
BRITISH AVIATOR
BP SHIPPING
100

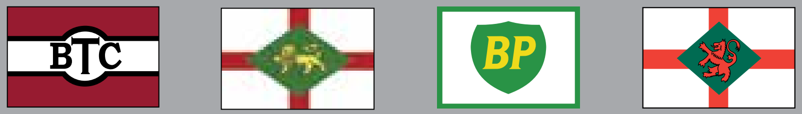
The pessimist complains about the wind;
the optimist expects it to change;
the realist adjusts the sails.

WILLIAM ARTHUR WARD

Writer and poet, 1921-1994

BP SHIPPING 100

BP Shipping is the oldest continually operating 'BP heritage' company within the BP group. It was formed on 30th April 1915 as the British Tanker Company, before changing its name to the BP Tanker Company in the 1950s, and subsequently BP Shipping in the 1980s. From the 19th century to this day, all merchant ships fly the house flag of the ship's owner. In 1926, the British Tanker Company introduced a new house flag carrying the St George's Cross on a white background with a green lozenge across its intersection, bearing a golden lion, 'passant guardant', a symbol of Persia. This remained until 1954, when a red lion 'rampant', substituted the golden beast. Today, the same house flag is flown from every vessel in BP Shipping's fleet. It is a symbol of continuity and recognised across the world shipping industry as representing 100 years of maritime achievement and service.



Note

The Anglo-Persian Oil Company (APOC) was incorporated in 1908. In 1935, APOC was renamed the Anglo-Iranian Oil Company (AIOC) and in 1954, it became the British Petroleum Company (BP), one of the antecedents of the modern BP plc. BP plc is the parent company of the BP group of companies. References to 'the parent company' in this history relate to BP plc and its antecedent companies. The British Tanker Company Limited (BTC) was incorporated in April 1915 as the shipping arm of the Anglo-Persian Oil Company Limited (APOC). BP Shipping Limited is a part of the BP group of companies. References to 'the Tanker Company, the BP Tanker Company and BP Shipping' and 'BP's shipping arm' in this history relate to the legal entity providing shipping and marine services to other companies in the BP group of companies.

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BP SHIPPING
100

RIDING THE WAVES

BP SHIPPING
1915-2015
A CENTURY OF MARITIME ACHIEVEMENT AND SERVICE

CONTENTS

1

A HISTORY

2

VOICES AND VESSELS

Foreword

Welcome to a remarkable book telling the story of how BP has shipped oil and gas to markets and customers around the globe for the past one hundred years.

Shipping is a unique profession. It throws people close together at sea – working as one team day and night, week in, week out. It separates partners and parents from their families and friends for months at a time. And it pits human endeavour against some of the most extreme and challenging conditions in nature where safety will always be paramount.

It is a calling that demands great strength of character, and many great characters have served BP Shipping with distinction over the past 100 years. This centenary is a welcome and important opportunity to appreciate their devotion to duty, their courage and their pursuit of excellence at sea and ashore.

This story starts back in 1915 when the fledgling company that became BP owned just one oilfield, one pipeline, one refinery – and just one single ship, *SS Ferrara*. The contrast with today is sharp, where BP Shipping operates around 50 oil and gas carriers, with a further 200 large vessels and 400 coastal and barge vessels under charter at any one time. Along the way, the company has earned the respect of its peers in the maritime industry for its contribution and collaboration in ship design and technology and in the safe and environmentally responsible transport of cargoes and personnel.

That journey between then and now takes in hundreds of ships, thousands of BP mariners and their colleagues ashore, and millions of tonnes of cargo transported between BP's wells, refineries and markets in Europe, Asia, Africa, the Americas and the Pacific.

In this, its 100th year, it is fitting that BP Shipping's chief executive joined the business as a 16-year-old navigating cadet. He has brought the experience gained over 44 years of continuous service – almost half of BP Shipping's entire centenary – to the job of leading what is a vital part of BP's global operations.

With some 200 BPS cadets in 2015 following in John Ridgway's footsteps, a great future lies ahead for our shipping business as it sails into its second century.

BOB DUDLEY
Group chief executive, BP plc

British Sailor – 33,000 dwt tanker – at the J. Brown yard on the Clyde, Glasgow, Scotland, in 1952. *British Sailor* was one of dozens of new ships ordered by the BP Tanker Company as British Petroleum expanded in the post-war years.

Introduction

The recruitment advertisement showed a gentleman in a uniform, holding a drink, and standing beside a palm tree on a tropical island. On my 17th birthday, I clambered aboard *British Trust* at 2am in the dark, noisy port of Grangemouth in Scotland. The rain was horizontal. Back home, my parents waited anxiously for a call to say that going to sea was all a big mistake. Yet like so many young seafarers before and after me, I didn't make that call. For I was quickly captivated by the 'work hard and play hard' ethos that is the lifeblood of a career at sea. Every week brought new skills to be mastered, encountering different roles, practices and equipment, working strange hours, experiencing dramatically different cultures and climates. Best of all was meeting new people of every shape, size and nationality, aboard, in port and in numerous countries around the globe.

When I joined the BP Tanker Company in 1971, I had no sense of what had gone before – or the importance of continuity. I didn't have any idea of the activities, standards, professionalism, and competency of the industry. My first Master – Captain Alexander – had joined the British Tanker Company in 1929 – the year of the Wall Street Crash. His last voyage was to be my first. He connected me – and countless others – to that long continuous chain of tradition and experience that runs through the modern BP fleet of today and which each generation carries forward and builds upon.

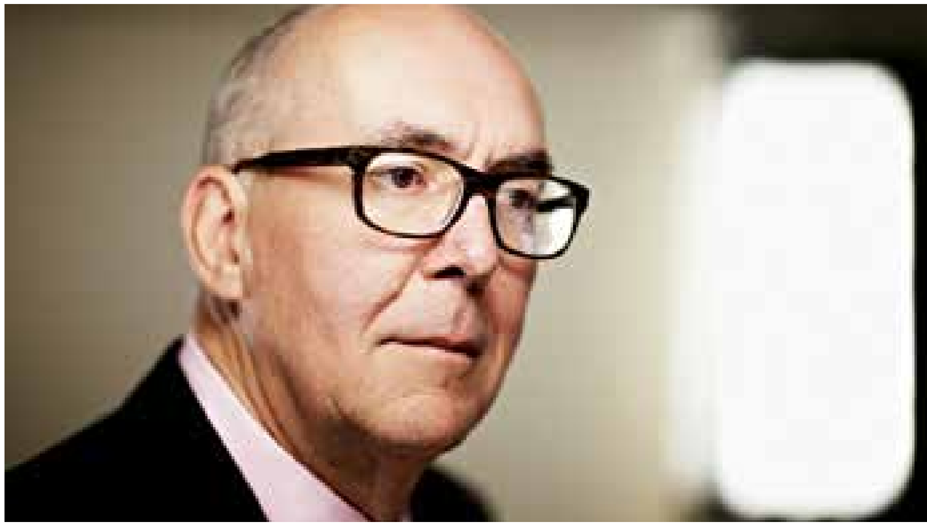
While continuity underpins this company, it has still had to face and manage substantial change across its 100 years. The greatest challenge to organisations is to achieve the right balance in order that a business can manage risks, grow and adapt successfully. This history of BP's shipping business – so aptly called *Riding the Waves* – encapsulates and describes this great tension between continuity and change. It is why when I am asked to describe BP Shipping today, I characterise it as 'the most modern old company in the world'. For the activity set we undertake hasn't changed that much in 100 years of shipping. Our principal job is to transport oil from A to B, safely and securely. We're doing that now, in the 21st Century, with very modern ships, with very modern equipment, and with very modern people, who hold very modern ideas. Which means we are planning for changes that will likely occur over the next 50 years, but based on 100 years of experience and tradition.

Predicting the future is a difficult business. In 1959, Henry Longhurst wrote in his book commemorating BP's first 50 years that "there is talk of submarine tankers; of tankers towing behind them vast polythene bags full of oil; and perhaps of whole new fleets transporting the world's colossal surplus of natural gas, reduced by freezing and liquefying it." The submarine tanker and the polythene bag are ideas whose time has not yet come. But BP Shipping has designed, owned and operated some of the finest liquefied natural gas ships in service across the world today, as well as helped to create new kinds of floating oil production vessels that can connect to pipelines on the seabed, produce oil from the underlying field, process it on board, and discharge it to traditional tankers. Our people at sea and ashore have surpassed Longhurst's vision of the future of the BP Tanker Company by adapting and applying their marine skills to the new challenges of offshore oil and natural gas.

For it is great people who are at the heart of this centenary story. From the pioneers who built our first fleet in the 1920s; those who served so courageously in conflicts around the world; and those who made such momentous contributions; to tanker safety and environmental performance by introducing inert gas systems, crude oil washing and double-hull tankers, among countless other achievements. Many thousands have served this company at sea and ashore. Today, we have 11 offices around the world, including London, Houston and Singapore, plus 50 floating offices with seafarers literally all over the planet. They are all an important part of this centenary story.

After 44 years, I may not have found the tropical island that the recruitment poster offered, but it is a complete honour and privilege to lead BP Shipping in its centenary year. I hope you enjoy this history of our great company and its role in the success of BP, and the evolution of the world economy over the past 100 years.

