e. south-south-east) some 290 miles east of the mouth of the River Plate. It was, in all respects, a perfect day: the sea was smooth, the sky clear and visibility at least twenty miles. Langsdorff's intention was to maintain this course and speed until 0600 when he would alter course to 335 degrees to continue the search for enemy merchant ships leaving the River Plate. The only immediate problem was that the Arado aircraft was unable to undertake its usual dawn patrol as the engine was, once again, out of action.

The latest known intelligence report from SKL in Germany had been received on 4 December, which stated that the RN force off the South American coast (i.e. Brazil, Uruguay, Argentina) comprised two heavy cruisers – *Cumberland* and *Exeter* – and two light cruisers – *Ajax* and *Achilles*. An update on 9 December stated that *Achilles* had been in Montevideo, but had left.

At 0552 a lookout on the *Vorturm* spotted two masts on the horizon, the watchkeeper was informed and he told the optical rangefinder crew to be alert in that sector. The optical rangefinder crew reported the range as being some 31,000m (35,760 yards = 20.3 miles) fine on the starboard bow. The target was suspected to be a cruiser.

The Chief Navigating Officer, Wattenburg, immediately went to the captain's sea cabin in the bridge tower where Langsdorff had spent the night. The captain's response was to order him to maintain current course and speed and to call Action Stations, whereupon Wattenburg, as he was duty bound, reminded his captain of the order to avoid even inferior enemy forces. Langsdorff's reply was that he suspected that the cruiser was protecting a convoy and that if it came direct for him 'it would make a fine target'.[1]

Graf Spee was cleared for action by 0600, at which time the optical range-finder crew reported that there were now three ships, proceeding on an easterly course in line-ahead. The larger ship was quickly and positively identified as the British heavy cruiser *Exeter* while the other two, due to their low superstructures and single funnels, were identified as destroyers.

Having dressed, Langsdorff ascended to the *Vorturm* in order to have the best possible view. His immediate assumption was that this force was acting as a screen for a convoy – and, in accordance with his previous plan – he decided to engage, ordering maximum speed and a slight change of course so that he could come within range as quickly as possible. He also considered it very probable that the enemy had already seen him, which meant that if he was to turn to escape they would be able to shadow him until heavier units could be brought up to deal with him.

When the diesels accelerated to full speed they gave off a plume of black and yellow smoke. This may have been either a natural consequence of accelerating or due to the worn nature of the engines (or a combination of the two) but, whatever the reason, it was the first indication to the British that there was an unknown ship approaching.

Then, at 0610, the sighting report was amended. It was confirmed that the leading ship was *Exeter* but the two slightly smaller ships were now identified as Leander-class light cruisers. By now the two sides were heading towards each other at their respective maximum speeds and battle had become inescapable.

Analysis

Graf Spee spotted the enemy masts on the horizon at 0552 on a day when the weather was perfect and likely to remain that way. This meant that there were some fourteen hours of

daylight ahead. There then followed a period of some minutes during which Langsdorff was told that he faced *Exeter* and two destroyers, a force well within his capabilities, but the information he was given was incorrect and merits examination.

Graf Spee had been specifically informed by SKL on 4 December that four British cruisers were known to be operating off the South American coast: *Achilles, Ajax, Cumberland* and *Exeter*.[2] This message did not include any destroyers. This is not to say that there might not have been others, but that these four had been positively identified. What Langsdorff could not know, of course, was how the British commander had deployed his ships; i.e. whether he had spaced them along the very extensive South American coastline to give the maximum surveillance coverage, or had concentrated them.

The first enemy warship to be seen in this encounter had two vertical funnels, a large, square bridge structure, three large gunhouses, and two tripod masts; it was quickly and correctly identified as *Exeter*. The second of the ships they were expecting to see was *Cumberland*, which would have been instantly recognisable, as she was the largest, had four turrets, but, most important of all from the recognition point of view, three particularly tall funnels. Thus *Cumberland*'s presence was quickly and correctly ruled out. However, the initial classification of the other two as destroyers – which was crucial to Langsdorff's decision to attack – was not only incorrect but remains difficult to understand.

The most prominent initial recognition features of the other two ships were that each had two prominent tripod masts, a single, vertical funnel, with a squared-off top, four large enclosed gunhouses, and a crane amidships. But, the only single-funnel destroyers in service with the Royal Navy in 1939 had a funnel which was at an angle, three small gunhouses, open at the rear, and no crane. Not only that, but single funnel destroyers were a very new development in the Royal Navy (all their predecessors had two) and in December 1939 the only such destroyers in service were the brand-new J- and K-classes. The J-class, eight ships, were commissioned between April and September 1939 and were all allocated to the 7th Destroyer Flotilla of the Home Fleet. The very similar K-class were being completed from August 1939 onwards. Although not impossible, it was extremely unlikely that any of these brand-new destroyers would have been deployed to the South American station.

Additionally, the two enemy ships were almost as large as *Exeter* – 554-feet long compared to 575 feet, which made them significantly longer than any existing destroyer, typically 356 feet, a difference which should have been obvious through *Graf Spee*'s powerful rangefinder. Finally, and most telling of all, *Graf Spee* had been specifically warned to expect *Achilles* and *Ajax*. There had been earlier mention of two destroyers, *Hero* and *Havock*, but these were of the two funnel H-class.

It should also be noted that the three British ships were in line ahead and *Graf Spee* was approaching almost at right angles so had a good view of their major characteristics. Thus, whilst admitting that identifying ships at long range is not without its problems, it is difficult to understand this particular instance.

Indeed, had the two Leander-class cruisers been correctly identified sooner, it would have given Langsdorff an extra few minutes. This is not to say that he might well not have changed his actions, but he would at least have had an opportunity to consider alternatives. As it was, by the time the two ships had been correctly identified, he was already irreversibly committed to battle.

An essential part of any military 'appreciation of the situation' is the 'courses open to the enemy' and it would appear that Langsdorff may not have properly thought this through. His own experience aboard *Grosser Kurfürst* at the Battle of Jutland in 1916 had shown that British cruisers and destroyers were fully prepared to attack ships much more powerful than themselves. There was also the very recent example on 23 November 1939 – and about which

Langsdorff knew from radio broadcasts – where the armed merchant cruiser HMS *Rawalpindi* had attacked the two German battlecruisers *Scharnhorst* and *Gneisenau* despite the gross disparity in armament and protection. Further, with his well-documented study of and admiration for the Royal Navy, he should have been familiar with its tradition of attacking virtually regardless of the odds, in the Nelsonian tradition of 'No captain can do very wrong if he places his ship alongside that of the enemy'.[3]

The second crucial action at this point was for Langsdorff to go to the foretop. This certainly gave him excellent all-round observation, and far better than being in the conning tower (*Kommandostand*) or the navigation bridge, but it meant that he was protected only by a waist-high thin steel coaming. He was accompanied by his adjutant, *Leutnant-zur-See* Diggins, but the communications facilities were not good and the remainder of the ship's battle staff were either on the navigation bridge or in the conning tower, apart from the Gunnery Officer in the foretop and *Kapitän-zur-See* Kay, who, as second-incommand, was in the after control centre.

Finally, he would have known from *Jane's Fighting Ships* (which he was known to possess) that *Exeter* carried two aircraft, and *Ajax* and *Achilles* one each.[4] Thus, even if he turned away, the British would have launched their aircraft and would almost certainly have been able to track him, whilst also broadcasting his exact position to all the British and French major units waiting for news of his whereabouts. Further, as an experienced seaman, he would have known that the British ships would be well maintained with clean bottoms and likely to be capable of speeds at or near their published figures of 32 knots, *Exeter*, and 32.5 knots, *Ajax* and *Achilles. Graf Spee*'s hull, on the other hand, was heavily overgrown and her maximum speed through the water on this day was a little under 25 knots.[5]

One factor he could not have known was the British ships' fuel states. He had been told by SKL that the oiler *Olynthus* was in the area, but he had no means of knowing when each of the three cruisers had last replenished and thus for how long they might be able to pursue him.

Did Langsdorff Have Any Alternatives?

Could Langsdorff have avoided action? He certainly could have reversed his course and headed back out into the Atlantic. *Graf Spee* was capable of a very tight turn and he might just have got away with it undetected if he had been quick enough. This could not have been construed as 'running away' since he was specifically instructed in his original orders to avoid engagements with enemy warships.

But, even if he had been detected, the British ships were well behind and their margin of speed was not all that great. Thus, if they had approached within range of his 28cm guns he should have been able to hold them off until nightfall, when darkness might have enabled him to escape altogether. Alternatively, rather than escape, he might have used his radar – which the British did not possess – to take one of the enemy by surprise and eliminate it.

One of the reasons he gave for not attempting it was that the nights were long and clear with a bright moon. In fact, according to a Royal Navy officer present at the time, there was no moon at that period, although there had been excellent visibility on the night of 6/7 December when the mystery ship had been clearly visible.

Until the morning of 13 December Langsdorff had consistently followed his orders to avoid any engagements with enemy warships. On this occasion, however, he did not do so. The reasons were, first, that he was on his way back to Germany, as the engines were in desperate need of an overhaul, the ship's bottom was heavily encrusted with marine growth, and the crew was getting tired. Secondly, he knew that he was approaching a focal point on the British convoy system and believed that the cruiser was protecting a major convoy. He also believed that once one or more British ships found him they would then shadow him, out of range of his 28cm guns, while they called in superior forces to annihilate his ship. He knew that they did not have radar, but in the southern hemisphere the days were normally remarkably clear and the nights

moonlit, so that visual tracking would very probably prove successful. In addition, most British cruisers had scouting aircraft. Finally, there was a feeling among many of the crew – which Langsdorff seems to have shared – that *Graf Spee* was a magnificent ship of a superior design, and had not been allowed properly to prove itself, while all the successes so far had been due to overwhelming military force against virtually powerless merchant ships. All these, and possibly more, factors would have passed through his mind in the very few minutes available to him: to turn or to accept battle? It was his decision alone and he chose the latter.

Notes

1. Millington-Drake, op cit., p. 174.
2. The Germans had observers in most South American ports, who were there quite legitimately, either as embassy or legation staff, or as members of a commercial company. The British ships entered South American ports regularly, albeit within the limits of the Hague Convention.
3. Nelson's instructions to his officers before Copenhagen (2 April 1801).
4. A fact which would not have been known to Langsdorff was that *Achilles* had disembarked her only aircraft in New Zealand. But *Cumberland*, which he knew to be somewhere in South American waters, had three aircraft.
5. Millington-Drake, op cit., p. 187.

CHAPTER 18

The Battle Narrative

The shooting phase of the battle lasted just one hour and twenty-three minutes; from 0617, when *Graf Spee* fired the first salvo at *Exeter*, until 0740 when *Graf Spee* fired a salvo at *Ajax* and then disengaged, heading towards the River Plate. Not surprisingly, there are minor differences between the German and British accounts of the actual times and detailed sequence of events; what follows is based on the German version.

It should be noted that both the *Graf Spee* and the British ships frequently deployed man-made smoke to give them short-term protection. This was combined at certain periods with smoke from fires aboard some of the ships. The consequence was that since there was very little wind to disperse the smoke, at certain times ships lost sight of each other. However, there was a definite advantage in being to leeward of the enemy.

Having seen the British ships, *Graf Spee* headed towards the enemy and the first indication the Germans had that they had themselves been seen was when they saw signal flags flying on the enemy ships, following which *Exeter* hauled out of line to head straight towards *Graf Spee*. The two ships now closed on each other at a combined speed of some 44 knots (50mph/80km/h). At 0617, with *Exeter* ahead and to starboard, *Graf Spee* opened fire at a range of 22,500 yards (20,600m), with *Exeter*'s first salvo being fired in return at 0620, by which time the range was down to 18,400 yards (16,800m). Matters did not start with smooth precision aboard *Graf Spee* as, when the Gunnery Officer issued the first order to fire, it was discovered that Turret Anton would not turn, although this was quickly fixed.[1]

For this first period of the battle Langsdorff concentrated on *Exeter*, whilst keeping a wary eye on the two light cruisers. *Graf Spee*'s third salvo straddled *Exeter*, scoring several hits and doing considerable damage.[2] At 0632 *Exeter* fired her starboard torpedoes, which *Graf Spee* avoided with ease at 0634.[3] Matters were not, however, going all one way and *Exeter* scored several hits on *Graf Spee*, the Germans being surprised by the rapid rate of fire, and by the fact that one round went straight through the armoured belt to explode deep inside the ship, even though it had been thought that the belt would be impregnable to anything other than a battleship's main guns. The other side of the coin was that another 8-inch round simply went straight through the bridge without either exploding or causing any damage.

At about 0634 Langsdorff altered course to the north-west in order to keep *Exeter* within the arcs of both 28cm turrets, while still keeping the two light cruisers abaft his starboard beam, in order to prevent them from launching their torpedoes. Several minutes later (0636) *Graf Spee* made the first of several dense smokescreens.

At 0637 observers aboard *Graf Spee* saw *Ajax* launch its Seafox floatplane which flew around for the remainder of the battle. It was clearly acting as a 'spotter' to correct fall of shot, but there was little *Graf Spee* could do about it except to fire its AA guns on the few occasions that the aircraft came within their range.

At 0638 *Exeter* fired its port torpedoes, which, again, *Graf Spee* evaded and at about 0640 *Graf Spee* saw two severe hits on *Exeter*. By now *Graf Spee* was heading on a bearing of approximately 260 degrees; i.e. due west, and for the first time it switched targets to fire at *Achilles*.

By 0700 Langsdorff could see that *Exeter* was seriously damaged and listing to port, and the British ship then generated more smoke to give itself some respite. *Graf Spee* also made smoke to deter the light cruisers, which began an approach to very short range with the obvious intention of diverting his attention away from *Exeter*.

By 0710 the light cruisers were now at very close range, forcing Langsdorff to make repeated and frequently violent changes of course to frustrate any torpedo attacks. This succeeded, but these unexpected turns threw off *Graf Spee*'s own gunnery.

Exeter was hit yet again at 0715 and once more disappeared behind smoke but, to all intents and purposes, the ship was now eliminated as a fighting unit. Also at this time there was a short period when *Graf Spee*'s fire became disorganised due to the failure of an order to reach the rangefinders. As a result shells went over or short of the light cruisers being targeted, which by 0716 had reduced the range to some 10,000 yards (9,150m). *Graf Spee* seized this opportunity to attempt its own torpedo attack but only one was actually launched as Langsdorff chose that moment to order yet another violent and unexpected change of course.

At 0720 *Ajax* and *Achilles* turned to bring all main armament to bear and scored numerous hits on *Graf Spee*. In turn *Ajax* was hit by several 11-inch rounds including one at 0725 which put both X and Y turrets out of action. Meanwhile, at 0724, *Ajax* launched four torpedoes, which were detected by *Graf Spee*'s sound-locating station at 0728 and the ship turned away to present its stern.

At 0730 *Graf Spee*'s guns again took up the running fight but, at 0732, another warning of a torpedo attack forced Langsdorff to turn away. At 0736 Langsdorff altered course to the south-west and two minutes later the two light cruisers came in close again, this time to some 8,000 yards. At 0740 *Graf Spee* fired a salvo at *Ajax* and the two British ships then made smoke and clearly turned away. With this the battle phase ended and Langsdorff settled his ship on a course of south-west towards River Plate at a speed of 22 knots. The two British light cruisers allowed the range to open up and then took up what were clearly shadowing stations, *Achilles* on *Graf Spee*'s starboard quarter and *Ajax* to port. Thus, with the three ships heading south-westwards and *Exeter* limping off towards the Falkland Islands, the actual combat phase of the Battle of the River Plate was concluded.

Brief mention should, however, be made of the unfortunate British merchant navy captains locked inside the deckhouse under the aircraft catapult. They had received no information during the battle and had only been able to peep out through a small hole, but, astonishingly considering the damage and carnage around them, they suffered not a single casualty.

Analysis

Langsdorff

As described earlier, large German warships of the 1920s and 1930s were fitted with a foretop (*Vorturm*), a platform which surrounded the Control Tower just below the level of the rotating rangefinder/radar cupola. In *Graf Spee* this octagonal platform was about three feet wide at front and rear, and about five feet at the sides. It was surrounded by a chest-high mild steel plate to give some protection against the weather. Visibility was excellent but communications minimal.