JOHN RIDGWAY
Chief executive officer, BP Shipping Ltd



British Ruby – 155,000 m^3 liquefied natural gas carrier entered the BPS fleet in 2008. One of a new Gem class of vessels fitted with revolutionary cargo gas-burning diesel engine technology, which has significantly cut emissions.

Above: *British Star* – 37,000 dwt tanker – launched in 1958 from the Cantieri Riuniti Dell yard in Italy. She was one of six ships comprising BP's first overseas order, and was described as "more handsome than her British counterparts but less reliable".

Right: *Alaskan Explorer* – 185,000 dwt crude carrier – transporting crude oil from Valdez terminal in Alaska, US. Launched in 2008, she is one of four ships built with double hulls, reserve propulsion, and steering systems to navigate these environmentally sensitive waterways.

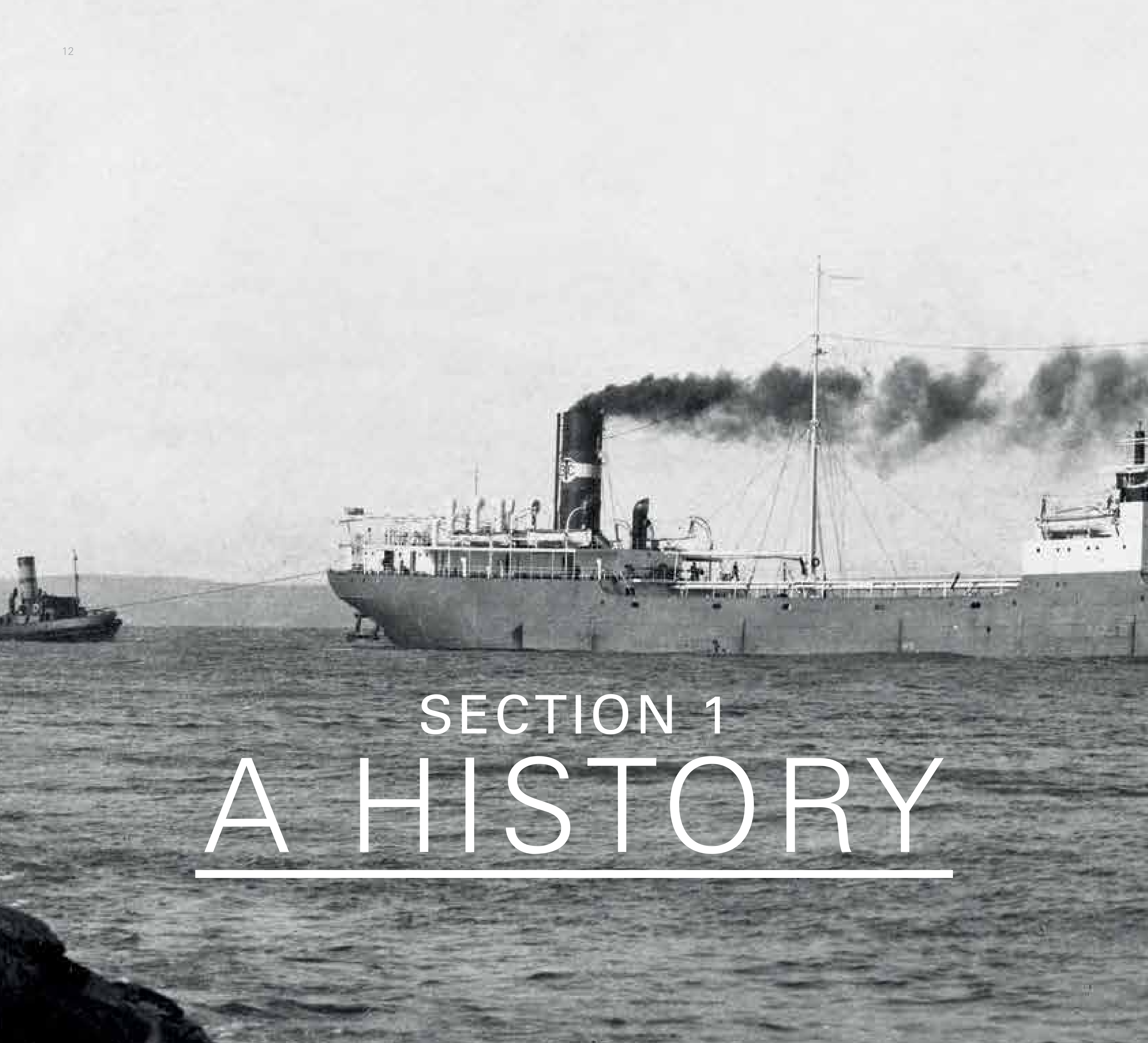
Prologue

To understand the history of BP Shipping requires an appreciation of some of the key events – political, military, economic, social and environmental – that shaped the past 100 years and marked the evolution of the Age of Oil and the development of a major energy company – BP plc. For BP Shipping rarely made its own weather. Instead, it rode the great waves of the past century, which, at times, propelled it forward to unfettered growth and success, but in its darkest hours, came close to overwhelming it.

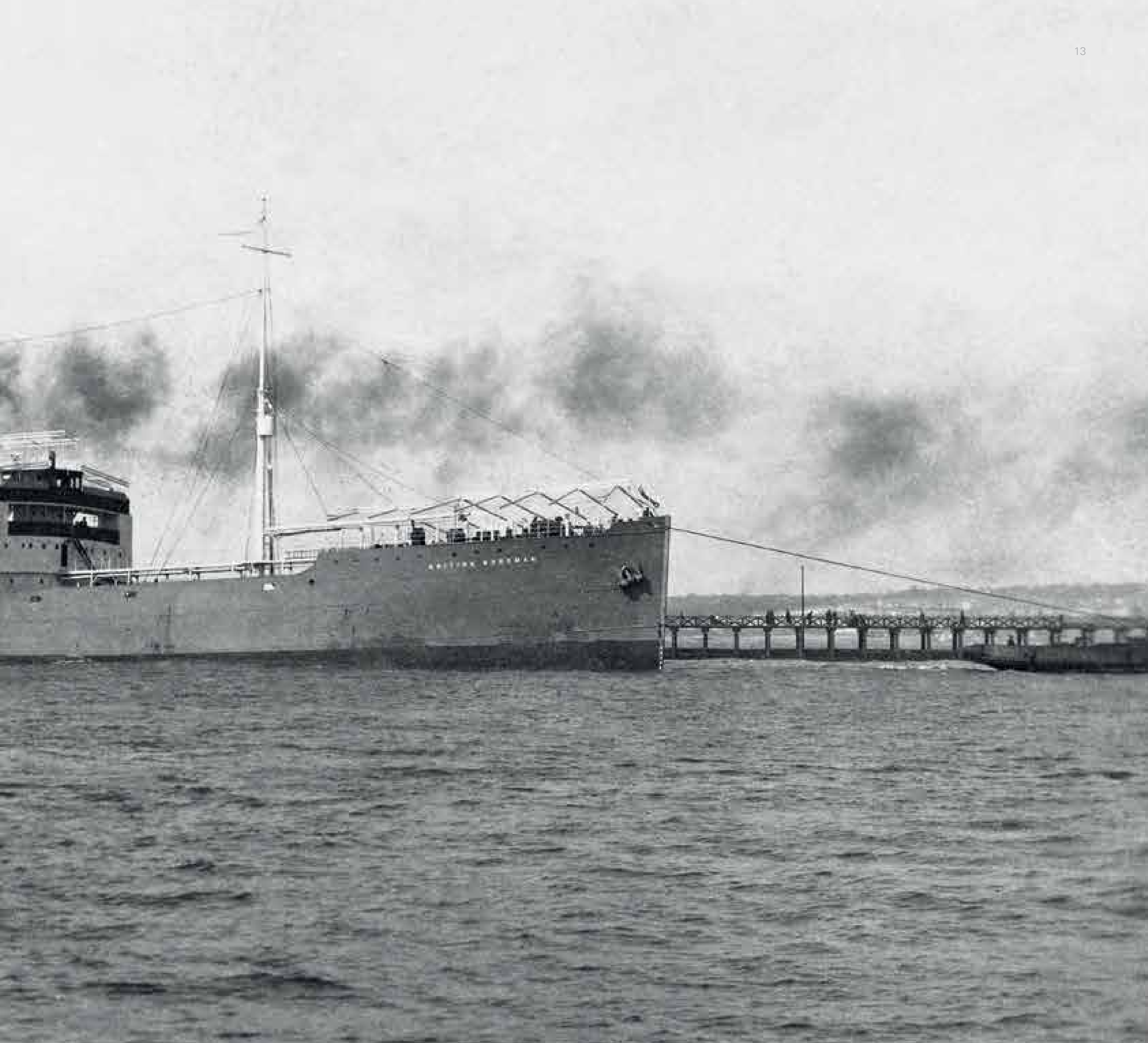
Section 1 – 'A History' – is the broad canvas on which the story of BP Shipping is painted through an account of its history between the years 1915 to 2015. But broad brushstrokes cannot tell the whole story. Detail and colour come from the accounts of individual people and individual ships – on what it was like to live and work at sea, to face risk and danger, and to sail on some of the great vessels that formed one of the world's leading merchant shipping lines. Section 2 – 'Voices and Vessels' – seeks to provide this counterpart to BP Shipping's history by offering some insight into the world of BP's merchant seafarers and some of the notable vessels down the years: the challenge and hardship, courage and service, expertise and innovation, as well as the 'day-to-day' of food, leisure and 'lamp-swinging'.

Inevitably, within these pages, only a sample of voices and vessels has been captured from the many thousands who served at sea and ashore and the hundreds of vessels comprising the 'Tanker Company' fleet over 100 years. Everyone involved has his or her own individual story to tell and each vessel remains particularly special to all who were associated with her. *Riding the Waves* provides a context to understanding the significance of their contribution to maritime history and to the success of the major energy company that is BP today.

British Adventure apprentice conducting shoreside negotiations at Suez, July 1964.



SECTION 1
A HISTORY



1

BRITISH TANKER COMPANY
COMING OF THE OIL AGE: 1915-1945

‘The most terrible thing on God’s earth’

In January 1914, the storm clouds of the impending Great War were gathering. Major empires had chosen sides. A military arms race was almost run. And the spark provided by the assassination of the heir to the Austro-Hungarian Empire lay just months away. The lamps were about to go out all over Europe.

At his desk in the offices of the Anglo-Persian Oil Company on Old Broad Street, London, Charles Greenway was acutely aware of the growing military tension. The fate of his new company lay at that very moment in the hands of Britain’s First Lord of the Admiralty, Winston Churchill and most crucially the recommendations of an Admiralty report due to be published on the 26th of the month. As the first managing director of Anglo-Persian, Greenway had the distinction and the considerable burden of overseeing the development of one of the world’s greatest oil discoveries at Masjid-i-Suleiman in Persia. In 1908, this prolific Persian oilfield established the Middle East as a major new oil region and it represented the foundation stone of what would become the international energy company – BP plc.

The doggedness of entrepreneur William Knox D’Arcy – a co-founder of Anglo-Persian and the financial backing of the Burmah Oil Company, had created the circumstances in which a prolonged exploration effort in Persia had been sustained since 1901. Against the odds, and with money running out, oil was finally struck. Now it was the role of Anglo-Persian to make the discovery a commercial success. Appointed in January 1910, Greenway held a clear vision for Anglo-Persian. It was to be a company of scale, producing, refining, transporting and distributing oil and oil products directly to customers – in short, a fully integrated major oil company. In the first decade of the 20th century, only two companies in the world could credibly make that claim: Standard Oil of the US and Royal Dutch Shell – a merger of Royal Dutch and the Shell Transport and Trading Company.

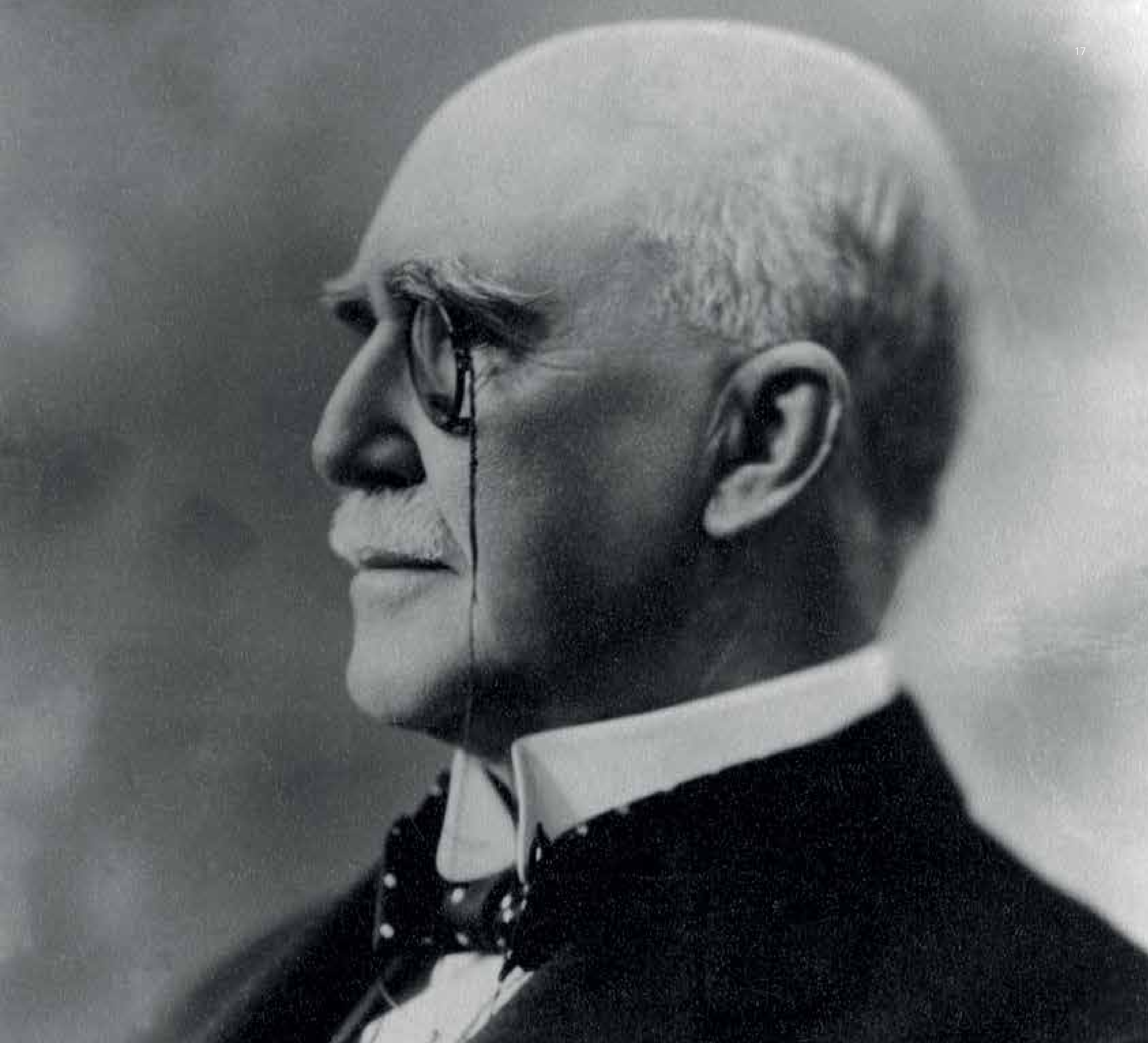
But Greenway’s vision fell far short of the realities that faced him and his company at that time. The building of a pipeline and refinery at Abadan on the Persian Gulf coast to refine and export

Opposite: Charles Greenway, Anglo-Persian’s first managing director.

Right: William Knox D’Arcy, who secured the Persia concession that led to the discovery of the first major Middle East oilfield and the formation of the oil company now known as BP.

Below: No 1 discovery well at Masjid-i-Suleiman, Persia 1908.

Page 15: Tankers loading at Anglo-Persian’s Abadan refinery in Persia, in 1920.



the newly discovered oil had missed deadlines, was over budget, and plagued with technical difficulties in terms of the quality of fuel produced. Furthermore, the company had no organisation or franchise to market the potentially huge quantities of crude oil and oil products to customers in the growing western and eastern markets of the world. Most crucially of all, the company lacked the means to transport its Persian prize to market.

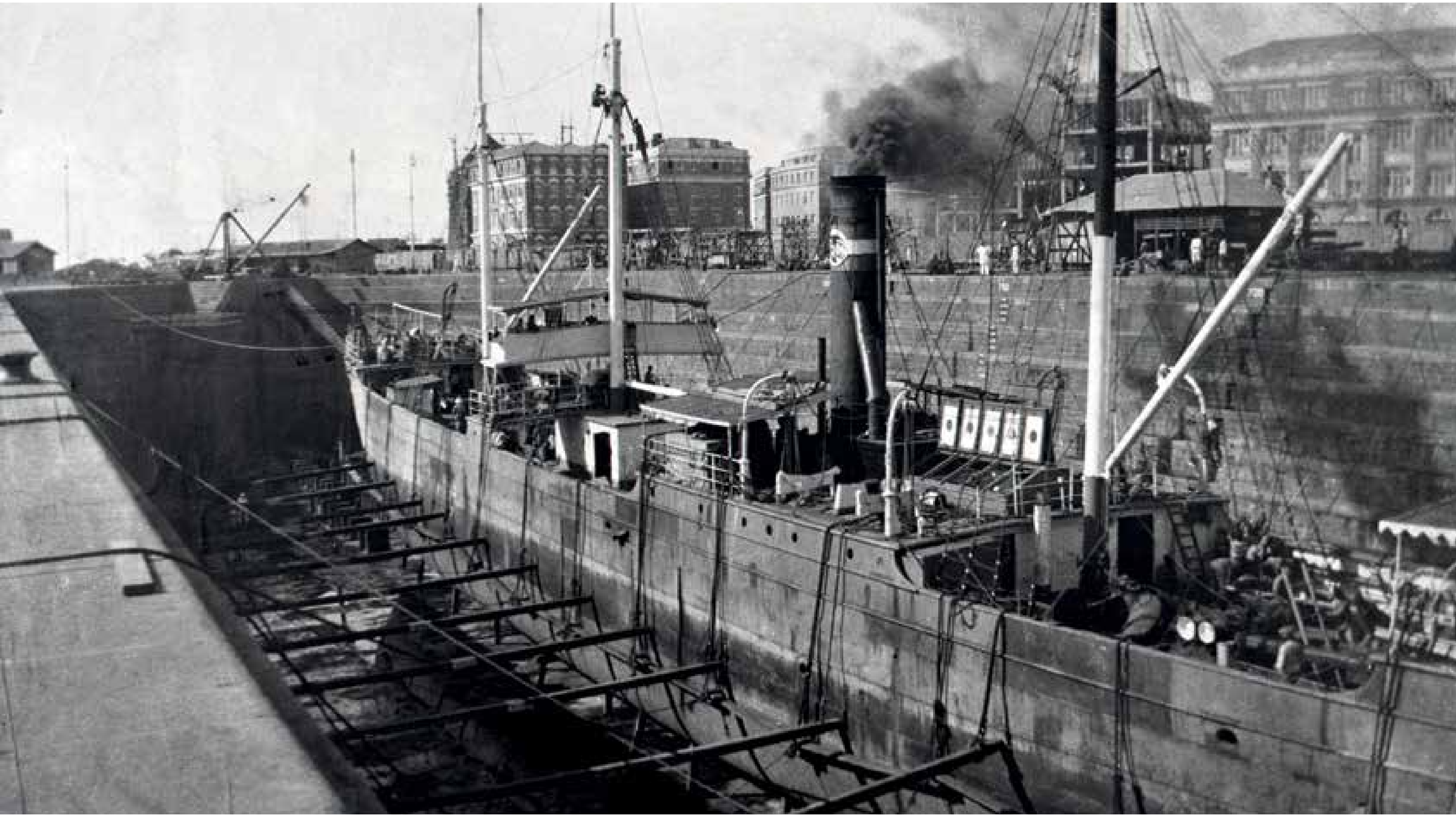
By 1914, it owned just one ocean-going vessel. The 1,650 dead weight tons (dwt) *SS Ferrara* was a cargo vessel, bought in 1912 for distributing oil products contained in individual cases to markets in the Persian Gulf. A company engineer described her as "the most terrible thing on God's earth". The barge *Friesland* was little better. The 1,500 tonner was considered by Captain J. Baillie, the first marine superintendent for Abadan, as "something in the nature of a ship, but with the essential parts left out!" She lacked self-propulsion and had to take steam from the ship into which she was discharging to work her own pumps!