It is self-evident that any captain is in sole command of his ship, particularly in battle. However, the captain on the bridge or in the command centre has access to outputs from plotting tables, properly-installed and tested communications links to key points within the ship, and other mechanical aids. He will also receive regular information updates on damage, ammunition states, fuel state, and so on. Apart from information he will receive occasional advice or suggestions from his most important subordinates. In this case, the latter would also have had even a fractional foreknowledge of his decisions to turn, thus possibly enabling the guns and torpedoes to be handled more effectively.

It is well understood that Langsdorff chose to stand on the *Vorturm* because that was the only place from which he could see all three opponents. This was due in part to the British split of their forces into two widely separated divisions, but the design of the German ship was also a

factor. There was, however, an alternative, namely the navigation bridge (*Navigatsionsbrücke*) which was in the tower structure behind and two deck levels above the armoured command post. This was used for all normal peacetime and noncombat situations and could also be used for night operations. This was fitted with all the necessary controls and communications systems, and was protected by light armour. Langsdorff's concern on 13 December, however, was that the view abaft the beam was poor, and astern was blocked by the superstructure, although there were flying bridges on either side.

There is no evidence that the *Vorturm* had ever been designed for use as a command centre, nor is there any mention of it being used as such in a training exercise. It thus appears that Langsdorff's decision was made on the spur of the moment. Indeed, one possibility is that Langsdorff may not have intended to conduct the battle from the Vorturm at all, but that he went up there initially in order to see what was going on and then, once the battle had started, he never managed to get away.

So, by taking up position on the *Vorturm* he gained in all-round visibility, but he had only one officer with him, his flag lieutenant, Diggins, and his communications were limited to telephones. Thus, with no mechanical aids, no plotting table, and no advisers close at hand the entire conduct on the day itself took place in his brain.

Langsdorff's flag lieutenant states that his captain stood unflinching on the *Vorturm*, puffing at his pipe, and refusing to take cover. He was wounded three times. The first two were from shell splinters: one to the shoulder, the second to an arm. In both cases he bled profusely, but refused any treatment other than an emergency dressing. On the third occasion, however, the blast from a shell knocked him to the deck and he was unconscious for several minutes. The precise moment at which he was knocked out and the length of time he was incapacitated have never been established, but it was certainly long enough for those with him on the *Vorturm* to call for Kay to come up to assume command. By the time he arrived, however, Langsdorff had regained consciousness and insisted on retaining command.

There is a general consensus among those closest to him that his attitude changed once he had regained his feet after the period of unconsciousness and it seems likely that he was suffering, however temporarily, from mild concussion. One consequence of this was the frequent changes of course he ordered without any warning to the gunnery or torpedo officers.

The fact was that the *Vorturm* gave excellent visibility, especially when the British ships split into three and Langsdorff was able to see all three. He was certainly poorly protected, but in this he was little worse off than the captains of the three British ships. Captain Bell of the *Exeter* was one of only three survivors of his bridge team from a hit early in the battle, while Captain Parry of *Achilles* was slightly wounded by a near miss. The most significant point about this is that Langsdorff was temporarily concussed and this may have affected his judgement when deciding what to do.

Gunnery

One of the oft-restated benefits of the 11-inch (28cm) guns was that they could compel a faster ship to stay out of range. The maximum range of *Graf Spee*'s guns was 38,280 yards (35,000m) but even though *Exeter* was first seen at a range of 35,760 yards (31,000m) the British ship was, nevertheless, allowed to close to 22,500 yards (20,600m) before the first German salvo was fired. Indeed, it was only three minutes later that *Exeter* was able to open fire herself.

During this phase of constant engagement, the Germans always fired the two 28cm turrets at the same target.[4] This meant that the big guns were engaging either *Exeter* or one (but never both simultaneously) of the two light cruisers, and apart from turning to avoid torpedoes the major changes of course were in order to enable both turrets to bear on a particular target.

Gunnery Effectiveness

During the battle the *Graf Spee* fired a total of 414 28cm shells of which eight were hits on the

Exeter and two on *Ajax*.

***Graf Spee*: Ammunition Expenditure**

Type	Intended target	Intended effect	Original stock	Number Fired	Balance remaining
Nose fuze	Lightly armoured targets	Explode on impact	200	200	0
Base fuze	Lightly armoured target	Penetrate before exploding deep inside the ship	200	184	16
Armour-piercing	Heavy armour	Penetrate armour before exploding	200	30	170
Total			600	414	186

The choice of the correct shell for the intended effect was crucial and the table above does not tell the full story, since the armour-piercing shells were only used towards the end of the battle, and then only against the light cruisers, because there were no more nose-fuzed shells remaining. *Graf Spee*'s Gunnery Officer did not use armour-piercing (AP) shells against *Exeter*; had he done so that ship might well have been finished off much earlier. It would seem that either he underestimated *Exeter*'s armoured protection or he deliberately held back on AP shells against possible future use, for example, against the battle-cruiser *Renown*.

Graf Spee's 15cm guns fired a total of 377 shells, of which not one scored a direct hit, nor, as far as is known, even a near miss. The crews of *Ajax* and *Achilles* mention detecting 15cm shells landing in the sea, sometimes at considerable distance from their presumed target. This has been attributed in part to the failure of an inclinometer and also to damage to the ammunition supply mechanism, but these cannot be the complete explanation for what was, in effect, a dismal failure.

***Graf Spee*: Incoming Rounds from British Ships**

Type	Intended target	Intended effect	Calibre	Number fired
Common Pointed Ballistic Capped	Medium armoured targets	Penetrate before exploding deep inside the ship	8in	Ca 200
			6in	2,044
High Explosive Nose fuzed	Lightly armoured target	Explode on impact	6in	16
Practice	None	Guncrew training	6in	1

Graf Spee suffered nineteen direct hits: three from *Exeter* (8-inch) and sixteen from *Ajax* and *Achilles* (6-inch). One of the 8-inch shells from *Exeter* hit the armoured belt below the tower and penetrated the (140mm) armoured belt and a further armoured bulkhead. This showed the Germans that the publicity statement that their ship was proof against all but battleship guns was erroneous. However, this also shows that Langsdorff's decision to eliminate *Exeter* first was correct. The practice shell was fired at a time when there was a brief delay in *Achilles*' B turret and the shell happened to be in the ready-use rack so was fired anyway. It caused two

deaths and some damage, so was not wasted.
German reports considered the 6-inch shells to have been somewhat ineffective and suggested that nose-fuzed shells would have done more damage. This may well be true but it is inescapable that the cumulative effect of the 6-inch shells was sufficient to force *Graf Spee* into Montevideo.
There were regular reports from both sides that near misses and the resulting splinters caused a lot of casualties and much minor damage, cutting through thin plates and windows, ricocheting around enclosed spaces, cutting cables, etc. Such 'near misses' would not, of course, appear in the direct hit statistics.
One method of calculating combat effectiveness in a naval battle such as this is to express hits as a percentage of the total numbers fired, with the expectation of a figure of four per cent. However, this ignores the effect of near misses, as mentioned above, and also those hits which cause little or no damage; both sides in this battle pointed to incoming rounds which simply passed straight through the ship and exploded over the sea on the far side. Thus, in general, *Graf Spee*'s 28cm gunnery against *Exeter* was effective in that it disarmed the heaviest British unit and drove it from the scene of battle. On the other hand, *Graf Spee*'s 28cm gunnery against *Ajax* was of only limited effect in that, while X and Y turrets were knocked out, the ship remained combat effective. *Achilles* suffered only the most minor damage and remained fully combat effective. The 15cm gun batteries were totally ineffective.

Decision not to finish Exeter

Once the three enemy ships had been positively identified, it was clear that the most dangerous was *Exeter*, with her six 8-inch guns. Thus Langsdorff's main tactic was to attempt to hold off the two light cruisers while using his main armament to destroy, or, at the very least, neutralise, *Exeter*. He should then be able to deal with the much more vulnerable light cruisers.
By about 0700 *Exeter* was in a very bad state and this was clearly seen to be so from *Graf Spee*. When Langsdorff met Captain Dove on the morning of 14 December, the English captain reported that:
Then his great admiration for the men of *Exeter* bubbled over. 'They were magnificent, splendid fighters. With my salvoes I put out of action their forward guns. I smashed the bridge. But they turned to fight me with only one gun. Long after I thought I had put them out of action they came back at me. When you fight men like that you cannot feel any enmity, you can only want to shake hands with them. You English are hard. You do not know when you are beaten. The *Exeter* was beaten but would not know it.'
[5]
The situation was even worse than pictured by Langsdorff. Over fifty men were dead and many more wounded. A and B turrets (forward) were out of action, while Y turret (aft) was still firing, but only in local control, and was reduced first to one gun and then at 0729 to none when the electrical supply to the turret was cut. The bridge and fire control apparatus were destroyed, the wireless and telephone systems inoperable. There were numerous fires and, due to flooding, the ship was down by the bows and listing to starboard. The steering apparatus had been destroyed and the captain was aft passing steering orders orally to the tiller flat by a chain of messengers. By some trick of fate, however, the engines were completely untouched and the ship's speed was undiminished, although beginning to slow slightly due to the flooding forward.
By this stage the perfect visibility was being affected by considerable amounts of smoke. Most of this was from deliberate smoke screens deployed by *Graf Spee* and *Exeter* but also from various fires. The pilot of *Ajax*'s aircraft, flying over the battle at some 3,000 feet (900m), thought that the British cruiser was actually about to sink.
Many Germans, including Hitler and Admiral Raeder, commented that Langsdorff should have finished off *Exeter*, and even British writers have observed that it would have been quite

proper for him to have done so. A possible clue is given by Rasenack.

Had it been known that the *Exeter* was no longer combat capable, then, in my opinion, the Captain would have completed a total destruction of this ship. But he was convinced that the *Exeter* would reappear on the field of battle at any moment and that our medium and light guns would not be sufficient to defend us against the light cruisers while our heavy guns sank the *Exeter*.[6]

Curiously, this seems to ignore any possibility that the 28cm (11in) turrets might be used separately against different targets. Langsdorff may also have become aware of the dismal performance of the medium guns and suspected that they would have had little success against *Ajax* and *Achilles*, except possibly at very short range. Indeed, he must have realised by now that nothing could be more certain than that the British light cruisers would have sought to prevent *Graf Spee* from destroying *Exeter* with everything in their power.

It is questionable whether Langsdorff would have been able to bring himself to administer the coup de grace – to pound *Exeter* with his heavy guns until it sank or hauled down the colours. Langsdorff died before he could offer any explanation of this particular decision, but it seems possible that he consciously decided not to sink her as he saw no point in further loss of life aboard what he took to be a stricken ship. Indeed, his failure to sink *Exeter* did not affect the situation one way or the other, since the badly damaged ship could play no further part in the battle and all it could do was to limp off towards the Falklands. Also, Langsdorff had much more immediate problems to consider: the continued attacks from *Ajax* and *Achilles*, and the damage to his own ship.

Notes

1. 'da erreicht mich die Meldung vom Turm A: "Rohre bewegen sich nicht mehr" Verdammte Sch' ('then I received a message from Turret A: "the barrels won't move anymore." Damned sh…' Rasenack, p. 137. Fortunately, Rasenack recalled not only that this had happened before but also how to cure it and despatched his Leading Mechanic to put it right.
2. A 'straddle' means that the rounds from a salvo arrive in a rectangular box, centred on the centre point of the target. The size of the rectangle varies with range but at 20,000m this might be of the order of some 600m × 150m. The area of the target will be less than that of the rectangle, which means that by no means all rounds will be hits.
3. Commodore Harwood's chart of the action shows a kink in *Graf Spee*'s track between 0620 and 0634. All German witnesses challenge this and aver that for this period *Graf Spee* followed a straight course.
4. The British were convinced that the two turrets fired, for at least some of the time, at separate targets, but this was due to a misunderstanding of the ranging methods used aboard the *Graf Spee*.
5. Dove, op cit., pp. 149–50.
6. 'Wäre zu erkennen gewesen, daâ der Exeter nicht mehr kampffähig ist, dann hätte der Kommandant meines Erachtens eine vollständige Vernichtung dieses Schiffes erzwungen. So ist et überzeugt, daâ der Exeter jederzeit wieder auf dem Schlachtfeld erscheinen kann, und bei der Gefechtslage ist es kaum möglich, die leichten Kreuzer nur mit unserer geringen Mittel- und leichten Artillerie abzuwehren, während die schwere Artillerie den Exeter niederkämpft.' Rasenack, p. 149

CHAPTER 19

Battle Damage

During the engagement Langsdorff's sole attention was on the battle itself, but once it was over he had a matter of minutes in which to decide what to do next, a decision which he, and only he, could make. At this point his ship was already heading south-westwards, but was still some 300 nautical miles from the outer limits of the mouth of the River Plate and not yet totally committed to any one particular destination. He must have realised that this would be a momentous and far-reaching decision. What is important is the evidence with which he was confronted and how he assessed the situation at that moment, not what damage may have been proved or disproved once the ship was in Montevideo; in other words, what appeared to him to be the case at sea at about 0800.

Enemy Situation

Langsdorff knew that *Graf Spee* had inflicted severe damage on *Exeter*, which had not been sunk but was effectively neutralised and already limping off to the south. From what Langsdorff could see, one of the two light cruisers had been hit and had lost both aft turrets (this was *Ajax*) while the other was undamaged and both appeared to be still in excellent fighting order. One had an aircraft, which was flying nearby but at a respectful distance, so this, too, must be in good order. He knew that Harwood had a tanker, RFA *Olynthus*, in direct support and could therefore anticipate that the two cruisers would be able to refuel and possibly also replenish their ammunition stocks.

Langsdorff had been told by SKL that Harwood's South America Squadron included *Exeter, Ajax, Achilles* and *Cumberland*. He knew exactly where the first three were, but had not seen *Cumberland*; nevertheless, he had to assume that she would be somewhere in South American waters and would be heading for the action. She was a heavy cruiser, armed with eight 8-inch guns, and carried two aircraft.

Langsdorff also realised that the British Admiralty would now know precisely where he was and would be assembling other forces to eliminate his ship. He did not know exactly where they were and which ships were involved, but he had good reason to believe that they included two heavily armed and fast battlecruisers, the British *Renown* and French *Dunkerque*, as well as the aircraft carrier *Ark Royal*.

When *Graf Spee* sighted the three British ships at 0552 she had been steering 155 degrees but Langsdorff had immediately altered course to 120 degrees to intercept. When Harwood split his force, *Graf Spee* had turned onto a bearing of about 340 degrees and had then tended towards due west (270 degrees) from about 0656 onwards. Thus, when Langsdorff was making his appreciation, his ship was heading south-westwards – and had been so for some fifty minutes – and the two surviving British light cruisers were to seaward, which meant that he would have to fight his way past them if he decided to reverse course and head east into the Atlantic, should he decide to make the attempt.

As built, the two British ships were faster than the German *Panzerschiff* (32.5kts versus 28kts), but the difference was even greater on the day of the battle. This was because *Graf Spee* had not had its bottom scraped since leaving Germany and the barnacle-encrusted hull now limited flank speed to about 23–25 knots. To make matters worse, sunset was due at about 2050 so there were about twelve hours of daylight remaining on a clear day with maximum visibility. Thus, Langsdorff's chances of evading or outrunning the cruisers were negligible and all they needed to do was to remain out of range of his heavy guns and report his position until heavier units arrived. They also had at least one aircraft, whereas he had none.

One major advantage that Langsdorff possessed and the British did not was the radar. The excellent rangefinder was far more valuable by day, but at night-time the radar gave at least an

indication that something was present and its bearing.

Own Situation

Even before the battle *Graf Spee* was suffering from a number of defects resulting from five months of constant steaming. This included the barnacle-encrusted hull, already mentioned, but also the diesel engines were beginning to present some major maintenance problems, particularly cracked cylinders and pistons. Some of the bases had split and there were continual difficulties with the packing glands.

Langsdorff was an extremely popular and highly respected commanding officer, and while many of his crew must have been shaken by their baptism of fire he had no reason to doubt their loyalty, nor that they would fail to accept whatever plan he formulated. A total of thirty-six men had been killed and approximately sixty seriously wounded. The former needed to be buried with proper dignity, while many of the latter were in urgent need of medical treatment, although the ship's doctors were confident they had sufficient staff and facilities aboard. The great majority of the dead and wounded were not irreplaceable, although the loss of both the pilot (*Fliegerunteroffizier* Bongartz) and assistant pilot (*Fliegerobergefreiter* Summerer) would have prevented the use of the second Arado even if it had been removed from the hangar and made serviceable.

Langsdorff's Inspection

As soon as he was able to do so Langsdorff left the bridge to inspect his ship, which was probably between 0745 and 0800, and what he found was clearly very discouraging. The lubricating oil purification plant was damaged, which was essential for the return to Germany. All baking and cooking facilities had been seriously damaged, except for the admiral's galley, but that was tiny and could never cope with feeding a thousand men. The associated auxiliary boiler was also destroyed. The fresh water apparatus was severely damaged. There was a hole some six feet square (2m × 2m) in the port bow which, if not repaired, would have serious implications on the seaworthiness of the ship in the rougher seas of the north Atlantic. Wireless direction-finding (DF) equipment was damaged, as was the port-side crane jib. The aircraft on the catapult was beyond repair and while the second was stowed below and, given time, might have been moved up, there were no pilots anyway.

***Graf Spee*: Ammunition Remaining**

Calibre	Nature	Initial holding	Expended	Balance remaining
28cm (11in)	Nose fuze	200	200	0
	Base fuze	200	184	16
	AP	200	30	170
15cm (5.9in)	ca. 1,000	377	ca. 643	
10.5cm	AA	ca. 3,000	80	ca. 2,920
Torpedoes		8	1	7

Both 28cm (11-inch) turrets and all six guns were serviceable, but it would appear that the pre-war planners' estimates of ammunition expenditure had been far too low, as the balance remaining was 186 rounds, which, to judge by experiences of the previous two hours, would be sufficient for about forty-five minutes firing. More telling than that, however, the vast majority of these were armour-piercing which, in most cases, would pass straight through the lightly armoured cruisers and explode harmlessly on the far side of the ship.

One of the 15cm (5.9-inch) guns in the port battery had been totally destroyed but the other seven were serviceable. The forward ammunition supply system had been unserviceable during part of the recent engagement, but had been fixed. However, there was the worrying fact, of which Langsdorff must have been aware (or, at least, suspected), that despite an expenditure of just under 400 rounds, not one hit had been obtained. Some of the 105mm (4.1-inch) AA guns had been destroyed or damaged, but their contribution to any surface battle could only be marginal and at very close range.

Having last replenished on 6 December and just fought a battle, *Graf Spee* was in desperate need of replenishment, particularly of fuel, lubricants and ammunition. *Altmark* was sheltering to the south, still undetected by the British. It seemed highly unlikely that the two ships could meet, but, even if they did, replenishment would require at the very least twelve hours at 3-4 knots and it was unlikely that the British would not find and destroy them.

Subjective Issues

There were several subjective issues whose impact could only have been explained by Langsdorff himself. The first was that he carried out his survey of the ship immediately after breaking off the action; i.e. at about 0800 hours. This was before all the dead had been taken away, the wounded taken to the sick-bay and attempts to clear up the damage started. Thus he was seeing the situation at its very worst. One of his officers, Rasenack, has given a useful eyewitness report of what he saw, like Langsdorff, immediately after the main engagement. He describes how 'none of the hits have destroyed anything important below the armoured deck, but above the armoured deck there is considerable damage … when I cross the main casualty station the floor is covered with blood.'[1] He also describes the chaos on the intermediate deck (*Zwischendeck*), with anything loose littering the floor, some sections under water, smoke and many unpleasant smells. In addition to all this, Lieutenant Grigat had lost both his legs when hit within a few feet of Langsdorff and the Captain had himself only just come to after a period of unconsciousness.

Langsdorff's personal courage is beyond dispute, but even though he had been in battle before, at Jutland, it seems possible that this carnage might have had some influence on his judgement. He was almost certainly suffering from concussion as a result of the blast that knocked him out.

Alternative Courses

Several possible alternatives were available to Langsdorff. First was Buenos Aires. The higher echelons of the Argentine Navy were known to be sympathetic to Germany, and there were excellent port facilities. However, to reach Buenos Aires would require crossing shallows with the danger of clogging-up the water coolers, and his Second Navigating Officer, Höpfner, had experience of the estuary during previous service with the merchant navy and advised against it.

Mar del Plata was a coastal resort on the Argentine coast some 400 kilometres (250miles) along the coast from Buenos Aires. It had a substantial artificial harbour, but no dockyards, although engineering facilities could have been made available in the town. The British would have been able to stand-off just outside the three-mile limit. An even more distant possibility was the Argentine Navy's major facility at the Puerto Militar at Bahia Blanca.

Graf Spee was due to return to Germany, anyway, so this could be hastened by heading north. But there was little likelihood of replenishing from *Altmark* and it would also mean facing the turbulent North Atlantic in winter in a less than ideal condition. Also, major British and, possibly, French units were known to be approaching from the north.

Heading south to Antarctica seemed a possibility and had the advantage of closing on *Altmark*. Some form of cooking would doubtless have been devised, but the lack of an oil purification plant and the increasing problems with the engines could have proved more problematical.

Decision

As with any decision, there is no doubt that there were alternatives open to Langsdorff but none of them were really viable. He, therefore, decided to head for the nearest neutral port where, he must have hoped, he could take on fuel, water and provisions, bury the dead, treat the wounded, and repair the worst of the battle damage. Thus while the British had come nowhere near sinking the *Graf Spee* they had nevertheless inflicted just sufficient deaths and damage to render the German ship unfit for further operations without going into port, while the two light cruisers could maintain surveillance for a protracted period.

As soon as he returned to the bridge, Langsdorff announced this decision. Some of his subordinates on the bridge privately thought that it was ill-advised, but felt constrained from discussing it openly. The one man who might have been prepared to express his views was Kay, but he was aft in the Damage Control Centre.

Note

1. Rasenack, op cit., pp. 149–50. An unexplained feature of this account is that he comments that the wounded do not complain even when being operated on without anaesthetic and fully conscious; '*schwere Operationen ohne Betäubung bei vollem Bewusstein vorgenommen werden müssen* …'. It seems improbable that *Spee* could have run out of anaesthetic so early in the engagement.

CHAPTER 20

The Run to Montevideo

Narrative

Langsdorff's decision to head for the Plate Estuary was made at around 0800, although *Graf Spee* had, in fact, been heading in a generally westwards direction since 0700. By then *Exeter* was limping towards the Falkland Islands and the two light cruisers had taken up shadowing positions, *Achilles* to the north of the German's track, *Ajax* to the south. Lookouts aboard *Graf Spee* could see that *Achilles* had lost both her rear turrets (X and Y Turrets in RN parlance) but otherwise appeared fully serviceable. *Ajax* appeared to be – and was – undamaged. Meanwhile, *Graf Spee*'s crew were engaged in finding and treating the wounded, assembling the dead, and in assessing and repairing damaged equipment.

Exchanges of Fire

The first exchange of fire with the British took place while all three ships were still well clear of the coast, when, at 1005, *Achilles* closed to 23,000 yards (21,000m). *Graf Spee* turned to enable both turrets to engage and fired two salvoes from each (twelve rounds). No hits were scored and *Achilles* dropped back.

At 1915, when off Lobos Island, *Ajax* closed to 26,000 yards (23,800m) and, again, *Graf Spee* turned and fired two salvoes (twelve rounds). As usual with the German gunnery, the first was correct for line, but short, and *Ajax* immediately turned so that the second salvo fell in her wake – and where she would have been had she not turned. *Ajax* did not reply but made smoke and disappeared from sight, so Langsdorff turned his ship back onto her original course for Montevideo.

At 2048, just as the sun was setting, *Graf Spee* again turned to fire three salvoes, two of which fell short, the third in *Achilles*' wake. *Achilles* replied with five salvoes at 2054.[1]

Finally, between 2130 and 2145 *Graf Spee* fired two salvoes, but this time Langsdorff did not turn to bring Turret Anton into play and used only Turret Bruno (six rounds).[2] By this time not only was *Graf Spee* short of ammunition but the 28cm gun tubes were also becoming somewhat worn, so that the Gunnery Officer was taking the reading from the rangefinder and then adding ten kilometers – a considerable correction.[3] Thus, on the run to Montevideo, *Graf Spee* had fired some forty rounds, significantly depleting its already low stock of 28cm ammunition, and to no material effect, since no actual hits were scored.

Analysis

His decision having been made, Langsdorff was determined to reach Montevideo. *Exeter* was out of the equation and no other British warship had arrived, so he had three concerns. The first was to keep the two British cruisers shadowing him at bay and to prevent them getting into a firing position, particularly for torpedoes. His second was to avoid the British submarine he was convinced was waiting for him. The third was to avoid contravening Uruguayan neutrality. In navigating he had the benefit of the experience of two officers who were familiar with these waters: *Leutnant* (*Sonderführer*) Ulpts, formerly of the Hamburg-South America Line, and *Korvetten-Kapitän* Höpfner.

Territorial Waters

Both the Germans and the British were aware that there were complications over the question of territorial waters in the Plate Estuary. Argentina and Uruguay were in agreement with each other that the Plate estuary's seaward boundary was a line drawn from Punta del Este in Uruguay in the north to Cabo San Antonio, Argentina, in the south. All waters to the west of this line, according to this claim, were 'enclosed waters' divided by the median line between

Uruguay and Argentina. This was not recognised internationally, so that during these events in December 1939 both Germany and Britain recognised only the traditional limit, which was measured as three nautical miles (5.6km) from the low-water mark.

Warships of a belligerent nation were allowed to sail within the territorial waters of a neutral nation (right of innocent passage) but were not permitted to open fire or launch torpedoes, except in the case of self-defence.

SS *Shakespear*

The battle itself had been undisturbed by third parties, but while the voyage to Montevideo lacked in further major dramas it was not without incident. Modern television news sometimes includes coverage of an urban battle between two sets of gun-armed combatants where an innocent civilian, usually elderly, wanders across the battlefield, seemingly unconcerned and undeterred by the bullets and chaos around them. The first of several similar events during *Graf Spee*'s voyage to Montevideo occurred, at about 1100, when the Germans observed a fourteen-year old British tramp steamer, SS *Shakespear*, approaching from the Plate estuary.[4] Langsdorff sent a flag signal ordering the ship to heave-to which was ignored and, as the ship seemed all set to pass close by, a 15cm warning shot was fired across her bows. The *Shakespear* came to a stop but, when ordered to abandon ship, the crew simply stayed put. According to Prize Law, Langsdorff, having given the crew adequate opportunity to leave their ship and their not having done so, would have been justified in sinking her, and it appears that at one point he had actually decided to do so as he sent a wireless message calling on *Ajax* to pick up the survivors.[5] However, he decided against it and *Graf Spee* was soon on her way again. Langsdorff told his bridge officers that he was letting the British freighter go free because his own ship was proceeding to a neutral harbour and, although still in international waters, he saw no merit in upsetting his impending hosts.

There is no record as to why the captain of *Shakespear* behaved in this apparently foolhardy way. One possibility is that he may have believed that he was safely inside Uruguayan territorial waters and another is that he may have seen *Ajax* approaching at high speed from the East. Langsdorff, on the other hand, showed uncharacteristic indecision. The two British cruisers were approaching fast from the east and if he was to be true to his previous code of conduct, while he would doubtless not have sent a boarding party, he would nevertheless have given all those aboard time to leave before he tried to sink her, giving both *Ajax* and *Achilles* plenty of time to come within range. Another possibility is that he may have thought that one of the British cruisers would have stopped, however briefly, to pick up the men in the lifeboat but as they were within easy reach of the Uruguayan shore they would probably not have done so. Whatever the reason, it seems to have been a very sensible decision on Langsdorff's part.

SS *Formose*

A second witness to these great events was a French cargo liner, *Formose*, which was heading for Montevideo at the end of a run from Marseilles. The first warning came when they heard the message from *Graf Spee* to *Ajax* asking her to pick up the crew of *Shakespear*, whereupon *Formose*'s captain, realising there was trouble afoot, made for the nearest point on the Uruguayan coast, to obtain the protection of territorial waters. A little later, when passing Punta del Este, *Formose*'s crew and passengers saw, first, the corvette *Uruguay* (see below) and then *Graf Spee*, which passed the French ship at about 1900 (local time). They also saw exchanges of fire between the Germans and British, with *Graf Spee*'s rear turret firing and shots falling around *Graf Spee*, although their impression that hits were scored was not borne out by the German's afteraction reports. At no stage did *Graf Spee* seek to directly threaten *Formose*.

ROU *Uruguay*

In 1939 the Uruguayan Navy's major warship was the very modest gunboat, ROU *Uruguay*.[6]

Built in 1910 and displacing 1,170 tons, she was armed with two 4.7-inch guns. Her sole task was the protection of her country's territorial waters and at 1642 on the afternoon of 13 December she sailed from Maldonaldo to do just that.

When *Graf Spee* first saw the *Uruguay* the German ship hoisted a flag signal warning her to keep out of the way, although the Uruguayan vessel replied saying that she was unable to understand the message.[7] The small ship sailed across the gap between the German and the British ships – even though they had been firing at each other – passing only some 3,000 yards astern of the German ship. Had he wanted to do so, Langsdorff could have blown the Uruguayan ship out of the water with a single broadside, but since he was about to seek sanctuary in its capital's harbour, he was in no position to do anything about the Uruguayan ship. Wisely, he ignored it and proceeded on his way.

British Suspect a Hipper-class Cruiser

Mention has already been made of the incorrect identification of the 'destroyers' when first sighted by *Graf Spee* and there will be mention of more errors later. However, there was an incident during the run to Montevideo, which, although it happened to the British, is worth recounting to illustrate the difficulties inherent in long-distance ship recognition.

At 1540 *Achilles*' lookouts spotted the masts of a ship on the horizon, bearing (north-by-north-west – 297 degrees) and on a converging course. The Gunnery Officer, who was responsible for ship recognition, concluded that the approaching ship was German and the sighting was passed to the bridge, where it was confirmed and passed to Commodore Harwood in *Ajax* at 1543: 'Enemy in sight 297 (degrees)'. This was followed shortly afterwards by – 'Suspected 8-inch cruiser'.

The term '8-inch cruiser' referred to the *Kriegsmarine*'s Hipper-class, of which two had only recently been completed. These were larger and faster than the *Graf Spee*, with a main armament of eight 203mm (8-inch) guns and the arrival of such a powerful ship would enable *Graf Spee* to turn and fight, and between them they could easily demolish the two British light cruisers. Fortunately, the observers aboard *Achilles* were then able to discern a prominent forecastle and correct their identification to merchant ship and a 'Negative warship' was passed to *Ajax* at 1559.

The unknown ship was the SS *Delane*, a very modern ship of the Lamport and Holt Line's D-class. Only completed in 1938 and with a displacement of 7,761grt, the *Delane* was a refrigerated ship with some passenger accommodation. The D-class were revolutionary for their time, their most prominent recognition feature being the funnel which was closely integrated into the bridge structure, which gave her a similar appearance to a warship at very long ranges. She was inward bound to Montevideo from Liverpool and her crew was doubtless in total ignorance of the very unpleasant fifteen minutes they had given their compatriots!

Torpedoes

At about 2000, while passing South of Lobos Island, *Graf Spee*'s lookouts reported seeing a single torpedo track aft.[8] Rasenack states that the *Graf Spee*'s passive listening devices heard nothing, but does not pursue the matter further, and the track was attributed to the British submarine Langsdorff was convinced was in this area. In fact, there was no submarine anywhere near, but German intelligence knew, correctly – and had told Langsdorff – that the fleet submarines *Clyde* and *Severn* were both operating out of Freetown on convoy escort duties, so that it was not totally impossible that one might be off the River Plate. The Plate estuary is very shallow in many places and what appeared to be a torpedo track may well have been due to a natural cause, such as water breaking over a linear, shallow sandbank.

Report to SKL

During the day Langsdorff, as his duty demanded, sent a signal to SKL reporting the engagement and outlining the casualties and damage his ship had incurred. He also told them

of his intention to enter the River Plate where he would endeavour to restore her to a condition where she could attempt the return to Germany. The reply from SKL, received during the afternoon, was terse but clear: SKL (i.e. Admiral Raeder) '*gab ihr Einverständnis*'. This was translated in the British Admiralty report into English as 'Your intentions understood' which implies something less than total approval; in other words, tacit acceptance of the inevitable.[9] But, according to every German-English dictionary consulted by this author, *Einverständnis* means 'agreement, consent' – a somewhat stronger form of endorsement which would have given Langsdorff good reason to believe that what he was doing had Berlin's backing.