Loading at Abadan was impeded by the shifting nature of the sea floor in the shallow Shatt-'al-Arab waterway, where sand bars formed at certain seasons and restricted the draught of vessels using it. For long periods of each year, the oil had to be first loaded into lighters, such as *Friesland*, and transferred to tankers beyond the bars. It was a costly and often dangerous operation.

The only alternative to owning vessels was to contract directly with others for freight services for Anglo-Persian's oil. With tankers in short supply, world freight rates were rising and unpredictable and the new, financially fragile company could not bear the market risk this would entail. His options limited, Greenway had reluctantly entered into a contract in 1912 with a distributing subsidiary of the Royal Dutch Shell group – Asiatic Petroleum Company (APC). He consoled himself and his fellow directors that the contract "gets us out of one of our difficulties – that of securing tonnage at anything like a reasonable freight."

But such were the problems with the quality of the initial benzene and kerosene produced at the new Abadan refinery, that Anglo-Persian had been forced to rebate some of the sale income to allow for the substandard products to be further refined elsewhere. The result was not only a loss of face; it also heralded a deep financial crisis for the fledgling company. By 1913, a desperate Greenway was forced to turn to friends and creditors to stave off Anglo-Persian's acute cash flow problems. He persuaded two directors – D'Arcy and the chairman, Lord Strathcona, to lend £150,000. Money owing to creditors was increased and cash balances were reduced to a minimum.

Attracted by the immense potential of Anglo-Persian's upstream find and sensing an opportunity to avoid a new competitor in its downstream markets, Royal Dutch Shell began to make overtures. Greenway found such attention unwelcome. He was soon to complain that the Asiatic Petroleum Company had tried to exert unwarranted pressure by warning Anglo-Persian that it "had no right to charter tankers without APC consent." The threat of a takeover by Royal Dutch was a very real one. It was something that Greenway was determined to avoid at all costs. Only one solution would restore his company's finances and keep it out of the hands of competitors. It lay in the most unusual of places – the British Government.



SS Ferrara – Anglo-Persian's first ship, which was purchased in 1912 for transporting oil in individual metal cases. She was sold in 1923 to a new owner in Bombay, India – but was gutted by fire and sank the same year.

'Coaling' a ship was slow, hard, dirty work and once loaded, coal would have to be moved again to keep bunkers close to the steam boilers topped up. It was one of a number of reasons why oil-fired ships began to displace coal-fired in the 20th century.

Churchill's blessing


Getty

First Lord of the Admiralty Winston Churchill, 1914. The First Lord was a civilian and member of the British Cabinet, who headed up the Admiralty board overseeing the Royal Navy.

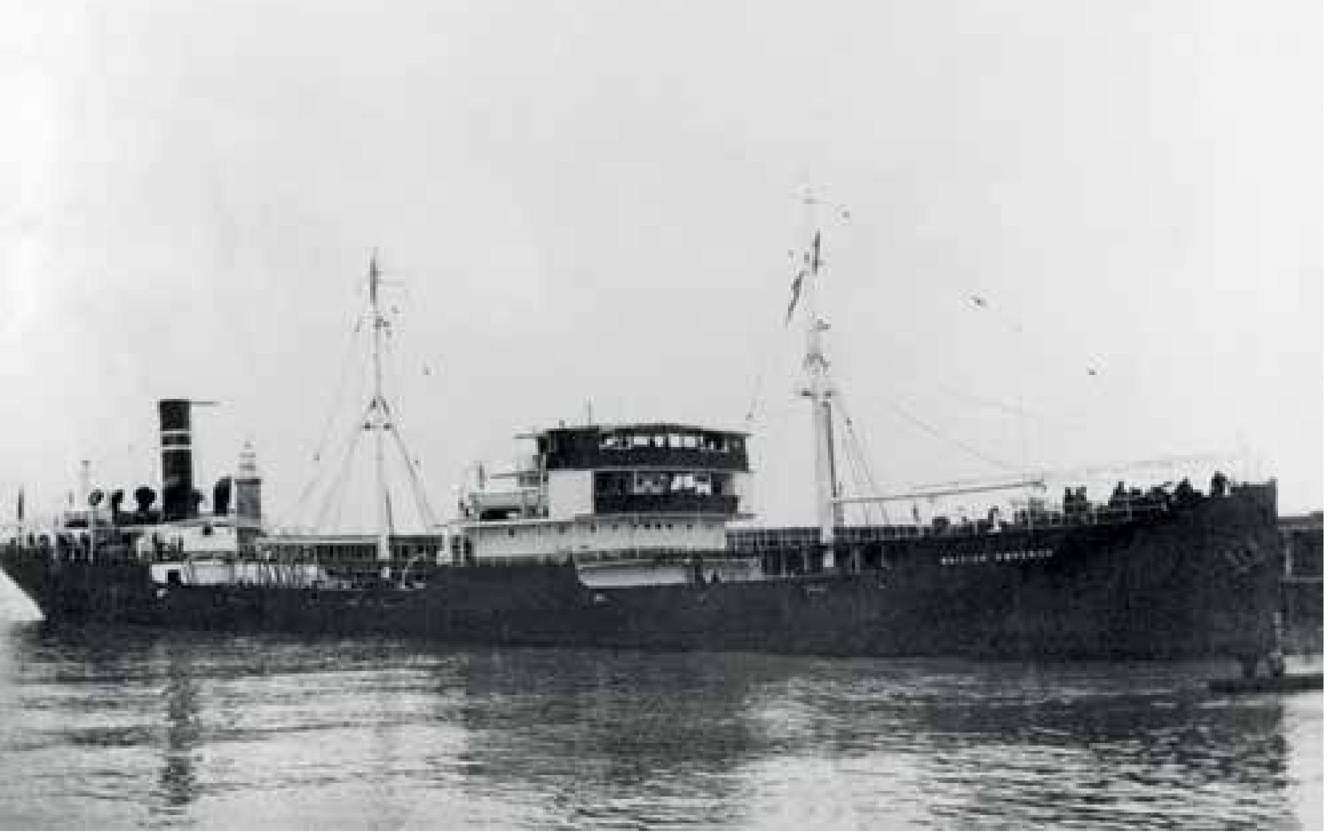
In December 1911, Greenway and Lord Strathcona had been summoned to give evidence to a secret Admiralty oil committee chaired by Britain's Fourth Sea Lord, Sir William Packenham. Since the turn of the century, Britain and Germany had been engaged in a naval arms race, seeking to design and construct larger, faster and better armed capital ships. This had given the British Admiralty a keen sense of urgency in considering the prospects for substituting oil for coal in powering the Royal Navy. Anglo-Persian was naturally keen to make the case for the potential supply of oil from the Persian concession.

The case already had a strong champion in the head of the Navy, Admiral John Fisher. He had closely followed experiments with oil-fired engines in Russia and Italy, although a conversion in 1903 of a Royal Navy ship – *HMS Hannibal* – from coal to oil had been a technical disaster. Nevertheless, work had continued and on the 16th October 1913, a brand new class of ship, the 'fast battleship' was launched from Portsmouth on Britain's south coast. Her unique design incorporated the first 15-inch guns and permitted a larger steam turbine and boiler arrangement to be used to deliver a top speed of 25 knots. *HMS Queen Elizabeth* was significant for another reason. She was Britain's first capital ship to be fuelled solely by oil. Fisher and his political master, Winston Churchill, were attracted not just by the speed that fuel oil permitted for this class of ship; oil also had a much greater energy density, allowed vastly simplified refuelling arrangements, required no stokers, and emitted much less smoke to obscure gun laying than coal. Most importantly, it made ships less visible on the horizon.