Analysis

At about 2220–2230 watchers aboard *Graf Spee* saw *Achilles* turn and withdraw from the chase. At this point, Rasenack reports, some consideration was given to an alternative. He claims that they could have 'managed without' the galleys and the drinking water apparatus[10] which seems an alarming prospect for a crew of over a thousand men on a voyage to Germany, which, even if all had gone well, must have lasted some five–six weeks. He placed greater significance on the loss of the equipment that purified the diesel fuel and lubricating oils; there was a small reserve but what would they have done once that had been used up? But, says Rasenack, 'the captain decided not to make the attempt'.

With every mile nearer to Montevideo Langsdorff's options narrowed. Now that they knew for certain where he was the British would be assembling major naval forces to the north and east of the Plate, so now the only realistic choice would have been southwards for an eventual rendezvous with *Altmark*, before attempting the homeward voyage. However, Langsdorff would have known that *Cumberland* must be somewhere in the area and he had to assume that the British cruiser would have been alerted by wireless and heading at full speed to join the rest of the British squadron.

His options had narrowed to one: enter Montevideo harbour.

Notes

1. There was some disagreement as to whether *Graf Spee* or *Achilles* was the first to shoot on this occasion. The British claimed the Germans fired first, the Germans, supported by the Uruguayans, that the British fired first. It was, however, a minor controversy which was quickly overtaken by more momentous events in Montevideo.
2. The British record states that *Graf Spee* fired three salvoes on this occasion.
3. Each tube had an estimated life of 340 Effective Full Charges (EFC).
4. SS *Shakespear* was a tramp ship, displacing 5,029 tons and with a crew of forty; she was operated by Glover Brothers of London. She was sunk in the North Atlantic on 5 January 1941 by gunfire from the Italian submarine *Cappellini*.
5. For this transmission, the German operator used his ship's international call sign, DTGS, the very first confirmation for the British that they were dealing with *Graf Spee*, rather than *Admiral Scheer*.
6. ROU (*República Oriental del Uruguay*) is the national warship prefix.
7. The German flag hoist was partially obscured by the bridge tower.
8. Rasenack, op cit, p. 155.
9. 'Graf Spee. The German Story', para 81.
10. 'Die Kombüse und der Frischwassererzeuger, die zerschossen sind, wären noch ze verschmerzen' (the galleys and fresh-water apparatus have been destroyed, but we could do without them). Rasenack, op cit., p. 156.

CHAPTER 21

In Montevideo

Narrative

Despite several exchanges of gunfire Langsdorff and *Graf Spee* survived the passage up the northern arm of the Rio de la Plata without incurring further damage and arrived in Montevideo harbour at about midnight on 13/14 December 1939.[1]

Night 13/14 December

Shortly after dropping anchor representatives of the port authority boarded *Graf Spee* and met Langsdorff. The meeting was brief but courteous and Langsdorff then went ashore, met the German minister, Langmann, for the first time and the two then went to the Uruguayan Foreign Ministry.[2] There, Langsdorff asked for the longest permissible stay – he proposed thirty days – in order to make good the damage to his ship. At this stage he was entertaining the idea of U-boats coming to their aid, although it is not clear whether he mentioned this to the Uruguayans.[3] His involuntary hosts, however, stipulated forty-eight hours, the same as allowed to the British. Langsdorff returned aboard at about 0400, having been on his feet since 0500 the previous day, fought a battle, been wounded, witnessed many casualties among his crew, seen his ship badly damaged, and conducted a long passage into Montevideo. He must have been totally exhausted.

Naturally, one of Langsdorff's primary concerns was British naval activity and how they would react to his entry to Montevideo. As always, his operations staff maintained an intelligence chart of the South Atlantic. On the morning of the 14th this showed that, wherever it was, the heavy cruiser *Cumberland* should arrive soon, while the *Renown, Dunkerque* and *Ark Royal* were believed to have sailed from Freetown, destination unknown. There then came, however, a sensational development when a lookout atop the *Vorturm* reported seeing a major warship on the distant horizon; i.e. some thirty-two miles offshore. This was then positively identified by the Gunnery Officer as the battlecruiser *Renown*, one of the very few British ships which was not only faster than *Graf Spee* but also outgunned her. This proved to be a crucial event in the saga, since Ascher, as gunnery officer, was not only the onboard expert in ship identification, but was also considered a most reliable officer. This was therefore taken as authoritative and neither then, nor later, did Langsdorff question this identification, which was to have a profound effect on subsequent assessments of the threat.

Meanwhile, *Graf Spee*'s crew were working hard to clear the damage to their ship, repairing anything they could on the assumption that they would soon be returning to battle with the British. The only local marine engineering yard refused to help, so the German merchant ships in port were instructed to send any welding apparatus and operators to the warship. Requests were also sent to the German Embassy in Buenos Aires for help and they organised more welding equipment and welders, which were sent across by air, as well as lift engineers who crossed by boat; all arrived in the course of the afternoon. The merchant ships also provided carbonic acid, still a major concern, as well as provisions.

In the late morning, Langsdorff still found time to call Captain Dove to a farewell interview. The latter was alarmed by his host's appearance: 'splinters had wounded him in the face … his right arm was in a sling … his confidence and cheerfulness had both left him.' The German told Dove that

The Uruguayan authorities will probably allow me only forty-eight hours to repair my ship, and that is not enough. I am mechanically sound and my artillery is all right, but my kitchen and stores have been shot away. I cannot feed my men, and I am not going out to sea to commit suicide with all my crew.

[4]
Like most European countries, the German diplomatic service maintained an embassy and staff in Uruguay, but the naval attaché based in the embassy in Argentina also covered Uruguay.[5] Thus Captain Dietrich Niebuhr arrived in Montevideo early on the Thursday morning and quickly became involved in the diplomatic battle, attending his first meeting with the Uruguayan foreign minister that afternoon.

One particular problem, which could have become vexatious, was settled quickly. Some of the German wounded aboard the *Graf Spee* had developed burns, which had all the appearance of having been caused by mustard gas.[6] Quite understandably, this caused alarm and was brought to the notice of the Uruguayan authorities who immediately convened a commission to check it out. It was while they were aboard *Graf Spee* that the ship's own Chief Engineer found the answer and demonstrated that the casualties had all been in contact with Ardexin, a key chemical component in the *Graf Spee*'s own fire extinguishing system.[7] This chemical was normally held in containers in the engine-room but some extra canisters had been stored on the upper deck and had been ruptured by the blast from one of *Exeter*'s shells, causing the problem.[8]

At about 1700 the British Merchant Navy officers were lined up on the deck, checked-off by the master-at-arms, and then told they were free to leave. As one, the officers turned to face the thirty-six coffins lying on the deck and saluted, whereupon Langsdorff, who was present, stepped forward and returned the salute. The British officers were then taken ashore by a waiting tug. Obviously, one of the British diplomatic staff's earliest priorities was to interrogate these men, which revealed the existence and activities of the *Altmark*, previously unknown to the Admiralty and which explained how *Graf Spee* had been able to spend so long at sea.

During the day *Graf Spee*'s Chief Engineer and a German civilian ship constructor who had come over from Argentina prepared a detailed list of the work needed to make *Graf Spee* seaworthy and they agreed that at least fourteen days would be necessary. They submitted their report to Langsdorff who passed it on to Langmann, who forwarded it to the Uruguayan government. As a result, a two-man Uruguayan naval commission came aboard *Graf Spee* at 1900 to make an independent assessment of the damage, but it should be noted that their sole concern was with the seaworthiness of the ship; its fighting capability, either offensive or defensive, was none of their business. They already had the German report but they now conducted a physical inspection of their own. They found a number of holes in the hull of varying sizes, and some damage to the galley and the fresh-water plant. But they declined to consider the fire-fighting system, when invited to do so, as it did not affect the seaworthiness of the ship. Also, they could not find the cracks in the stern which were reported to them by the Germans.

The commission recommended that three days would be needed for the repairs to 'be effected in a provisional manner'. As a result, the Uruguayan President decreed that 'a period of 72 hours be allowed for the carrying out of repairs necessary to ensure the seaworthiness of the German battleship *Admiral Graf Spee*, the time limit to expire at 8.p.m. on the 17th inst'.

At 2200 that evening Langsdorff called a meeting of all his officers to discuss the situation, where he told them that they must, at all costs, avoid having the ship being interned in Uruguay, which might well lead to the worst humiliation of all, the British taking possession of the *Graf Spee*.[9] He said that his own preferred course was a breakout at night. The possibility of crossing the Plate Estuary to Buenos Aires where the ship would be interned by the Argentinians was considered, as had happened with the *Goeben* in 1914, but the unavoidable problem was that *Graf Spee* could not sail direct from Montevideo to Buenos Aires, and would have to go out towards the mouth before turning south and then west to enter the Indio Channel.

A complicating factor was that the German warship was not only within 300 to 400 yards of a

number of British merchant ships, but was also visible from the shore, which was crowded with spectators by day and night. There was also a Uruguayan picketboat moored alongside. Thus the possibility of a clandestine departure intended to take Commodore Harwood's squadron by surprise were effectively zero.

15 December

The majority of the crew remained hard at work, making good as much of the damage as they could, convinced that they were preparing for a 'death-or-glory' sortie into the Atlantic. The first major event of the day was a short ceremony on *Graf Spee*'s quarterdeck where the officers and crew paid their respects to the thirty-six coffins before they were transferred to a lighter and taken ashore. Although perhaps beyond the scope of the Hague Convention – but without any protest by the British – the Uruguayans allowed a sizeable funeral party ashore to honour their fallen comrades. Large crowds lined the streets and a delegation from the recently-released British Merchant Navy officers also attended. The only jarring note came when a photographer managed to obtain a photograph of Captain Langsdorff giving the traditional naval salute whilst those behind him, including the German ambassador and three priests, were giving the Nazi salute. This was interpreted in some foreign newspapers as the captain deliberately slighting the Nazi regime. In fact, the naval salute was the correct compliment until 24 July 1944 and all those behind Langsdorff in the picture giving the Nazi salute were civilians including (to their shame) the three priests.[10]

By now Langsdorff as well as his officers and crew were beginning to feel trapped as reports and rumours of British naval arrivals multiplied. Radio Montevideo reported that the British battleship *Barham* and French battle-cruiser *Dunkerque* were off the River Plate, although neither was seen by *Graf Spee*'s lookouts. Indeed, they were both actually in the North Atlantic.[11]

The situation was made worse when lookouts on the fighting top spotted two new ships on the horizon, which were identified by Ascher as the aircraft-carrier *Ark Royal* and battlecruiser *Renown*.[12] This was immediately reported to Langsdorff, who still considered Ascher to be an impeccable source and he, in turn, informed SKL by signal. The possibility that it might be wrong was raised at a meeting of senior officers in SKL in Berlin chaired by Raeder. At this meeting the head of the operations branch said: 'According to our information, which is admittedly not one hundred per cent certain, it is impossible for the *Ark Royal* and *Renown* to be off the River Plate.' But he was overruled in favour of the man on the spot.

Reports also came from the local sources ashore in Montevideo that the heavy cruiser *Cumberland* had joined the blockading force. This ship was particularly easy to recognise, as she had three tall funnels and this time the report was actually correct.[13]

In the afternoon, Langsdorff, a man of scrupulous good manners, took several of his officers to pay a formal call on the Minister of National Defence to record their appreciation of the arrangements and for the presence of a Uruguayan naval detachment at that morning's funeral. He also thanked them for the offer of a special ward for wounded German sailors at the Uruguayan military hospital, although at that point only one sailor with badly damaged eyesight had been allowed ashore.

At 1815 British merchant ship, SS *Ashworth*, put out to sea, enabling the British to invoke Article 16 of the Hague Convention: 'A belligerent warship may not leave a neutral port less than twenty-four hours after a marine ship flying the flag of its adversary.' Thus Langsdorff's deadline was extended to 1800 on 16 December.

In the evening Langsdorff fell into conversation (almost certainly not by chance) with a group of sailors and told them that he would only set sail if he could foresee a prospect of success. If not, he would blow up the ship. He said that he would not offer the British a cheap target. This news spread through the ship like wildfire, again, presumably, as Langsdorff had intended.[14]

Langmann and Langsdorff called on the Minister of Foreign Affairs at about 1900. Afterwards the two Germans sent separate telegrams to their respective ministries in Berlin. In his signal to the SKL Langsdorff repeated that *Renown* and *Ark Royal* were waiting for the *Graf Spee*, together with a number of cruisers and destroyers, and said that, if at all possible, he intended to try to fight his way through to Buenos Aires. However, he requested advice from SKL on what he should do if that failed: should he scuttle his ship, even though the depth of water was insufficient, or else accept internment?

Even then the day was not yet over for the unfortunate Uruguayans, as Millington-Drake and his Naval Attaché called on Dr Guani at 2330, although little came out of the meeting.

16 December

During the night 15/16 December the German merchant ship *Tacoma* was moved to take up a new position between *Graf Spee* and the land, thus to a certain extent screening what was going on aboard the warship. The first significant event of the day for Langsdorff was when he received a signal from SKL which agreed with his suggestion that the ship must not be interned in Uruguay and that he should attempt to reach Buenos Aires; only if that was impossible was he to scuttle the ship after blowing up all equipment of any value.

This news was passed around the ship very rapidly and was then confirmed by Langsdorff in an address to the crew where he told them that he would not allow them to be shot to pieces at sea by an overwhelmingly superior force. 'To me,' he told them, 'a thousand young men alive are worth far more than a thousand dead heroes.'

All day rumours abounded, both afloat and ashore. Some seem to have started through misunderstandings, but others were deliberately planted by the British. One of the latter was that *Renown* and *Ark Royal* would call at Mar del Plata to refuel within a day or so of 16 December. If true, this placed them to the south of the Plate, thus effectively blocking any breakout by *Graf Spee* towards the Antarctic and the waiting *Altmark*.

The British continued to need *Graf Spee* to be detained as long as possible while reinforcements sped to the scene, so the refrigerated ship *Dunster Grange* sailed at 1800, thus extending *Graf Spee*'s stay by a further twenty-four hours. The Uruguayans, however, were not prepared to allow this particular ploy to continue and suspended all further merchant ship sailings from 2000 that night.

At 1307 Langsdorff received another signal from SKL authorising the breakout to Buenos Aires, as proposed in his own signal sent earlier in the day. He quickly briefed his officers and they passed it on to their sailors, resulting in a frenzy of activity as equipment was transferred from the *Tacoma*, repairs were completed and *Graf Spee* prepared to leave harbour.

At 1800 the German Minister went to the Uruguayan Ministry of Foreign Affairs for a meeting which lasted two hours and was not very friendly. Meanwhile, Langsdorff had been consulting various officers individually, including Wattenberg (chief navigating officer), Höpfner (Second Navigating Officer) and Klepp (chief engineer), which was followed by a proper conference that was attended by Executive Officer (Kay), the Second Navigating Officer (Höpfner), the Gunnery Officer (Ascher) and the Naval Attaché (Niebuhr). Various alternatives were discussed, but sailing to Buenos Aires was finally ruled out, as were a breakout to the sea and internment in Uruguay. It was then that Langsdorff concluded that the only solution was to scuttle his ship, although this was not, at this point, a firm decision.

At 1915 Langsdorff addressed the crew before leaving for the German legation at which he arrived at 1930, leaving his crew working on the ship. Then at 2040 the signal arrived from SKL concurring with Langsdorff's proposed scuttling, upon which Langsdorff made the executive decision, which only he could make, to go ahead. The meeting in the legation then started making the practical arrangements. Two tugs and a lighter were ordered from Argentina and arrangements also made for specified personnel to be left behind in Montevideo for

redeployment to other German embassies. Langsdorff also started writing a long letter to Langmann and at midnight he was still hard at work.
As ever during this episode Montevideo was awash with rumours and on this evening one started that Langsdorff intended to sail that night, but once again this proved wrong.

17 December

Langsdorff returned to his ship between 0200 and 0300 where he found that Ascher, Wattenburg and Klepp had been waiting up for him. He gave them the order to cease all repair work and to prepare the demolitions. He must then have taken a short sleep but he was up early and at one point during the morning he instructed that all the demolitions be fired from one point, where it would be initiated by him, thus enabling him to be blown up with his ship, but the Gunnery Officer talked him out of it.
Some equipment was transferred to the *Tacoma*. All equipment which could not be moved but was judged to be of potential interest to the enemy was destroyed, some by grenades, some by battering with hammers, and some thrown overboard. The main charges would use torpedo warheads and the day was spent in wiring them up with clocks, while the turret trunks were filled with shells and then filled with explosive powder.
At 1530 the Uruguayan Foreign Minister convened a meeting of diplomatic representatives of all North and South American countries. He explained his country's stance and was given unanimous support.
From the early afternoon the Germans started the process of transferring some 900 men to the *Tacoma*, a mass movement which proved impossible to hide from the spectators on the Montevideo waterfront. By now, however, the die was cast and in mid-afternoon the Germans sent a message to the harbourmaster notifying him of Langsdorff's intention to sail that evening.
At 1700 the British ambassador sent yet another note to the government, this one demanding that the *Tacoma* could no longer be regarded as a civil merchant ship, but was clearly a fully-fledged government auxiliary, i.e. equivalent to the Royal Fleet Auxiliary in British service.
Just after 1800 battle ensigns were hoisted by the *Graf Spee*; one at the foremast, the second at the mainmast. The anchors were weighed, the warship turned to face the harbour entrance and then slowly proceeded seawards, watched by a vast crowd. Once clear of the breakwater she headed south-east for a short period, but then altered course to the west in the direction of the Recalda pontoon at the eastern end of the swept channel to Buenos Aires. Shortly after the warship left she was followed by the *Tacoma*.
The spectators thought that *Graf Spee* intended to proceed to Buenos Aires but, very shortly after passing the three mile limit, the ship stopped and dropped anchor. All remaining crew disembarked into tenders, except for Langsdorff and five officers who went to the quarterdeck where the Kriegsmarine ensign was lowered for the last time. The twenty-minute timer was then initiated and they departed, Langsdorff in compliance with maritime tradition being the last to leave.
The explosion came at precisely 2000 and was spectacularly effective, although there were minor malfunctions. It appeared that one explosion took place prematurely which seems to have disrupted the circuit to Turret Anton, which survived the explosion as can be clearly seen in pictures taken the next day. *Graf Spee* settled on the bottom in a position 34° 58′ South, 56° 18′ West, at a distance of precisely four miles 117 yards (4,935m) from the nearest point on the Uruguayan coast.
Thus far the plan had gone like clockwork but there was a last-minute hitch when Uruguayan marine officials appeared on the scene and attempted to halt the move to Buenos Aires, although their objections were to the presence of Argentine tugs rather than to the Germans. At one point Langsdorff had to climb aboard one of the Uruguayan ships, but after a short

discussion the Uruguayans received instructions from a just-arrived gunboat to allow the Germans to leave. For some reason the six Chinese laundrymen had gone to sea aboard the *Graf Spee* and were now in one of the launches. This became separated from the rest and the occupants, together with the German crew of four, were taken aboard a Uruguayan vessel and returned to Montevideo. The four Germans were interned but the Chinese produced certificates of neutrality signed by Langsdorff and were released.

Analysis

The pressures on Langsdorff, already severe, increased even further from the moment his ship entered Montevideo harbour, where he found himself inextricably enmeshed in major issues at four distinct, albeit closely linked, levels. First, at the strategic level, he had to deal with the German Admiralty in Berlin and through them with Raeder and, ultimately, Hitler. Secondly, he found himself catapulted into a diplomatic cauldron in Montevideo, dealing with the Uruguayan government, on most occasions directly, but on others through the not always supportive German ambassador, Otto Langmann. Thirdly, at the operational level, he had to make all the local decisions for his ship and manage his crew. Finally, there was the personal level, where, since he was the commanding officer, his own future was inextricably bound up with that of his ship.

Berlin

Communications with Berlin were by cable from the German Embassy in Montevideo, since it was forbidden to communicate by radio. These communications seem to have been secure as there is no trace anywhere of them being intercepted and decoded by the British.

Grossadmiral Raeder was a firm believer in letting ultimate responsibility lie with the 'man on the spot'. This was in many ways thoroughly praiseworthy and in stark contrast to Hitler's later detailed interference with generals trying to conduct land battles. However, even such admirable conduct can have its shortcomings and one example was the failure to pass on to Langsdorff the SKL's operations staff's reservations about the sighting of the *Renown* and *Ark Royal* on 15 December.[15] This does not mean that Langsdorff would necessarily have allowed this to override the statement of the Gunnery Officer's report, but it might have led to him reviewing the evidence.

Uruguay

When *Graf Spee* entered Montevideo harbour on the night of 13/14 December this small Spanish-speaking South American country found itself plunged into an international and totally unexpected crisis without precedent in its history. It was traditionally friendly with the United Kingdom, but, although there was a sizeable German immigrant population, it had few links with Germany.

The Uruguayan Navy was a tiny force, whose sole task was to protect its territorial waters. It operated a very small number of ships of which the largest was a thirty-year old destroyer. Its personnel had very little experience or knowledge of larger warships apart from visiting foreign warships calling at Montevideo on 'showing the flag' visits.

The ministers found themselves under intense pressure and involved in the detailed interpretation of the Hague Convention. They behaved with great dignity and even-handedness and, despite the German claims to the contrary, their decision to face the *Graf Spee* with either expulsion or internment was the only one available to them under international law.

The British

The British played a long game. They realised very early on that it was to their advantage to keep *Graf Spee* in Montevideo for as long as possible while their many assets in the Atlantic moved into place. The most sensitive period from their point of view was from midnight 13/14 December when only the two light cruisers stood between *Graf Spee* and the open ocean until

Cumberland arrived on the evening of 15 December.

Options Open to Langsdorff – I. Escape into the Atlantic

It seems just possible that a very early attempt at escape might have been successful. There were two Atlantic options. First, that Langsdorff should make a serious attempt to fight his way through the British screen in order to reach the open Atlantic and then continue northwards for the return to Germany. The second was to deliberately seek confrontation and go down in a blaze of glory. Langsdorff knew that his ship was in a poor state (see next chapter) and that he had sufficient 28cm ammunition for no more than about forty-five minutes fighting at intense rates. In addition to that, the rounds remaining were virtually all armour-piercing, which could well be effective against a battlecruiser – provided he could get within range – but would be less effective against lightly-built cruisers. More important than all of that in Langsdorff's mind, however, was that he could not have any doubt that his ship would be pounded into submission and cost many young lives, for no real gain.

There were also some practical considerations. Montevideo harbour was not large and included a number of British merchant ships all watching the German warship closely. There was also a crowd of civilians and a radio broadcaster ashore, keeping the *Graf Spee* under close observation. Langsdorff would also have needed authority from the harbourmaster and the assistance of tugs, although an attempt to put to sea without permission or assistance might have been tried – the Uruguayans had no force available to prevent such an attempt – but it seems against Langsdorff's nature and would have had serious diplomatic repercussions for Germany. Thus there was no realistic prospect of a clandestine departure and taking the blockading ships by surprise. Also, the narrowness of the channel would preclude him from swinging his ship to open up the arc of Turret Bruno, thus enabling both turrets to take part in an engagement.

Curiously, Commodore Harwood, despite the successes of the 13 December, took a pessimistic view of British chances in preventing an escape by *Graf Spee* and rated his chances of intercepting the German ship as no higher than thirty per cent.

Options Open to Langsdorff – II. Escape Aided by U-Boats

One possibility that Langsdorff is known to have considered, albeit briefly on 13/14 December, was that one or more U-boats could join him in order to assist in his breakout by threatening the British warships waiting off the mouth of the Plate.[16] Langsdorff even raised such hopes with his crew. There is, however, no mention of U-boat support in any of the known texts of signals from Langsdorff to SKL nor is there any record in the SKL files of such a proposal being considered.

Could one or more U-boats have reached the River Plate within thirty days? On 14 December 1939 there were just four U-boats at sea (*U-31, U-35, U-47, U-48*), all of them in the waters around the British Isles, and all with just sufficient fuel to return to Wilhelmshaven. Had it been decided to send a U-boat to help *Graf Spee* on such a long voyage with a potential battle at the end of it meant that the boat (or boats) concerned would have needed maximum provisions and fuel as well as a full outload of torpedoes and gun ammunition. Thus, had they decided to do so, the SKL would in all probability have despatched a fully-prepared boat from Germany, which, in view of the urgency could probably have been done in about two or three days. The boat/s would have had to sail northwards around the British Isles and then south, a distance of some 7,000 nautical miles.

The boat selected for such a mission would almost certainly have been a Type IXA, which was specifically designed for long-range operations. Eight were commissioned between August 1938 and November 1939, of which three had already been sunk. Quite by chance, four were in Wilhelmshaven on 14 December and a fifth returned there on 16 December.[17]

These had a theoretical unrefuelled range of 19,425 nautical miles at 10 knots, although greater

speed could be achieved at the cost of increased fuel consumption. So, assuming a voyage entirely on the surface the voyage could have been completed in 7,000 ÷ 10 ÷ 24 = twenty-nine days. However, submerged speed was about 4 knots, so any period spent underwater in areas of maximum threat or if under actual attack would have added greatly to the time. Although theoretically not necessary, it is possible that the boat could have refuelled in Vigo, Spain, or the Cape Verde Islands, as did other German U-boats early in the war. This would have required a relatively minor diversion and the actual replenishment usually took about five-six hours.[18] Alternatively, a rendezvous with a German merchant ship or even with *Altmark* might have been arranged.

Thus a U-boat might have arrived in twenty-eight to forty days; i.e. 16 January 1940, at the very earliest, although U-boat Command had already discovered from other operations that 'the U-boats' speed of advance was always much influenced by the vagaries of weather and enemy defence'.[19] In any event, the proposal does not seem to have been mentioned aboard *Graf Spee* after 16 December, although it must have taken several hours of anxious calculation and discussion before it was abandoned. Nevertheless, it might have been sensible to have passed the suggestion to SKL who could have forwarded it to U-Boat Command for their professional consideration.

This plan was impracticable from several points-of view. First, as has just been shown, it was unachievable by U-boats anyway. Secondly, it was inconceivable that the Uruguayans would allow such a long stay. Thirdly, it would allow the British and French time to assemble even more warships off the River Plate. But Langsdorff should not be criticised for considering such a possibility. He was in a very difficult situation and, as a commander, it was his duty to consider all possible solutions, even those, as in this case, that could be quickly disregarded as too far-fetched.

Options Open to Langsdorff – III. Accept Internment in Montevideo

The next possibility was to accept internment in Montevideo. The ship would have had to be maintained by a skeleton crew and the remainder interned ashore, all at German expense. There was, however, a distinct possibility that the British might try to capture the ship in a cutting-out expedition and take it to sea, as they had done so often in the Napoleonic Wars. Or they could carry out a clandestine raid to blow it up. Perhaps worst of all, they might bring pressure to bear on the Uruguayans to hand it over to them peacefully. Whatever they did, it was certain that the British would not have rested with *Graf Spee* sitting in Montevideo harbour. The British had shown their ruthlessness and persistence in dealing with such threats with *Königsberg* in its lair up the Rufiji river in 1915 (see Chapter 1) and, although in the future, were to be shown again when they bombarded the French fleet at Mers-el-Kebir on 3 July 1940. Any possibility of such an event was unacceptable to Hitler, so he was adamant in ruling out internment in Uruguay.

Options Open to Langsdorff – IV. Transfer to Buenos Aires

There was little doubt in the minds of Langmann, the ambassador, and Langsdorff that the Argentine government and navy would be more friendly and cooperative than those in Uruguay, although there can have been little certainty as to just how far that might extend. For example, on 13 December when the plight of HMS *Exeter* became common knowledge at about midday the Argentine Minister of Marine signalled the British ship offering repair facilities at Puerto Belgrano, his navy's main base near Bahía Blanca. The offer was generous but was politely declined and *Exeter* limped on to the Falklands. The Argentines would presumably have offered the same, possibly even more generous help to *Graf Spee*, but in view of the Hague Convention the warship could not have remained too long and Puerto Belgrano's physical situation was not too dissimilar to that of Montevideo, being on the northern shore of a large bay with access to the sea down only one channel, which was hemmed in on both sides

by sandbanks.
A transit to Buenos Aires might have been feasible, despite the risks of running aground. Even a careful transit down the Argentine coast to Puerto Belgrano, but sticking within the territorial limit, might just have been possible. In the event, Langsdorff decided that he could not face the possibility of his ship grounding and becoming a sitting duck for the British.

Options Open to Langsdorff – V. Destroy His Ship

This was the ultimate choice. It involved minimum loss of life, if any. Although it would inevitably mean the internment of the crew, it did at least avoid the humiliation of internment of the ship

Intelligence

Langsdorff had a wide variety of information inputs, ranging from reports from SKL in Berlin, through his own B-Dienst which had served him so well, and local sources in Montevideo, to visual observations by his own crew. Intelligence reports received from SKL were, in general, fairly accurate, although most were based on reports from shore-based observers, for example, in Cape Town and Rio de Janeiro, who could report arrivals and departures with considerable accuracy, but once a ship had put to sea its whereabouts and destination were unknown.
Graf Spee's war diary recorded that on 15 December an observer in a civilian aircraft operating out of Montevideo had seen four cruisers in the Plate estuary. Then, in an electrifying development, a lookout on *Graf Spee*'s *Vorturm* reported seeing not only *Ajax* and *Achilles* waiting outside the three-mile limit, but also a further, larger, ship. This was personally and positively confirmed by the Gunnery Officer as the battlecruiser HMS *Renown*, which was armed with six 15-inch (380mm) guns and had a speed of 32 knots.
This identification seemed to be strengthened by a report from SKL in Berlin that *Renown* had left Cape Town (in company with the carrier HMS *Ark Royal*) on 12 December, destination unknown.[20]
There seem to be two possibilities for this mistaken identification. The first is that the observers from *Graf Spee* actually saw HMS *Cumberland*, a heavy cruiser which arrived from the Falklands at 2200 on 14 December. This ship had an unusual profile, with a very high hull which might, at great range, have been mistaken for a 'flat-top' aircraft carrier, although the three tall funnels should have been recognisable. The other possibility is that the observers saw the tanker RFA *Olynthus*, which had arrived to replenish Harwood's ships. A typical tanker of the period, *Olynthus* had a very long low hull, with an amid-ships superstructure and machinery aft and this might, at great range, have been taken for an aircraft carrier.
The problem was that the ship's Gunnery Officer had considerable authority where ship recognition was concerned and Langsdorff believed him implicitly. This was the second incorrect identification and had similarly disastrous results, although in fairness it must be stated that ship recognition at extreme range is notoriously difficult and there are always two tendencies, when faced with choices in such circumstances. The first is to assume the worst possible case and the second to mentally manipulate what one actually sees into what one is expecting to see.

Responsibility

There was a surprising postscript to this event. The official response to the blowing up came from Berlin several hours later in the form of a Press release: 'The time necessary to make *Graf Spee* seaworthy was refused by the Government of Uruguay. In the circumstances Captain Langsdorff decided to destroy his ship by blowing her up.' But only a few hours later, the second sentence was amended on Hitler's personal instructions to read: 'Under the circumstances the Führer ordered Captain Langsdorff to destroy the ship by blowing her up …'
In other words, Hitler took it upon himself as Commander-in-Chief to publicly absolve Langsdorff and accept personal responsibility for what had happened. It was not often that

Hitler acted in an honourable manner, so he should be given credit on this occasion.