Greenway had also recognised the commercial potential of fuel oil for ships and also railways, although his early efforts to interest the Indian Railways in a supply contract had met with little success. In 1912, he had altered the original Abadan refinery plan to incorporate a capacity to produce fuel oil alongside kerosene and benzene. It was to prove a prescient decision. Fuel oil was simpler to produce and was not dogged by the technical problems besetting the Abadan refinery. Royal Navy ships run on fuel oil represented a potentially huge new customer for Anglo-Persian's oil. Better still, if the Government could be persuaded of the strategic importance of a major 'British' source of oil to the underpinning of its imperial, military and commercial interests, then it might be prepared to alleviate the financial crisis in which the company found itself.

During 1913, Greenway played his political and commercial cards astutely. He indicated to the Admiralty that the company would consider entering into a contract for between 200-300,000 tons of fuel oil per year if "given sufficient inducement". He emphasised the significance of reliable oil supplies to the Navy. And he warned of the danger of foreign domination over world oil, which might not only threaten the existence of Anglo-Persian, but also imperil British naval supremacy in time of war. Thinking the ground well laid, Greenway made a proposal to government officials that included: the provision of a subsidy to assist Anglo-Persian to raise £2 million of additional capital; a contract for up to 500,000 tons of fuel oil per year; assistance in securing a concession in neighbouring Mesopotamia (Iraq); and a right for Government to nominate representatives to the Anglo-Persian board.

The proposals soon sailed into heavy political seas. State investment in a private company was anathema for some members of the Government and backbenches. Opposition groups sought to protect the interests of Welsh steam coal production. Even among the Admiralty permanent staff, there remained a strong element which was unconvinced by the case for oil over



British Emperor – 5,500 dwt – BP Shipping's first ship built to order and launched in 1916 from the Armstrong Whitworth yard in Newcastle, England. She served the company for 25 years before being sunk in 1941.

coal at sea. However, the same could not be said of their political head. In a Navy debate in the House of Commons in 1913, Churchill pitched the advantages of fuel oil for naval design, performance and tactics, and its indispensability for national survival. He concluded powerfully: "If we cannot get oil, we cannot get corn, we cannot get cotton, and we cannot get a thousand and one commodities necessary for the preservation of the economic energies of Great Britain."

Now the test for Anglo-Persian was to demonstrate its capacity to source and supply enough oil to fulfil Churchill's ambitions. A Royal Commission on Oil Supply was established which as part of its review, made a field visit to Anglo-Persian's facilities in Persia. Its report was expected in January 1914. By that same January, Greenway knew that Anglo-Persian could not go on. At any moment, creditors could press for payment and the company would have been unable to meet short-term claims out of its liquid assets and would face liquidation and/or acquisition. Admiral Slade's report, in the days that followed, would determine the company's fate.

To Greenway's immense relief, Slade informed Churchill that the company "seems to be a thoroughly sound concession, which may be developed to a gigantic extent with a large expenditure of capital. It would put us into a perfectly safe position as regards the supply of oil for naval purposes if we had control of the company and at a very reasonable cost."

In February, the British Cabinet was persuaded and the agreement struck with the company received Parliamentary approval after a debate in June 1914. Anglo-Persian's position was transformed. The government agreed to invest £2 million in the business in exchange for a controlling interest and two directors on its board, but with assurances that it would not interfere with the commercial decisions of the company. It also contracted for the purchase of six million tons of fuel oil to be provided over a 20-year period at a price of 20 shillings/ton fob Abadan.

It was a stunning success for Greenway and his fellow directors. Now the company just needed markets and ships.

The injection of government funds spurred the company into action. In February 1914, Greenway drew up plans to allocate £200,000 for shares in a tanker company. By early 1915, the groundwork was complete to establish Anglo-Persian's own shipping subsidiary company and to purchase new ships. The British Tanker Company (BTC) was formed on 30th April 2015, with an initial capital of £100,000. Its first action was to order the construction of seven oil tankers ranging in size from 3,000 to more than 10,000 dwt. Five orders were awarded to Armstrong Whitworth and a further two to Swan Hunter – all to be built in Tyneside yards in Britain. The orders set a precedent for Anglo-Persian in two important respects.

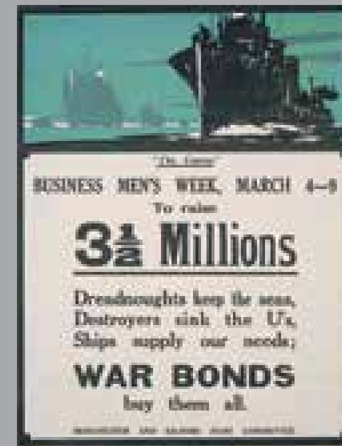
Firstly, despite criticism from Parliament and the press, the creation of the British Tanker Company was a declaration of the company's intent to be master of an independent, commercially-driven, integrated oil business: "A shipping fleet to transport crude and products at its own cost and in its own time." Owning ships allowed it to directly supply markets of its choosing and to access highly profitable parts of the oil value chain. It also removed a dependence on competitors such as Royal Dutch and Standard, as well as mitigated the commercial risks of the freight market.

Secondly, the new ships were all to have the prefix 'British' to their names – a practice that has continued for company ships over the years with very few exceptions. This reflected the Cabinet memorandum that Churchill had drawn up in 1913, which stipulated "the protection of the British identity of the Anglo-Persian company". The British Tanker Company became an explicit manifestation of that identity that was sustained for the rest of the 20th century.

The first of the new ships to launch was the 5,500 dwt steamer, *British Emperor,* in September 1916, and was deployed out of Abadan under Captain Reginald Venning to serve ports east of Suez, including Calcutta and Karachi. *British Emperor* carried the immense distinction of being the company's first new ship built to order, if not to design. Most importantly of all, she was dual-fired, with capacity to be powered not just by coal, but also by fuel oil. She was a portent of the coming of the Oil Age.

Right: The marketing of War Bonds to fund the war effort used images of the war at sea and the importance of ships in convoy.

Below: German U-boats represented a formidable threat to shipping during WW1. BTC lost two vessels to U-boat attack, with the tragic loss of 18 lives.



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The Great War

By the time the British Tanker Company (BTC) was inaugurated, a terrible war was raging across the world, principally on land, but with control of the sea vital to the movement of troops and supplies. It was the threat of war that had strengthened the case for government investment in Anglo-Persian which in turn led to the establishment of BTC and the financial capacity to order new ships. However, it was the outbreak of war itself that provided the opportunity for Anglo-Persian and its new shipping company to swiftly build a fleet and secure access to a key market for its Persian output.

The British Petroleum Company Limited (BP) was formed in London in 1906 as an oil marketing and distribution subsidiary of a German business – EPU. BP had more than 850 distribution depots in the UK and employed more than 3,000 people. Just as importantly, BP and its associated company, The Petroleum Steamship Company, owned 13 oil tankers. British Petroleum was confiscated under war regulations introduced in 1914, and Greenway soon identified the company as central to his integrated strategy for Anglo-Persia. A successful bid was made in 1917. BP not only brought a UK marketing and distribution organisation and customers to Anglo Persian, but it effectively doubled the number of ships available to carry its cargoes.

As well as the provision of fuel oil, the war was also to directly involve BTC in support of the Royal Navy. Along with Shell and some independent owners, Anglo-Persian's new shipping arm had been selected by the Royal Navy to manage seven vessels from its Royal Fleet Auxiliary (RFA), which were engaged in providing the Navy with fuel, ammunitions and supplies. It was an early signal of the confidence placed in the capabilities of BTC, as well as a chance to demonstrate its ship management expertise. For Greenway, it was also a commercial opportunity. He anticipated that the world would face a shortage of merchant shipping at the end of hostilities. Managing ships of the RFA gave the company insight and access to a range of government-owned vessels, some of which were duly purchased at the end of hostilities.

Most of the company's ships were requisitioned as part of the UK war effort, with the exception of *British Emperor*, which carried on her trade in the East. The British Government's 'short-haul' policy was designed to supply its war machine with oil delivered over the shortest distance. This meant the majority of the company's ships were deployed to the North Atlantic, carrying American oil to European ports.

The British Tanker Company losses during WW1 were light in comparison to other merchant shipping lines – 18 seafarers and two ships were lost. (Chapter 4). But while ships could be repaired or replaced, the loss of human life could not. As the war progressed, Greenway continued to add more ships. In 1918, three tankers of between 5,000 and 6,000 dwt each were acquired from Stephens, Sutton and Stephens – a UK managing agent. By the end of the year, a further five tankers were added by purchase from individual owners.

By 1919, the British Tanker Company was the owner of a fleet – albeit one that comprised a motley collection of new and second-hand ships. It included *Scandinavia* – the only sailing ship ever operated by BTC. *British Maple* had first served the Navy as a dummy decoy for the battleship *HMS Marlborough*. *British Rose* was originally built to carry molasses. Some, like *British Holly*, had her machinery amidship rather than aft. Others, like *British Sailor*, were more typically-designed tankers, built for the war job alongside the 7,000 dwt Z-type oilers of the War class. They were still mostly coal burners, while some had dual firing. At Abadan, a local flotilla of small vessels, including barges and tugs, had multiplied as refinery output rose. This small fleet was manned and managed by local staff at Abadan and was placed under the ownership of the recently acquired Petroleum Steamship Company.