Notes

1. Accounts differ between 2300 and 0100, but the precise time does not matter; the fact is that *Graf Spee* arrived.
2. Otto Langmann (1898–1956) fought in the First World War as an infantry officer and then became a pastor in the German Evangelical Church. He also became involved in politics, being an early supporter of the NSDAP. He served as pastor in Mecklenburg, but in 1928 he began a long career in Latin America, serving in Colombia, Ecuador and Guatemala, but also continuing his political involvement, to the extent that in 1931 he co-founded the first overseas branch of the NSDAP in Guatemala. He returned to Germany in 1933 but in 1937 was appointed German ambassador to Uruguay, a post he still held when the *Graf Spee* entered Montevideo. He returned to Germany in 1942 and was captured by the Russians in Berlin in 1945. He then spent ten years in a PoW camp in Siberia until being repatriated in 1956, but died just a few weeks later. He spoke fluent Spanish.
3. Rasenack, p. 199.
4. Dove, op cit., pp. 141–2.
5. The British had a similar arrangement, and their Naval Attaché also had to cross rapidly to Montevideo.
6. This story was quickly reported in the international Press but by 16 December had been quietly dropped. *The Times*, 16 December 1939, p. 7.
7. Ardexin was the trade name for *Ethylbromide* ($C_2H_4Br_2$) and when mixed with seawater generated a dense foam, suppressing a fire by starving it of oxygen.
8. It would appear that although the commission boarded *Graf Spee* on 14 December it cannot have reported its conclusions until the following day, since Langsdorff's signal of 0118 15 December (see below) included a reference to British use of poisoned gas.
9. It was highly improbable that it would be impressed into the Uruguayan Navy, as the largest warship operated by the country was a small destroyer, armed with 4.7-inch guns. It would, therefore, have taken a long time for the Uruguayan Navy to develop the expertise to operate such a large warship.
10. The sailors on the right of the picture are not saluting at all, which was quite right and proper.
11. *Barham* was in the North Atlantic and on 16 December was some 200 miles NW of Ireland as part of the outer protective screen for incoming Convoy TC.1. *Dunkerque* sailed from Brest on 11 December carrying part of the French national gold reserve, arriving in Halifax, Canada on 17 December; she arrived back in Brest on 30 December.
12. '*Von Bord aus ist morgens durch den I.A.O. persönlich durch das Vormarsgerät ein Grosskampfschiff festgestellt worden, das nach seinem Gefechtsdmast für* Renown *angesprochen ist …'* (In the morning the Senior Gunnery Officer using the masthead rangefinder (i.e., on board *Graf Spee*) personally saw a battleship, which from its fighting top was identified as *Renown, Graf Spee*'s KTB quoted in Bildingmeier, p. 101.)
13. *Cumberland* had been cleaning boilers in the Falkland Islands when the battle started, but immediately set out at full speed and had joined Harwood's other two ships at 2000 on 14 December, one of the longest full-speed runs on record.
14. Rasenack, op cit., p. 172.
15. The chief of the operations branch was *Fregattenkapitän* Wagner, an outstanding officer who, in the post-war period went on to become Vice Admiral Commanding NATO naval forces in the Baltic Approaches.
16. '*während dieser Zeit U-boote von Deutchsland den La Plata erreichen können*.' Rasenack, op cit., p. 159.
17. Three were already in Wilhelmshaven having returned from patrol on dates shown: *U-37* (8 November); *U-41* (7 December); *U-43* (14 December). *U-38* returned from patrol on 16 December. *U-44* commissioned on 4 November and was preparing to go on patrol on 6 January 1940. (*U-boat operations of the Second World War*; Wynn.)
18. Immediately following the German surrender *U-977* (Type VIIC) left Norway on 6 May 1945 and arrived at the Argentine port of Mar del Plata on 17 August; i.e. 105 days at sea. But in view of the Allied ASW threat no less than sixty-six days were spent submerged.
19. *The U-boat war in the Atlantic 1939–45*; MOD(N); HMSO 1989, p. 14.
20. This was not correct as the two ships had sailed on 4 December and by the 12th were off

Pernambuco. On hearing of the Battle of the River Plate on 13 December the two ships headed for Rio de Janeiro, arriving at 1400 on 17 December; they were still refuelling when they heard that *Graf Spee* had been blown up.

CHAPTER 22

The State of the Ship

Once actually in Montevideo, the most important matter concerning the *Graf Spee* was to assess its potential for future operations and Langsdorff, in conjunction with his engineer officer, drew up two lists. The first of these set out the repairs needed to make the ship sufficiently seaworthy to survive a voyage to Germany via the north Atlantic in winter. This list had to be handed to the Uruguayans and it could be safely assumed that it would be quickly leaked to the British. The second list was for German eyes only and concerned the damage to the ship's fighting ability and its ability to undertake an engagement with the British ships assembling offshore. This could not be passed to the Uruguayans, not only because it was outside the concerns of the Hague Convention, but also because it was essential that it was not revealed to the British. It should be emphasised that the Uruguayan government was solely interested in the seaworthiness of the ship and anything to do with the ship's combat capability was simply irrelevant to them.

There were three inspections. The first was by Langsdorff at about 0800 on 13 December, i.e. immediately after the main engagement, as described in Chapter 19. The second was by the Chief Engineer Officer and a German ship constructor from Buenos Aires on the morning of 14 December. The third was by the Uruguayan Commission on the late afternoon of the 14th.

The Uruguayan Inspection

Captain Langsdorff presented the Uruguayans with a five-point list:

- Nine holes in the outer plating, of which two were forward and one to starboard on the waterline.
- The fire-fighting system had reduced capability.
- There were cracks in the stern.
- There was damage to the galley, bakery and laundry.
- The auxiliary boiler for producing drinking water for the crew had been destroyed.

The Uruguayan commission made a careful examination and then reported to their government:

Holes. They found fifteen holes on the starboard side, and twelve on the port side, all of varying sizes.

Fire-fighting system. They did not pursue this as they did not consider this to be essential for seaworthiness as laid down in the Hague Convention.

Cracks in stern. They declared themselves unable to find these cracks.

Galley. They agreed that one cauldron and its associated wiring, together with some electrical installations, had been destroyed. Also, the auxiliary boiler for drinking water needed repairs.

Engines. The inspectors offered to look at the engines but Langsdorff told them that this was not necessary as they were under armour and undamaged.

The commission submitted their list to the Uruguayan Cabinet, with the recommendation that the Germans be given seventy-two hours in which to effect the repairs necessary to make the ship seaworthy.

The German Assessment of Combat Capability

Main Armament (28cm)

The six 28cm guns and their heavily armoured turrets, together with their associated ammunition supply systems, were intact and serviceable, and there had been no casualties among the guncrews. Only 186 rounds remained, but that was not the real problem, which was that 170 of those were armour-piercing which would be invaluable against battleships or battlecruisers but were unlikely to have much effect on the light cruisers except if descending vertically at long range. That left sixteen base-fuzed shells, which would be quickly used up. At

the rate of fire during the battle on the 13th the entire stock would be used up in about forty minutes, after which there would be no more.

Secondary Battery (15cm)

Of the eight guns, Port No. 3 had been damaged beyond repair, as had the ammunition hoist for No. 1 Port; the others were serviceable. But, a total of 377 rounds had been fired, leaving a stock of 423. *Graf Spee*'s gunnery staff appear to have recognised that the 15cm guns had made poor shooting, but not that they had scored no hits at all.

Anti-Aircraft Guns

The forward AA command post was out of action, together with 10.5cm gun No. 1 Starboard and the right-hand barrel of gun No. 11 Port. The starboard chain hoist for 10.5cm ammunition had been destroyed and the chain hoist bushing of the port 10.5cm ammunition hoist had been shot away and was temporarily out of action. During the action, eighty rounds had been fired at the *Achilles* Seafox, but without scoring any hits; 2,470 rounds remained.

The starboard forward 37mm elevating gears and left sighting mechanism had been damaged by shell fragments. The full supply of rounds remained but, as these were close-range weapons, primarily for use against aircraft, they were of no use in a fight against surface warships.

Torpedoes

The torpedo tubes were in an exposed position on the quarterdeck. One tube in the port-side mount was unserviceable, which was attributed to blast from *Graf Spee*'s own Turret Bruno rather than to enemy action. The port-side quad mount could not be trained. A number of devices and instruments were damaged. As pointed out in Chapter 5, the torpedoes themselves were so unreliable that, even if they had been launched, it seems unlikely that they would have been effective, although this would probably not have been known aboard *Graf Spee*.

Aircraft

The in-use aircraft on the catapult had been serviceable on the morning of 13 December although lacking its engine. The fuselage had then been reduced to a skeleton in the course of the battle. It was also impossible to train the catapult. There is no information on the state of the reserve aircraft, but it seems possible that, given more time, it could have been removed from its hangar and made serviceable. That was not really important, however, because both the pilot and the officer/observer had been killed in the battle. Thus, when viewed as a 'system,' *Graf Spee*'s aircraft reconnaissance capability had been reduced to zero.

Radar

No problems were reported with the radar, which is surprising as it was known to be susceptible to vibration and shock, both of which had been experienced in full measure throughout 13 December.

Rangefinder

The rangefinder at the head of the foremast was damaged and could not be repaired by the men or facilities abroad.[1] This was by no means the only rangefinder in the ship, but its masthead position and height made it by far the most valuable, and for it to be of limited use was a major blow

Searchlights

The searchlights would only be of use during a night action. The electric cables on one searchlight had been shot away and the mirror on another destroyed by blast from a near miss, but all were repaired and serviceable.

Hull

The British ships had inflicted some twenty-seven holes in the hull, but the smaller ones had been plugged. The most significant damage was a large hole in the ship's port bow, some six feet (2m) square. Whilst still at sea the compartment inside this hole (the petty officers'

washroom) had been sealed internally by closing the watertight door, but once in Montevideo harbour a more permanent solution was urgently sought. It proved difficult to obtain a steel plate of suitable size and shape but a temporary solution was found which enabled the ship to put to sea on 17 December. Whether this would have lasted in the winter gales in the North Atlantic seems doubtful and, if the temporary cover had been torn off, such a large hole so far forward could have affected the ship's survival.

As before the battle, the bottom was encrusted with marine growth.

When the Germans submitted their list, one of the items listed was 'cracks in stern'. The Germans would not have included this on their list without some evidence, but the Uruguayan commission denied having found any. The exact nature of these cracks and their location has not been recorded, but it is known that all three ships of this class had a weakness in this area, as described in Chapter 4.

Machinery

According to the war diary the most critical consideration was the condition of the machinery, which had exceeded its fatigue life by a very considerable margin, the ship having been constantly at sea for 116 days between leaving Wilhelmshaven and arriving in Montevideo. Never once during that time had it docked and while not all the eight main diesels had been on-line for all of that time, enabling some maintenance to be done, there had been only a single opportunity for a one day self-refit.

Cracks had been found in numerous metal castings including engine bases and supports. Further, some pistons and rings were deformed and cylinders cracked which, among other consequences, resulted in excessive smoke, and which may have been at least partially responsible for giving away *Graf Spee*'s presence to the British cruisers on 13 December. Taken together these problems meant that it would be dangerous for the ship to steam at more than 17 knots.[2]

Sustenance of the Crew

One of Langsdorff's most serious concerns was the supply of cooked food and drinking water to his crew. The problem lay not so much with the actual galley as with the auxiliary boiler which provided the steam for the cooking. This was repaired in Montevideo. Nevertheless, he had to plan on feeding some 1,100 men and, even bearing in mind the relatively unsophisticated diet and cooking requirements of a German crew, this was still a significant problem.

Final Analysis

The problems with *Graf Spee* were a combination of shortcomings in the original design, the length of the voyage, and, finally, battle damage incurred on 13 December. It would have been possible for Langsdorff to take his ship to sea but the shortage of 28cm ammunition, the inadequacy of the 15cm gun battery, the lack of an aircraft, the reduced speed resulting from marine growth and the worn-out engines would almost certainly have made the foray shortlived and ended in many deaths. On these grounds alone, Langsdorff's decision not to go to sea made great sense.

Notes

1. '*Entfernungsdmessgerät im Vormars ist durch Beschädigung der Optik ausgefallen*' Bidlingmeier, op cit., p. 102.
2. '*Am bedenklichsten aber ist der Zustand der Maschinenanlage, die nach Ableistung der doppelten Motorenbetriebstunden erhebliche Ermüdungserscheinungen und Zeichen der Überanspruchung zeigt, unrunde Kolbenstangen, Risse in Fundamenten und Zylindern u.a., so daâ bei Geschwindigkeiten über 17kn keine Betriebssicherheit mehr gewährleistet ist*.' ['The most serious, however, is the condition of the machinery, which, having served for double the normal hours, shows considerable wear and proof of the overstressing includes distorted pistons, cracks in the bases and cylinders, etc so that a speed of over 17 knots is unsafe and not to be recommended.'] Bidlingmeier, op cit., p. 102 quoting from KTB.

CHAPTER 23

Langsdorff Takes His Own Life

Narrative

The dramatic destruction of the *Graf Spee* had a major impact around the world, but just when everyone thought that the story had reached its climax came the news that Langsdorff had shot himself in his Buenos Aires hotel room. This act, coupled with the sombre scenes of his funeral, has remained in the popular conscience ever since.

Langsdorff and his men arrived in Buenos Aires on the morning of 18 December and, after some prevarication on the part of the Argentine authorities, were allowed ashore in the middle of the afternoon. The rest of the day was spent in processing the men as asylum seekers and in allocating them to accommodation. On the morning of the 19th Langsdorff was dismayed to find that while the Argentine newspapers naturally led with the news of the arrival of his crew they were also unanimous in castigating him as 'a coward and a traitor to the tradition of the sea' because he had 'failed to go down with his ship'. To add to his humiliation a photograph of him, flanked by two of his officers, reading these stories was beamed around the world. He had already written to his wife while in Montevideo and was almost certainly already determined to take his own life, but these headlines must have been mortifying for a man who prized honour so highly.

He spent most of that day negotiating with the Argentine authorities in an abortive attempt to have his men recognised and treated as distressed mariners rather than as belligerents. Then in the afternoon he gave an identical talk to four separate groups of his crew before spending the evening with friends. He then went to his room, where, after writing two letters, he lay down on one of his ship's battle ensigns and shot himself.[1]

One of the letters was to the German government via the ambassador:

Buenos Aires, 19-12-39.

To the Ambassador, Buenos Aires.

Your Excellency,

After a long struggle I reached the grave decision to scuttle the Panzerschiff *Graf Spee*, in order to prevent her from falling into enemy hands. I am convinced that under the circumstances no other course was open to me, once I had taken my ship into the trap of Montevideo. For, with the ammunition remaining, any attempt to fight my way back to open and deep water was bound to fail. And yet, only in deep water could I have scuttled the ship after having used the remaining ammunition, and thus been able to prevent her falling to the enemy. Rather than expose my ship to the danger of falling partly or completely into enemy hands after her brave fight, I have decided not to fight but to destroy the equipment and then scuttle the ship. It was clear to me that this decision might be consciously or unwittingly misconstrued by persons ignorant of my motives, as being attributable entirely or partly to personal considerations. Therefore I decided from the beginning to accept the consequences involved in this decision. For a Captain with a sense of honour, it goes without saying that his personal fate cannot be separated from that of his ship.

I postponed my intention as long as I still bore responsibility for decisions concerning the welfare of the crew under my command. After today's decision of the Argentine Government, I can do no more for my ship's company. Neither shall I any longer be able to take an active part in the present struggle of my country. It only remains to prove by my death that the men of the fighting services of the Third Reich are ready to die for the honour of the flag.