The 1919 BTC fleet comprised 25 tankers. They represented just 5% of the world tanker fleet by number but 28% by dwt tons. It was still less than half the size of Shell's fleet by number. But it was an important beginning.

Roaring Twenties: a major fleet

On the 23rd February 1919, J. Douglas Stewart took up his new post as the first managing director of the British Tanker Company. The growing scale of Anglo-Persian had convinced Greenway to set up a team of MDs to oversee the rapidly expanding parts of the business ,with shipping having its own executive leader. It was an important and early distinction of its role and place within the oil company.

Stewart was a son of the manse from Kirkcudbrightshire in Scotland. He fulfilled Greenway's desire to recruit "a shipping man, acquainted with the business from A to Z". Schooled in the hard commercial world of Glasgow tramp shipping, he soon used these connections and experience to create an organisation suitable for managing a fast-growing peacetime shipping business. He was to leave his mark on BTC "as a canny, conservative unit of the shipping community".

The backdrop to these immediate post-war years for shipping was the remarkable growth in production of the company's oil in Persia. Despite an unstable political situation in that country, with a coup d'etat in 1921, production soared from two million tons in 1920 to six million tons by the end of the decade. Anglo-Persian began to stretch its wings by building two refineries – Llandarcy, Wales, named after the company founder – in its home UK market at Swansea, Wales in 1921 and later a second at Grangemouth in Scotland. The regularity of crude oil tanker traffic into Swansea and products out from it led to it being regarded as a 'home port' and the Tanker Company ships operating this trade were dubbed 'the Welsh Navy'. Unsurprisingly perhaps, a number of BTC Masters from this period bore the common Welsh name of Davies – and were distinguished by their nicknames, 'Bulldog Davies', 'Catfish Davies' and the rather uncompromising 'Bricktop Davies'. Indeed, the company's first 'outport office' was set up in 1921 in the unlikely surroundings of The Midland Café, Wind Street, Swansea.

Having established its UK market through the acquisition of the British Petroleum Company, Anglo-Persian began to develop its access and market presence in continental Europe. Interests were purchased in Belgium, France, Germany, Austria, Switzerland, Italy, Holland and Sweden. Toeholds were also secured in markets in Australia, the Far East, Africa, and the Indian sub-continent. Another key area of market growth was in marine bunkering, which was stimulated initially by the 1915 Royal Navy contract. The merchant fleets of the world began, at first reluctantly, to follow their navies in the adoption of oil burning. Commercial bunkering contracts were signed with the Euphrates and Tigris Steam Navigation Company based in Salters Hall Court in London and the British India Steam Navigation Company for bunkers in the Middle East. By 1919, the company had 34 oil bunkering stations in place or under way around the world. Three years later, the company took a step that was to lead to a lasting, major share in the world bunker business. It appointed William Cory & Sons as general sales agents. Cory was the established supplier of coal to the major shipping line P&O and within a year, the first oil bunker contract to supply 250,000 tons of Persian fuel oil to P&O was signed. The contract was soon followed by others with shipping lines, such as Ellerman's, Clan Line, and Union Castle.

Important long-term relationships were also established with the Norwegian and Danish shipping industries. The acquisition of Norske Brandeloje brought 7,000 tons of bunkering business and an agreement with the Danish East Asiatic Company provided an early opportunity to supply diesel bunkers. By 1930, the company's overseas bunkering stations had risen to 59. Aden, near the entrance to the Red Sea, became, for many years, the company's most important bunkering port.

In the immediate aftermath of the Great War, BTC found itself with a short-term surplus of shipping capacity. It took the opportunity to charter out six of its ships to Shell's Asiatic, which had a more established downstream business. A time-charter rate of 22 shillings and 6 pence was obtained with a projected profit of about £500,000 over one year (equivalent to £50 million in 2015). Anglo-Persian was now able to exploit rather than be exploited by the vagaries of the charter market for its shipping needs. It was no longer easy commercial prey for more established rivals, such as Shell.

British Tanker Company key operations: 1915-1945

British Princess – 11,000 dwt – was the British Tanker Company's third new-build vessel. She was launched in 1917 from the Armstrong Whitworth yard in Newcastle, England. She was damaged by torpedo fire en route from New York, US, to Liverpool, England, 1918.

Greenway was able to declare – with much evident satisfaction – that the chartering-out deal with Asiatic was: “Very good business indeed.”

However, concerns troubled the Board. The rapid projected growth in output from Persia and the new market opportunities ensured that the key question of shipping occupied minds. Greenway and two of his board directors – the Earl of Inchcape and Admiral Sir John Slade – were convinced of the need to more than double the fleet as quickly as shipbuilding berths could be found. Not all the board agreed – and the Burmah directors were distinctly unenthusiastic, fearing the company would over-reach itself. Greenway’s attempts to purchase a share ownership in Palmers Shipbuilding Company to guarantee annual berth options was also opposed by the Burmah directors, who believed the outlook for ships did not support it. It was the closest BP ever came to holding a direct interest in shipbuilding or repairing.

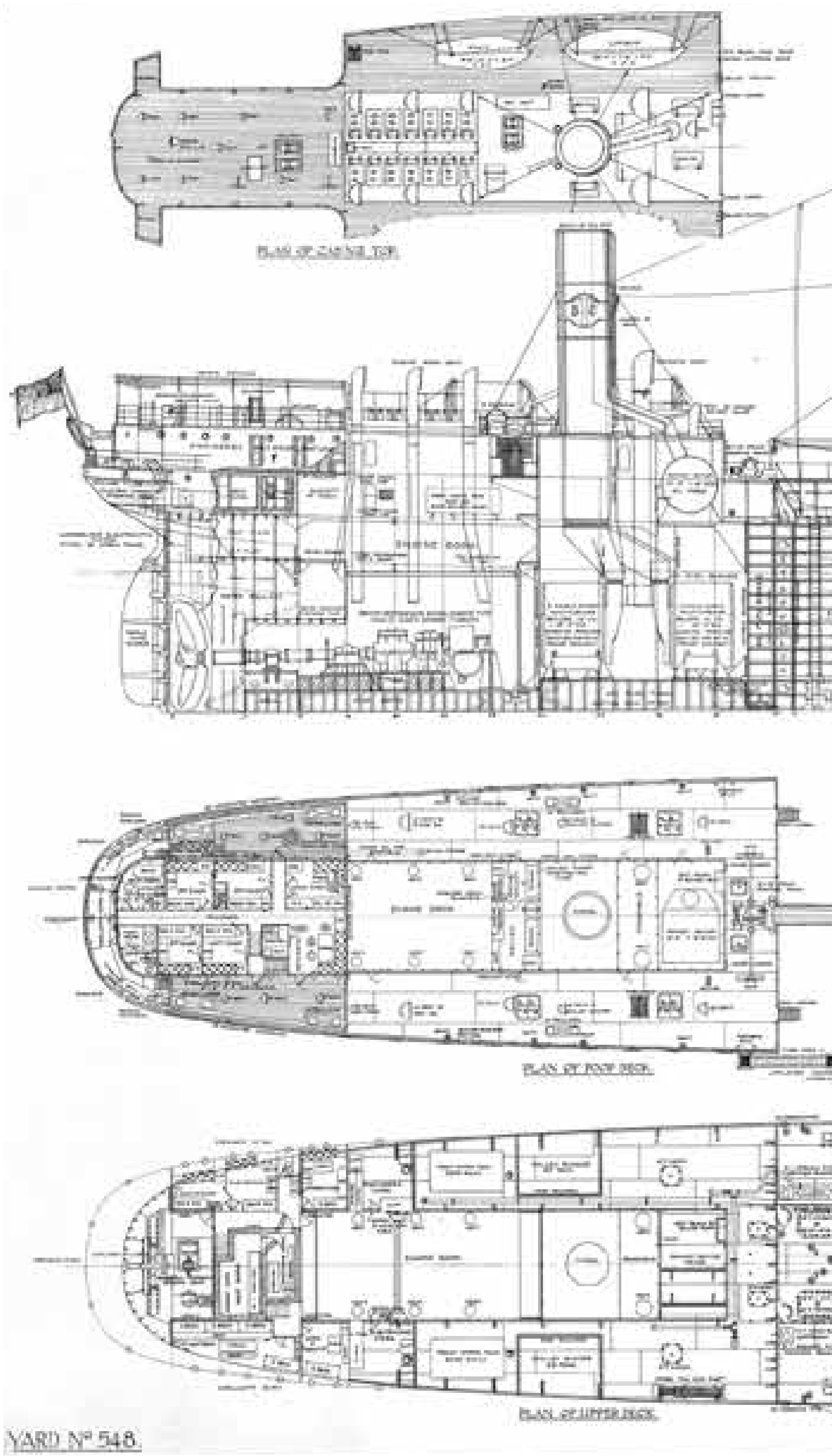
In 1920, BTC acquired an interest in the Scottish American Oil & Transport Company, which brought access to guaranteed charters of 100,000 tons from 10 newly-built ships. Greenway’s target was 35-40 new-build and owned ships. He successfully argued the case for a shipping policy based on owning sufficient ships to meet 90% of the company’s shipping requirements, with the balance met by time charter and voyage charter ships. Ninety per cent was much higher than the 70% operated by the other major oil companies at the time but it was a company policy that was to be sustained for the next three decades.

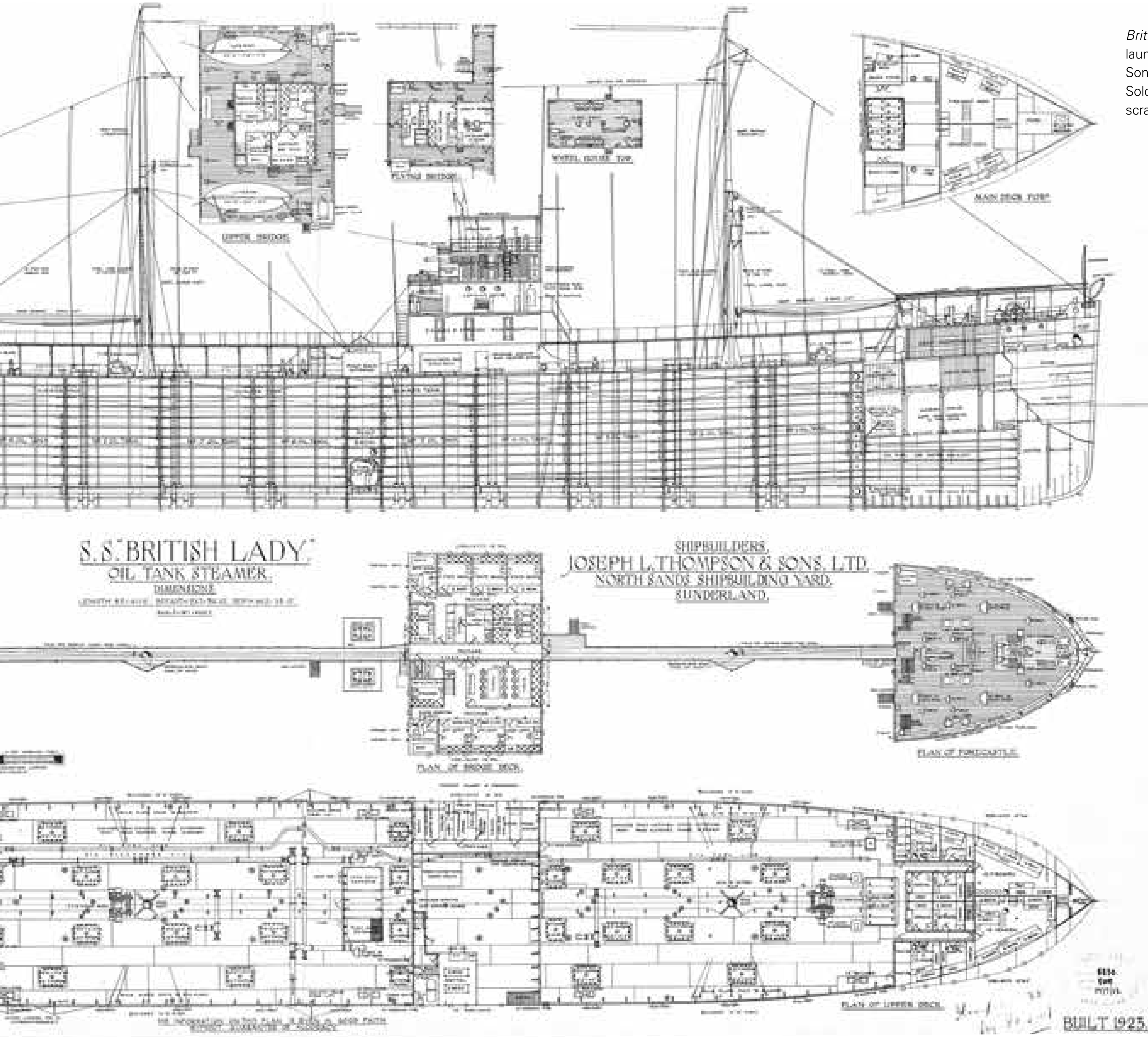
Orders were placed with UK yards for 14 ships ranging in size from small coasters to 10,500 ton tankers. Bigger ships were being constructed in the industry at this time, such as Standard Oil’s 22,000 dwt *William Rockefeller.* However, BTC’s 10,000 tonner with a 27-foot draught could expect to pass over the shallow sand bars at Abadan for most of the year. Prices paid to the yards were calculated on a basis of labour and materials ‘cost-plus’ 22.5% to 27%. The final cost of the 10,000 tonners produced was an incredibly wide range of £180,000 to £430,000. In contrast, the *British Princess* class in 1917 had cost a mere £80,000. Deliveries initially ran ahead of demand for tonnage and the first ships delivered in 1923 were briefly laid up or chartered out. By September 1925, the owned fleet comprised 61 ships totalling just over half a million dwt under the company’s direction. They included the company’s first diesel engine oil tanker – the most powerful single-screw motor ship in the world – *British Aviator.*

A new, more commercial shipping organisation also emerged alongside this build-up in the fleet under Douglas Stewart’s guidance as MD. But Stewart’s oversight of the emerging shipping organisation proved short-lived. In October 1925, he informed the board that he had contracted tuberculosis. He left the company and, despite moving abroad to an improved climate, succumbed to his illness soon after. For Greenway and the board of Anglo-Persian, the importance of a well-run shipping arm to the success of the company was all too clear and not just in operational terms.

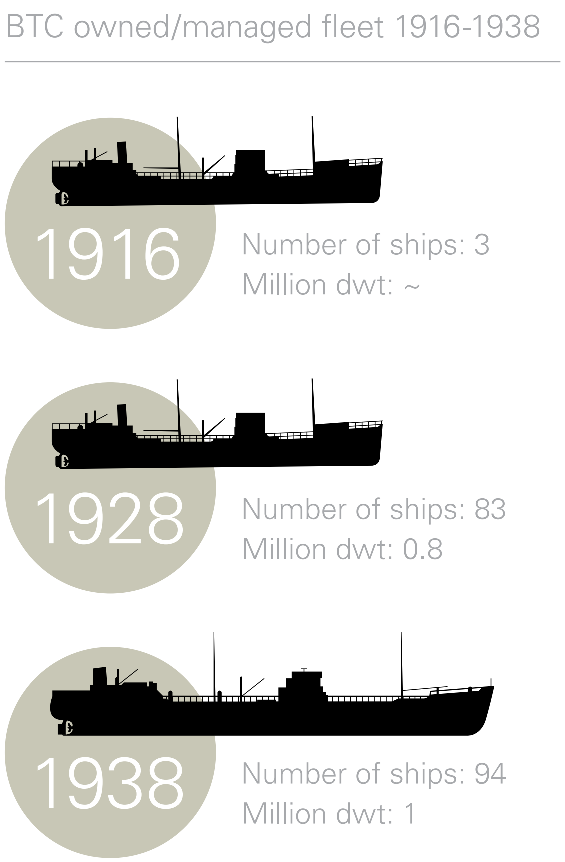
CENTENARY INSIGHT

Greenway successfully argued the case for owning sufficient ships to carry 90% of Anglo-Persian’s oil with the balance carried by chartered vessels.





British Lady – 10,000 dwt – launched in 1923 from Thomson & Sons yard in Sunderland, England. Sold to the Admiralty in 1939 and scrapped in 1946.



The rapid growth of the BTC fleet between the wars reflected the growth in Anglo-Persian's crude and products output and marketing push.

In the early 1920s, the company faced what became a recurring dilemma for oil companies – cycles of weaker oil prices, substantial outflows of cash to grow production, and a shareholder base that now included the public – all hungry for a dividend. Between 1920 and 1925, Anglo-Persian profits had fallen from just over £3 million to £860,000, while the shareholder base had grown as funds for capital investment were sought. Tankers represented almost one-third of Anglo-Persian's fixed asset base – the largest individual category.

Recognising this, Greenway took two steps. First, he sought to strengthen the BTC board by appointing Sir John Cadman as the main board director responsible for shipping. Cadman had been a senior adviser on energy to the Government and had participated in the 1913 Royal Commission that evaluated Persian oil for the Royal Navy. Taking the reins, he appointed Sir Basil Kemball-Cook as MD for BTC. Kemball-Cook had been the Government's director of naval sea transport responsible for controlling merchant shipping throughout the war years. His connections and understanding of the post-war industry were impeccable.

Second, the public was offered the chance to invest in an issue of debentures for BTC. It was to be the only time that the public was invited to make a direct investment in the company. On future occasions, when capital for ship construction could not be generated internally, it was raised through the City and international markets in a debenture issue or via other more innovative external financing methods. The move brought relief to Anglo-Persian's balance sheet and a major ship-ordering programme continued.

By 1927, a further 32 ships were on order, which took advantage of significantly lower prices in the UK yards, where demand had weakened along with the world economy. The oil companies became the shipyards' best friends in these troubled times and BTC grew not only in size, but in reputation, too. The new 10,000 tonners were

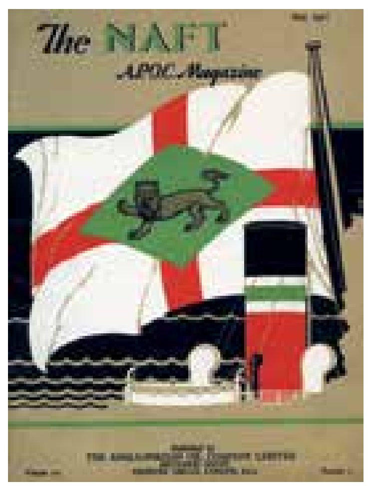
priced in the range £132 -135,000 compared to the £180-430,000 achieved five years earlier. Cost-plus pricing had been replaced by fixed prices in UK yards that were growing increasingly short of orders from other shipping sectors.