I alone bear the responsibility for scuttling the *Graf Spee*. I am happy to pay with my life for any possible reflection on the honour of the flag. I shall face my fate with firm faith in the cause and the future of the nation and of my Führer.
I am writing this letter to Your Excellency in the quiet of the evening, after calm deliberation, in order that you may be able to inform my superior officers, and to counter public rumours if this should become necessary.
(Signed) Langsdorff. Captain,
Commanding Officer of the sunken Panzerschiff *Graf Spee*

Analysis

One of the most extreme demonstrations of a commanding officer's responsibility for the unit under his command is the naval practice – if that is the right word for it – of a captain 'going down with his ship'. No proper definition of this particular action can be found, but it can be taken to mean that, his ship having suffered some disaster either in battle, by action of the sea, by fire, by neglect or by the action of another ship (for example, in a collision), the captain, who is physically capable of attempting to save himself, voluntarily chooses to remain with his sinking ship and so meet his death. This is quite different from the requirement that a captain should be the last to leave his ship, i.e. that he should remain on board until every member of his crew and, where applicable, all passengers, had left.
Research has failed to identify more than one example before about 1850, nor has it proved possible to discover how and from whence the idea originated. Indeed, although there are descriptions of captains actually taking this course, there seems to be no literature which attempts either to give an ethical justification for it or to criticise it. Furthermore, there are no official regulations which contain even a hint that this is a desirable course of action. It seems, therefore, to be a matter of international naval folklore that has been passed on by word of mouth.
In the era of wooden warships it was rare for a ship to sink in battle. Most engagements ended with a boarding action, culminating in the defeated captain surrendering his sword on his quarterdeck, following which he was treated as an honoured prisoner of war. Occasionally, a chance shot would reach the ship's magazine, whereupon the ship would blow up, as happened to the French *L'Orient* at the Battle of the Nile in August 1798, but in such circumstances the captain had no hand in his fate
The only known example during the wooden ship era is that of Captain Archibald Douglas, who commanded *Royal Oak* at the time of the Dutch naval attack on the British fleet in the River Medway in June 1667. His ship was set alight by enemy action and, when it became clear that there was no possibility of saving it, he ordered his crew to seek safety ashore, but, since the last order he had received had been to 'maintain his post to the last extremity', he himself remained aboard, telling the crew that 'it should never be said that a Douglas had quitted his post without orders'.
When sailing ships were lost at sea as a result of storm, fire or grounding captains sometimes lost their lives. However, this was almost always a consequence of the disaster rather than a deliberate act by the captain, and no example has been found of a captain going down with his ship to demonstrate his responsibility for what had happened. Indeed, captains accepted that their duty was to their crew. To take one example among many, when Captain Edward Edwards, a man with a particularly rigid view of duties of a captain, ran HMS *Pandora* aground in the Endeavour Straits in the Dutch East Indies in 1791, he survived and led his crew back to civilisation; the question of any other course of conduct never arose.
The concept of the 'captain going down with his ship' seems to have crept in at some point in the middle of the nineteenth century, one of the earliest examples being the captain of the

liner RMS *Amazon*, who went down with his blazing ship on 4 June 1852. The most famous is Captain Edward Smith of RMS *Titanic* in 1912, but even as late as 1944 survivors of the British troopship *Khedive Ismail* which had been hit by torpedoes from a Japanese submarine described how they had seen the Master, Captain Whiteman, calmly standing on the bridge as the ship capsized.

One of the earliest examples involving a naval commanding officer is that of the USS *Oneida*, a wooden-hulled steam corvette. While on passage off the Japanese port of Yokohama on 24 January 1870 she was hit by the P&O liner SS *City of Bombay* and immediately started to sink. The commanding officer, Commander Williams USN, ensured that the crew reached the boats but then remained aboard, stating that it was his duty to 'go down with his ship'.

On 16 December 1900 a German naval training ship, *Gneisenau*, with 460 people on board, was lying at anchor in the port of Malaga in Spain when a gale developed. The ship was blown on to the outer breakwater and sank. A Spanish sailor who was standing on the breakwater saw the commanding officer, *Kapitän-zur-See* Kretschmann, in the water and threw him a rope, but the German refused to take it, shouting that it was his duty to go down with his ship. And, having thrown his sword to his would-be rescuer, that is what he did.

There are numerous examples from opposite sides in the Second World War. On 8 June 1940 two British destroyers, *Acasta* and *Ardent*, were escorting the aircraft-carrier *Glorious*, which was returning to Scotland after the unsuccessful Norwegian campaign. The three British ships encountered the German battlecruisers *Gneisenau* and *Scharnhorst*, and, totally overpowered, *Ardent* was sunk followed by *Glorious*, both with heavy loss of life. Commander Glasford in *Acasta* then attacked out of a smokescreen and scored a close-range torpedo hit on *Scharnhorst*, but his ship came under devastating fire and was soon sinking. Of the crew of 138 just one man survived, who later described the last moments of his ship:

When I was in the water I saw the Captain leaning over the bridge, take a cigarette from a case and light it. We shouted to him to come on our raft, he waved 'Goodbye and good luck' - the end of a gallant man.
[2]

The British-owned Yangtze transport *Li Wo* was requisitioned for naval service in December 1941 and given an armament of a single 4-inch gun and two machine guns, while her civilian master, Tam Wilkinson, was commissioned as a lieutenant in the Royal Navy Reserve (RNR) and appointed commanding officer. Wilkinson sailed from Singapore on 13 February 1942 and the following day sighted a convoy of Japanese amphibious ships, escorted by a cruiser and several destroyers, en route to invade Sumatra in the then Dutch East Indies. Despite being very heavily outnumbered, Wilkinson headed straight for the enemy, engaging and damaging the nearest ship, until, with no more ammunition remaining, he rammed it. Having freed his ship, Wilkinson then came under fire from the Japanese warships but was able to survive for an hour before HMS *Li Wo* began to sink. Realising that no more could be done, he gave the order to 'abandon ship'. He was last seen by his crew standing on the bridge as his ship, its White Ensign still flying, disappeared below the waves. Wilkinson had never received any naval training but clearly had a firm understanding of what he perceived to be the traditions of the service that he had joined.[3]

In the *Kriegsmarine* at least a dozen Second World War U-boat commanding officers went down with their boats, a typical example being *Korvettenkapitän* Georg von Wiliamowitz-Möllendorf. He served in the Imperial German Navy throughout the First World War, joining the U-boat arm in 1917. He returned to the service in 1940, in which his second command was *U-459*, a Type XIV tanker, and he proved to be one of the most successful and long-lived commanders of these ill-fated boats. *U-459* shot down one RAF aircraft on 30 May 1943 and a second on 24 July but, on this occasion, the aircraft crashed on to the U-boat's upper deck and then slid into the sea, leaving an unexploded depth-charge aboard the submarine as it did so.

Unaware that it was still active, the crew pushed the depth-charge into the sea, where its fuse was activated as it passed under the U-boat's stern. The resulting explosion made it impossible for the boat to dive. Another RAF aircraft then appeared and attacked, causing so much damage that the captain ordered his crew to abandon ship. Having seen forty-one of his men safely into their dinghies, von Wiliamovitz-Möllendorf waved to them, saluted and then went below to open the sea-cocks and scuttle his boat. He was never seen again.

Captains of surface ships also went down. On 27 May 1941 two sailors aboard the doomed German battleship *Bismarck* sensed that *Kapitän-zur-See* Lindemann intended to go down with his ship and tried to force him into the sea, but he ordered them off and was clearly seen on deck saluting as his ship went down. *Kapitän-zur-See* Hintze of the *Scharnhorst* was also seen, unwounded, on the bridge as his ship went down on 26 December 1943.

Naval regulations give no evidence of any encouragement of this practice. The British King's (or Queen's) Regulations and Admiralty Instructions were re-issued from time to time, but the regulation covering the commanding officer's responsibilities on the loss of his ship was quite clear, that of 1913 being typical:

If one of His Majesty's ships be wrecked or otherwise lost or destroyed, the Captain is to use every exertion to preserve the lives of the Crew; and when they, or as many of them as possible, are saved, he is to use his utmost endeavours to save the stores, provisions, and furniture of the Ship … He is to keep the Crew together, and to be very particular in preserving regular and perfect discipline among them.
[4]

The whole emphasis of this instruction is on the survival of the commanding officer, his continuing responsibility towards his crew, and his duty to preserve documents, secret orders, accounts and so on. While the involuntary death of the commanding officer clearly cannot be ruled out, nowhere is there even the remotest suggestion that he should go down with his ship.

United States Navy Regulations instruct the captain that 'he shall, in the case of loss of the ship, remain by her with officers and crew as long as necessary, and save as much Government property as possible' which is little different from the British regulation. The US Navy Regulations then go one step further by stating that 'If it becomes necessary to abandon the ship, he [the captain] should be the last person to leave her'. This is, however, very far from suggesting that the commanding officer should not leave his ship at all.

The concept of the 'captain going down with his ship' has long been tacitly accepted not only in naval circles but also in certain civilian ones, and references in newspapers to captains doing this are almost invariably couched in laudatory – or, at the very least, non-condemnatory – terms. On 22 June 1893 the British Mediterranean Fleet was preparing to anchor off the Lebanese port of Tripoli (now Trablous) when, owing to confused orders, two battleships collided while attempting to execute a turn, HMS *Camperdown* hitting the flagship, HMS *Victoria*. Many died, including the commander-in-chief Admiral George Tryon, but *Victoria*'s commanding officer, Captain Maurice Bourke, survived. Back in London, the wife of Captain Gerard Noel, who had been commanding HMS *Nile* and had witnessed the disaster, wrote to her husband telling him that 'I do wish Captain Bourke had stuck to his ship. He will never have such prestige again. Never. Everyone says the same'. Thus, Mrs Noel and her London friends were not only aware of the practice but were also clearly in favour of it.

Furthermore, the concept is still alive, as evidenced by a 1996 official reappraisal of the loss in 1945 of USS *Indianapolis* (CA-35), commanded by Captain Charles McVay III. In a top-secret operation, *Indianapolis* delivered crucial parts of the two atomic bombs to be used against Hiroshima and Nagasaki to the island of Tinian, and then set off for Leyte in the Philippines on the return voyage. McVay's orders were to zigzag if a submarine threat existed, but by that stage in the war very few Japanese submarines remained operational and the Philippine Sea was considered to be safe. Nevertheless, on 29 July, McVay zigzagged during daylight hours,

reverting to a straight course only with the approach of darkness. That evening, however, *Indianapolis* chanced to pass the Japanese submarine *I-58* (Captain Hashimoto Mochitsura), which launched six torpedoes, scoring hits with four. *Indianapolis*, with 1,119 aboard, took just twelve minutes to sink. Though it is estimated that 800 survived the sinking, a variety of errors and misunderstandings meant that they were not found for five days, by which time only 320 remained alive. The sinking was a tragedy for which McVay, one of the survivors, took immediate and full responsibility, but, unusually for the US Navy, he was court-martialled for losing his ship. He was found guilty, although the sentence was the most lenient available to the court, involving only a loss of seniority.

The way in which McVay had been treated caused considerable ill-will among sections of the US Navy and the public, a feeling that was heightened when in 1966 McVay, by then a rear admiral on the retired list, donned his uniform and committed suicide. The controversy continued and an official review was conducted in 1996 by a naval lawyer, Commander R. D. Scott. He commented that 'The Navy has never challenged Captain McVay's uncorroborated account that he did not *go down with his ship* [my italics] because he was swept over the side by a wave'. This is a most unusual allegation, not least because it was made by a serving naval lawyer in an official document and contains a very clear implication that McVay (and presumably other captains in similar situations) had some obligation to 'go down with the ship'.

Sometimes things do not turn out quite as the captain had intended. Following the battle of Tsushima in 1905, the captain of the Russian battleship *Admiral Nakhimov* went down with his ship but floated back to the surface and was found unconscious but still alive by some Japanese fishermen. Similarly Commander Usher of HMS *Valerian* also had every intention of going down with his ship when it foundered in the Caribbean in 1926, but he was hit on the head by a falling spar, as a result of which he too floated back to the surface still unconscious and was pulled on to a raft and rescued. Aware of such a danger, on several occasions in the Second World War Japanese captains had themselves tied to the binnacle by their crewmen just before the ship went down, thus ensuring that they did not accidentally survive.

Quite why some captains consider it necessary to go down with their ships and others do not is unclear and certainly does not seem to have depended on the speed at which the ship has sunk. During the Second World War, Captain Makeig-Jones went down with HMS *Courageous* when she sank on 17 September 1939, as did Captain D'Oyley-Hughes of HMS *Glorious* on 8 June 1940. But when another carrier, HMS *Ark Royal*, was torpedoed on 13 November 1941, her captain and crew fought for a day to save her. However, when it was eventually realised that her loss was inevitable she was abandoned in good order, and her commanding officer, Captain Maund, was the last to leave. There has never been any suggestion that Maund should have remained with his ship. Similarly, when the destroyer HMS *Kelly* was sunk in action on 23 May 1941, her commanding officer, Captain Lord Louis Mountbatten, survived, and nobody – as far as is known – thought any the worse of him for having done so. Similarly, Captain Tennant, in command of *Repulse* when she was lost on December 1941 survived, was rescued and went on to serve with distinction throughout the war.

In the strictest sense it could be argued that 'going down with the ship' is, in some respects at least, an abandonment of responsibility. Most immediately, the absence of the captain makes the next senior surviving officer responsible for assembling the survivors and for doing his best to ensure that they remain alive until rescued. Once rescued, the same officer must then explain the circumstances of the loss to the naval authorities, even though he may not have been in the captain's confidence at the time. Indeed, in many navies it is the practice that the captain and his second-in-command should be in physically separate parts of the ship to ensure that one explosion cannot kill them both, as were Langsdorff and Kay aboard *Graf Spee*.

The decision to go down with the ship is made in unforeseen circumstances and, at the risk of

stating the obvious, the motives of those who have done so can only be guessed at. In some cases the commanding officer may have felt a sense of failure at losing his ship, and the possibility of court martial and disgrace may have had some bearing on his decision. Yet there are others – for example, Glasford of the *Acasta* – who clearly did far more than could have been expected of them but still chose to follow this course. Whatever the case, it must take great personal courage for a commanding officer to force himself to remain aboard his ship as it sinks, when all his senses must be urging him to attempt to escape.

It is certain that Captain Langsdorff took his decision alone and there is no question of him having been under any outside pressure. He realised that he had made a fatal error in taking his ship into 'the trap of Montevideo' although the bigger mistake may well have been heading for the Plate Estuary in the first place. He was not, however, prepared to attempt some final gesture by taking his ship to sea in what would have been a doomed undertaking, resulting in large-scale loss of life on both sides.

Notes

1. Some British newspapers alleged that the flag was that of the former Imperial Navy. This was not so, as stated by an eyewitness, Rasenack: 'Morgens fand man ihn in voller Uniform in sienem Blute auf der Kreigsflagge liegend, die auf *Graf Spee* bei seiner letzte Fahrt geweht hatte.' (In the morning he was found in full uniform, covered in blood, lying on the battleflag which had flown over the *Graf Spee* in its final voyage.) Rasenack, op cit., p. 198.
2. Many of the crew survived the sinking, but only one was ever rescued.
3. He was awarded a posthumous Victoria Cross on 17 December 1946.
4. *The King's Regulations and Admiralty Instructions for the Government of His Majesty's naval service*. 1913 (Volume 1) – p. 180.

PART IV
Conclusions

CHAPTER 24

Conclusions

The Battle of the River Plate has exercised a unique fascination in naval history. Despite the German invasion of Poland and the declaration of war by Britain and France, the Second World War on mainland Europe had been characterised by such limited activity that it had been christened the 'phoney war'. On the other hand, there had been some naval activity. The first major British warship to be lost in the war, the aircraft carrier *Courageous*, was sunk by *U-29* on 17 September 1939 with 518 men lost, including the captain. Then came an even greater German success when, on 14 October 1939, *U-47* penetrated the main British naval base at Scapa Flow and sank the battleship *Royal Oak*, with 833 men lost. *Scharnhorst* and *Gneisenau* conducted a brief operation in late 1939 which included sinking the British armed merchant cruiser *Rawalpindi* on 23 November 1939.

It gradually became known that a 'pocket battleship' was at large and then came the Battle of the River Plate, the entry of the *Graf Spee* into Montevideo, its departure and destruction, and, finally, Langsdorff's suicide. While the actual engagement took place at sea, well out of sight of land, the denouement was played out in full public gaze ashore in Montevideo and Buenos Aires, and gained global attention.

In all this *Graf Spee*'s commanding officer, Hans Langsdorff, proved to be a particularly sympathetic figure. He had never killed any victims in his commerce-raiding activities; he was respected, even liked, by his prisoners; indeed, one of his English prisoners, Captain Dove, wrote a book, published in early 1940, which gave a unique, closely-observed and sympathetic insight into Langsdorff as a man. Finally, his suicide awoke echoes of the 'captain goes down with his ship' in the popular imagination.

The Deutschland-class

The original reason for building the three-strong Deutschland-class was quite simple – to replace three very elderly battleships. This seems to have pre-dated the initial operational requirement, which was for a ship which would prevent French incursion into the Baltic in the event of a war between Germany and Poland. Largely for reasons of morale in both the navy and the general public, the ships were designed right up to the limit of size (they actually exceeded it, but that was not known until later). The diesels were installed primarily because they were available and the 28cm guns were the largest that could be accommodated in the fixed-size hull – they were also the largest the Germans thought they could get away with without alarming Britain and France too greatly. When the need to prevent French warships reaching the Baltic receded, the ships needed a new role, and they seemed very suitable for commerce-raiding, based on the precedent of the First World War.

The three ships of the Deutschland-class were often seen abroad in the years 1935–39. As with any warship, they *looked* impressive, particularly to the politicians, the press and the public. They appeared 'modern' and the two triple 28cm turrets, which dominated the design, gave spectators a feeling of sheer power. Indeed, the term 'pocket battleship' (which was never used in Germany) implied a capability beyond its size. If the Germans did not use that phrase themselves, however, they had an equally misleading mantra of their own: outguns anything faster; faster than anything that outguns them. And this came to be believed by both the Germans – not least, *Graf Spee*'s own crew – and many of her potential antagonists.

Although the use of diesels in the Deutschland-class was often quoted with admiration, it was never repeated and all succeeding classes to be completed reverted to steam. There was one design – the P-class – which would have had diesels, but no keel was ever laid.

The two triple 28cm turret arrangement was not repeated either. The Scharnhorst-class was originally intended to be a successor to the Deutschland-class, as a new commerce-raider, but

faster and with added protection. These ships would originally have had two triple 28cm turrets and displaced some 19,000 tons, but the admirals insisted that there must be three turrets, which added some 6,000 tons.

So, Langsdorff was given a ship which had been designed by others to meet another operational requirement and which had many shortcomings. But, as with any warship commander, his job was to make the best use he could of it.

Replenishment at Sea

One feature of the *Graf Spee* operation which was an undoubted success was the use of the purpose-designed support ship *Altmark;* the concept was sound and Dau proved to be an excellent commander. There were only two problems. One was the under-estimation of the requirement for carbonic acid, which must have been due to an oversight or miscalculation by the logistic planners before *Altmark* sailed. The other was the length of time it took to conduct the oceanic transfers, using astern-streaming for the fuel and motorboats for the solid stores.

Langsdorff's Experiences

Langsdorff was served by a disciplined, professional and skilled crew, but there were several operational features of the battle where he was let down badly:

- The incorrect identification, first of *Ajax* and *Achilles* as destroyers on the morning of the 13th and, secondly, of ships seen offshore on the 14th as a battlecruiser and aircraft carrier.
- The seeming inability of the gun control system to enable the two 28cm turrets to engage more than one enemy at a time.
- The total failure of the 15cm battery to score a single hit.
- The non-availability of the Arado aircraft on the day of the battle.
- The slowness of *Graf Spee* compared to her adversaries, partly due to design, but accentuated by the growth on the ship's bottom.

Once in Montevideo, Langsdorff was faced by three options; to go out fighting, leading to almost inevitable destruction and many deaths; to submit to internment; or to destroy his ship. The first was impossible to him on humanitarian grounds, the second was impossible on political grounds, leaving the third as the only possible choice.

Was It Worthwhile?

Between September and December 1939 *Graf Spee* sank nine ships totalling 50,089 gross register tons (GRT). The cargoes that were lost to Britain as a consequence were not serious: essentially some maize, meat, zinc and wool. On the other hand, German armed merchant cruisers showed that a converted merchantman with a relatively light armament and much smaller crew could achieve as much if not more than *Graf Spee*. To take just three examples: *Atlantis* (602 days at sea), sank or captured twenty-two ships (144,384grt); *Pinguin* (357 days) sank or captured twenty-eight ships (136,642grt), and *Kormoran* (351 days) sank or captured eleven ships (68,274grt). U-boats were, of course, even more effective. In comparison *Graf Spee* showed a massive degree of overkill.

Even as early as 20 November 1939, when *Graf Spee* had just commenced its return to the Atlantic following its poorly rewarded Indian Ocean foray, Rasenack, a thoroughly loyal officer, was recording that 'It becomes increasingly clearer that while it is true that a *Panzerschiff* on a raiding voyage has a morale and strategic effect on the enemy, the actual return in proportion to the costs involved is small. A cruiser U-boat would be ideal for such an operation …'[1] Dau aboard the *Altmark*, who would probably have had no opportunity to compare notes with Rasenack, came to the same conclusion, i.e. that a U-boat could have achieved as much as *Graf Spee* at far less cost.

There was one more commerce-raiding operation by a Deutschland-class *Panzerschiff, Admiral Scheer, Graf Spee*'s sister-ship, which sailed from Germany in late October 1940 and returned safely on 1 April 1941. In the course of that voyage the ship steamed over 46,000 nautical miles

(85,000 km), repeatedly evaded significant British forces searching for it, and sank seventeen merchant ships (113,223grt). But one success does not justify the scheme as a whole.

Langsdorff

Langsdorff's experiences give a telling example of the many responsibilities and problems facing a commanding officer, particularly of a warship on an independent mission. The captain's position is very powerful and of necessity he *commands*. He may from time to time, as did Langsdorff, consult his juniors but obviously cannot do so in battle. His juniors may offer him advice or suggestions, or remind him of his orders, as Diggins did on the morning of 13 December, when he reminded his captain of the order to avoid battle. None of these, however, can detract from his ultimate responsibility.

The most significant few minutes in the whole voyage were those when Langsdorff recovered consciousness after having been knocked out. The blast which caused this must have been very close, but significantly it caused him no other wound – indeed, it may have been the shell that took off Grigat's legs, which is known to have happened as the latter was leaving the *Vorturm*.

That those around him considered the situation very serious is demonstrated by the fact that, while he was still unconscious, they sent for the second-in-command, Kay, to take command. Any person recovering from such a traumatic event suffers from a period of 'grogginess' where the mental faculties are not functioning at their full capacity and normal speed. The duration of such a recovery period are very variable, but it would appear that Langsdorff, through sheer strength of character, was able to resume his duties, although whether he was fully in possession of all his faculties is arguable, and there are those who consider his behaviour and decision-making after his recovery as being at considerable variance with what had gone before.

The Slippery Slope

As with most disasters, what happened to *Graf Spee* was not the result of any single bad decision, but rather of a succession of minor changes to plan, one leading inexorably to the next:

- The decision to conduct a foray on the South American coast before turning north for the return home.
- Long-range shelling of *Doric Star*, which enabled that ship to transmit an accurate distress message.
- The change of target from Santos Bay to the River Plate.
- On sighting the British ships, to attack immediately.
- The decision to head for Montevideo.

Once he had decided to head towards Montevideo – to which he later referred to as 'the Montevideo trap' – Langsdorff's fate was more or less sealed and he had run out of alternatives.

Envoi

Langsdorff was under immense strain. This was the first undertaking by the *Kriegsmarine* in this war in distant waters, and there was no possibility of any support, other than logistic re-supply from *Altmark*. He suffered from the loneliness of command and it was perhaps telling that he found some relaxation in his chats with Captain Dove.

It is a curious feature of this episode that almost everybody behaved very well. The naval officers and sailors on both side conducted themselves in the best traditions of their respective services. Of course, it was war, so there was fighting, death and injury, but those were inevitable. Even Adolf Hitler publicly assumed personal responsibility for the destruction of *Graf Spee*. Above all, however, towers the figure of Hans Langsdorff, who was, in the words of Captain Dove, who came to know him well, a 'very great-hearted gentleman'.[2]

Perhaps the most moving comments on Langsdorff's death was that made by Captain H.

McCall, RN, the British naval attaché in Buenos Aires, in his official report to the Admiralty, a document classified Secret at the time and in which he may be assumed to have freely expressed his own feelings. His report ends:

Since starting to draft this letter the news has been received of the suicide of Captain Langsdorff. I attribute his preferring to shoot himself after the event rather than being blown up with his ship to his principle that it was his duty to be with his ship's company until after every possible provision had been made for them in Argentina. He was obviously a man of very high character and was very proud of the fact that he had not been the cause of a single death as the result of any of his captures.
[3]

Notes

1. 'Es zeigt sich immer deutlicher, daâ ein Panzerschiff auf Kaperfahrt zwar eine beachtliche moralische und auch strategische Wirkung auf der Feind hat, aber der direkte Schaden in Verhältnis zum Einsatz gering ist. Ideal für solche Unternehmung wäre ein grosser U-kreuzer …' Rasenack, op cit., p. 104.
2. Dove, op cit, p. 56.
3. TNA ADM 1/10723. Naval Attaché, Buenos Aires, 21 December 1939, p. 12.

ANNEX A

German Kriegsmarine Officers' Ranks

Kriegsmarine				
Line officers (1)	Approximate time in rank (2)	US Navy equivalents	RN equivalents	Kriegsmarine medical officers
Kapitän zur See	No fixed times	Captain	Captain	Marine-Generalarzt
Fregattenkapitän		Commander	Commander	Marine-Generaloberarzt
Korvettenkapitän		Lieutenant Commander	Lieutenant Commander	Marine-Oberstabsarzt
Kapitänleutnant	5 years	Lieutenant	Lieutenant	Marine- Stabsarzt
Oberleutnant zur See	3–4 years	Lieutenant Junior Grade	Sub-Lieutnant	Marine-Oberassistenzarzt
Leutnant zur See	2 years	Ensign		Marine-Assistenzarzt
Oberfähnrich zur See	6 months	Midshipman	Midshipman	
Fähnrich zur See	2 years			

Notes

1. In those ranks where there was a possibility of confusion with Army ranks of different status, the suffix 'zur See' (lit. naval service) was added.
2. The figures for time to next promotion are averages and varied between individuals.
3. Officer rank suffixes: Ingenieur (Ing) = engineer; Verwaltung (V) = administration/paymaster; Flieger (F) = aircrew; Marine artillerie (MA) = naval artillery; Musikmeister = band master

ANNEX B

Graf Spee – Officers

Name	First name	Rank	Appointment (where known)
Ascher	Paul	Fregattenkapitän	Senior Gunnery officer
Bludau	Dietrich	Leutnant zur See	
Brutzer	Gerfried	Kapitänleutnant	Torpedo officer
Dietrich	Hans	Leutnant zur See	
Diggins	Kurt	Oberleutnant zur See	Flag Lieutenant to Langsdorff
Dittmann	Werner	Leutnant (Sonderführer)	Prize officer. *Hamburg–Amerika Linie*
Drews	Herbert	Leutnant (Verwaltung)	Supply
Foerster	Fritz	Oberleutnant zur See (Ingenieur)	Engineer
Fröhlich	Herbert	Leutnant	Communications[1]
Fromme	Gerhard	Kapitänleutnant	
Fuchs	Hans	Korvettenkapitän	
Graff	Harmuth	Leutnant (Ingenieur)	Engineer
Habel, Dr	Rolf	Marine Oberstabsarzt	Doctor
Habelt	Erich	Leutnant	
Harting, Dr	Friedrich	Marine Stabsarzt	Doctor
Herzberg	Bruno	Leutnant (Sonderführer)	*Hamburg–Amerika Linie*. Senior prize officer
Hirsemann	Helmuth	Kapitänleutnant	

Höpfner	Robert	Korvettenkapitän	Second Navigator
Kay	Walter	Kapitän zur See	Executive Officer/ second-in-command
Kertzendorff, Dr	Franz	Marineoberstabsarzt	Senior Surgeon
Klopp	Karl	Korvettenkapitän (Ingeneiuer)	Chief engineer
Klette	Hans-Gunther	Leutnant zur See	
Kottman	Hermann	Leutnant zur See	
Kuhn	Joachim	Kapitänleutnant	
Kumer	Heinz	Leutnant zur See	
Kunz	Kurt	MusikMeister	Bandmaster
Langsdorff	Hans	Kapitän zur See	Commanding officer
Liebing	Erich	Oberleutnant zur See (Ingenieur)	Engineer
Meusemann	Kurt	Korvettenkapitän	2nd Gunnery officer
Mueller	Albert	Korvettenkapitän (Ingenieur)	Engineer
Mumm	Dietrich	Leutnant zur See	
Nakoetter	Heinrich	Korvettenkapitän (V)	Supply
Peerenboom, Dr	Oskar	Marine Stabsarzt	Doctor
Rasenack	Friedrich-Wilhelm	Oberleutnant zur See	Gunnery technical officer
Reckhoff	Johann	Kapitänleutnant	
Rickeberg	Wolfgang	Leutnant zur See	
Schauenburg	Rolf	Oberleutnant zur See	
Schieber	Alexander	Oberleutnant zur See (Ingenieur)	Engineer
Schiebusch	Giinter	Kapitänleutnant	Watchkeeper
Schünemann	Heinrich	Leutnant (Sonderführer)	Prize officer. *Deutsche Ost-Afrika Linie*
Schwebke	Hans-Joachim	Leutnant zur See	

Smitt-Urquart		Leutnant zur See	Transferred to *Altmark* as OIC guard 14 October
Sörensen	Paul	Leutnant (Sonderführer)	Prize officer *Hamburg-Amerika Linie*
Sparbier	Hartwig	Leutnant zur See	
Spiering	Detlef	Oberleutnant (Luftwaffe)	Aircraft observer
Tatsch	Georg	Leutnant zur See	
Ulpts	Gerhard	Leutnant (Sonderführer)	Prize officer *Hamburg Südamerikanische Dampfschifffahrts-Gesellschaft*
Vagt	Karl-Heinrich	Oberleutnant zur See	
Von Carlowitz-Hartizsch	Hans-Georg	Oberleutnant zur See	
Wattenberg	Jürgen	Korvettenkapitän	Chief Navigating Officer
X (name unknown)		Chief Inspector. Naval Official (Beamte)	Coding specialist
Ziegler	Kurt	Kapitänleutnant	

Note

1. Fröhlich embarked as a communications warrant officer, mainly employed in monitoring and deciding enemy transmissions. His work was so outstanding that Langsdorff commissioned him whilst at sea.

ANNEX C

Langsdorff's Appreciation of the Situation: 26 November 1939

On 26 November, whilst replenishing from *Altmark* and carrying out maintenance on the machinery, Langsdorff reviewed the situation and, as was his practice, he recorded his findings in the *Kriegtagesbuch* (war diary). His major conclusions were:

- **Armament.** There were no important deficiencies.
- **Fuel.** Having complete replenishment that day, *Spee*'s bunkers contained 2,841 tons, sufficient to remain at sea until the end of February 1940. A further 3,600 tons was still available in *Altmark*.
- **State of Hull.** Apart from significant growth on the ship's bottom (barnacles, etc.) the general state of the hull was good.
- *Spee* would continue to cause damage and disruption to enemy shipping as long as possible in order to tie down the greatest possible enemy forces in defence of trade. In pursuing this course the instructions from Germany (that the enemy must obtain no prestige by the early destruction of any of the pocket battleships) must be borne in mind. In the abnormally good visibility of the South Atlantic this involved keeping out of sight of enemy cruisers, since there was no great possibility of either shaking off or bringing to decisive action a fast 'shadower' for, by day or on a moonlight night, the range of visibility was practically outside the decisive range of *Spee*'s armament.
- *Spee* should leave an area of operations as soon as it was clear that the enemy had been alarmed. Action with naval forces should be avoided, since a chance hit on *Spee* might necessitate premature abandonment of attacks on shipping.
- *Spee*'s machinery required a dockyard overhaul in the near future. Already in October 1939 this had been envisaged for January 1940. The period of commerce raiding was therefore nearing an end and in consequence the necessity for avoiding action damage was no longer so pressing. If *Spee* were to close the range it could be anticipated that her powerful armament would at least so damage any opponent (with the exception of HMS *Renown*) as to eliminate him as a shadower. On the other hand it would be difficult to achieve decisive results or shake off fast shadowers in the bright moonlight nights of the South Atlantic.
- **General Observations**
  - *Spee*'s most important achievement so far was the dislocation of trade and the tying down of enemy naval forces. Her sinkings alone could not be regarded as important to the cause of the war, though these in conjunction with German U-Boat and mining operations belied England's claim to supremacy at sea. In spite of the powerful naval forces disposed against *Spee* no effort had apparently been made to carry out searches of areas used by German raiders for storing and fuelling.
  - Absence of sinkings in the South Atlantic during the past month would probably result in a relaxation in enemy protective measures. This favourable situation must be utilised and further disruption caused in the South Atlantic before returning to Germany.
- Finally Langsdorff decided that, on completion of minor machinery overhaul, he would operate again on the Cape route in the area of the *Trevanion*'s sinking until about 6 December 1939 and then, dependent upon the state of the machinery, either return home or operate against the River Plate traffic. Meanwhile, *Altmark* was to occupy a waiting area appropriate to either of these eventualities.

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