The majority of 10,000 tonners were powered by marine diesel engines. It was a complicated build programme, with three different sizes of ocean-going tankers and two coasters contracted for build with seven different UK yards. Two of the ships were ordered from a French yard for BTC's new French shipping subsidiary – Association Petroliere – which was established to comply with the French Government's post-war regulation of its oil sector.

As the decade came to an end, BTC had become the owner of more than 80 ships. This was not the motley collection with which it had emerged from the Great War. Britain's *Financial Times* described the new fleet at the launch of *British Colony* at Swan Hunter's Neptune Yard in 1927 as "modern vessels of the most approved type, most of them of more than 10,000 tons burden and representing a total of over 750,000 tons deadweight. The construction of this great fleet in such a short time will be a fine demonstration of the resources of British shipbuilding."

BTC's role and place within Anglo-Persian was also well-established. Lord Cadman succeeded Greenway in 1927 as the new chairman of Anglo-Persian and brought with him a keen appreciation and understanding of the importance of the company's fleet. Over the years, it was a route to be trodden by other senior BP executives, whose career paths took them via the shipping arm to the very top posts in the company. By the late-1920s, BTC represented the largest share of Anglo-Persian's fixed assets globally. It was delivering more than £1 million of trading profits each year to the parent company. It employed some 3,000 staff, bolstered by a navigating cadet apprenticeship scheme, which had been introduced in 1928. The fledgling shipping company also began to demonstrate a progressive side to its development, by investing in the education of its seafarers. The Seafarers Education Service, designed primarily to distribute books to sailors, was founded in 1919 by Albert Mansbridge, and BTC was among the first shipping lines to introduce a 'seafarers library' on its ships.

It fell to Cadman to point out that this great modern fleet required a branding that reflected its provenance and status. The early ships had a rather drab appearance, largely painted black with some white bands on the funnel inscribed 'BTC'. Reflecting the relatively poor conditions aboard the early ships, some members of the crew would complain that the name stood for 'Better Times Coming'. By the end of the decade, Anglo-Persian's vessels would appear resplendent in port and on the high seas, with their distinctive 'British' prefix and the combined markings of the St George's cross and the golden lion of Persia on their funnels and flags as they carried the company's crude and products around the world.



Above: *The NAFT* was launched in 1924 as the house magazine of the Anglo-Persian Oil Company.

Left: Sir John Cadman – an academic and a wartime government energy adviser – was appointed to the main board in 1923, before succeeding Greenway as chairman of Anglo-Persian.

BTC volumes shipped 1916-1938

Anglo-Persian's vision of becoming a major integrated oil company was realised, although oil production was heavily reliant on one source – Persia, later Iran. In the early 1920s, half of BTC's shipped volumes came from Abadan and one third from the Gulf of Mexico. Within a decade, Abadan represented 80% of all BTC liftings.

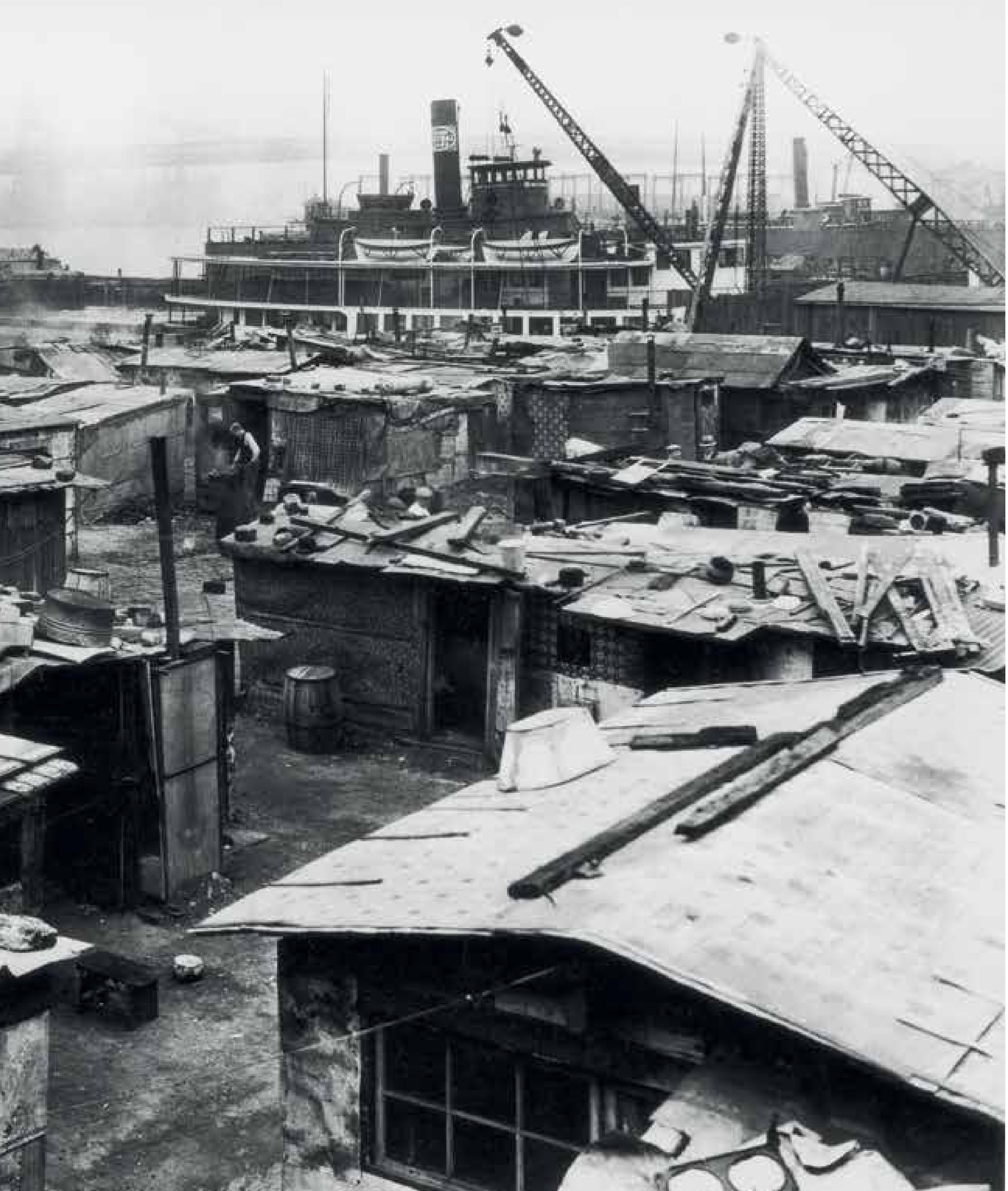
The Great Depression: surviving and thriving

By 1929, the US stock market had been on a nine-year bull run. Shares had increased in value by an average tenfold. The Roaring Twenties had seen steel production, building construction, retail turnover, and automobile sales advance from record to record. Fortunes were made. Now fortunes were to be lost. The crash in share prices that occurred that autumn may not have been the cause of the Great Depression that gripped the US and the wider world in the years that followed, but it was certainly its herald.

Just as global demand for oil began to fall back, a large new source of oil supply – the East Texas Fields in the US – came onstream. The combination presented a serious threat to Anglo-Persian, as oil prices fell by almost two-thirds between 1927 and 1931. The company's response was to strike a cautious financial approach. As profits fell, capital expenditure and the dividend paid were pruned back. Yet ship building continued as BTC disposed of older wartime ships and managed the transition as the Scottish & American charter arrangement came to an end. As Kemball-Cook put it: "Our policy in building should be a conservative one... enough tonnage to carry our products but remaining a little on the lean side." Despite that, nine more ships were ordered in 1930 and built in 1931. With the delivery of *British Energy*, BTC placed no further ship orders until 1936. In contrast with Shell and Standard, which had dozens of ships laid up for long periods, BTC removed from service only six 10,000 tonners for an average of six weeks between 1930-35.

The impact on the world shipping industry was not so benign. Rising unemployment within the Merchant Navy meant it was not unknown for fully qualified ship Masters to take jobs as deckhands, while work was scarce for apprentices and cadet officers. These were hard times for the shipyards and the independent tanker industry too. Deep cuts enforced on the Royal Navy, combined with the effects of the Great Depression, caused the collapse of much of the British shipbuilding industry in the early 1930s. One such UK shipbuilder was Palmers which had built a quarter of the company's ships. Its yard at Jarrow in the northeast of England would never re-open after the launch of *British Strength* in 1931.

Kemball-Cook could do little about the impact on employment and skills in the yards. But he was soon to play a prominent role in a scheme to place a safety net underneath the independent tanker industry. The Tanker Pool scheme was the idea of H. Schierwater, representing the UK Chamber of Shipping. Members would pay a percentage of all freights received by them on charters and the fund would be distributed to compensate vessels laid up – effectively discouraging the acceptance of uneconomic rates. Even though the scheme would keep freight rates artificially high, the risks of a tonnage shortage that would follow a collapse



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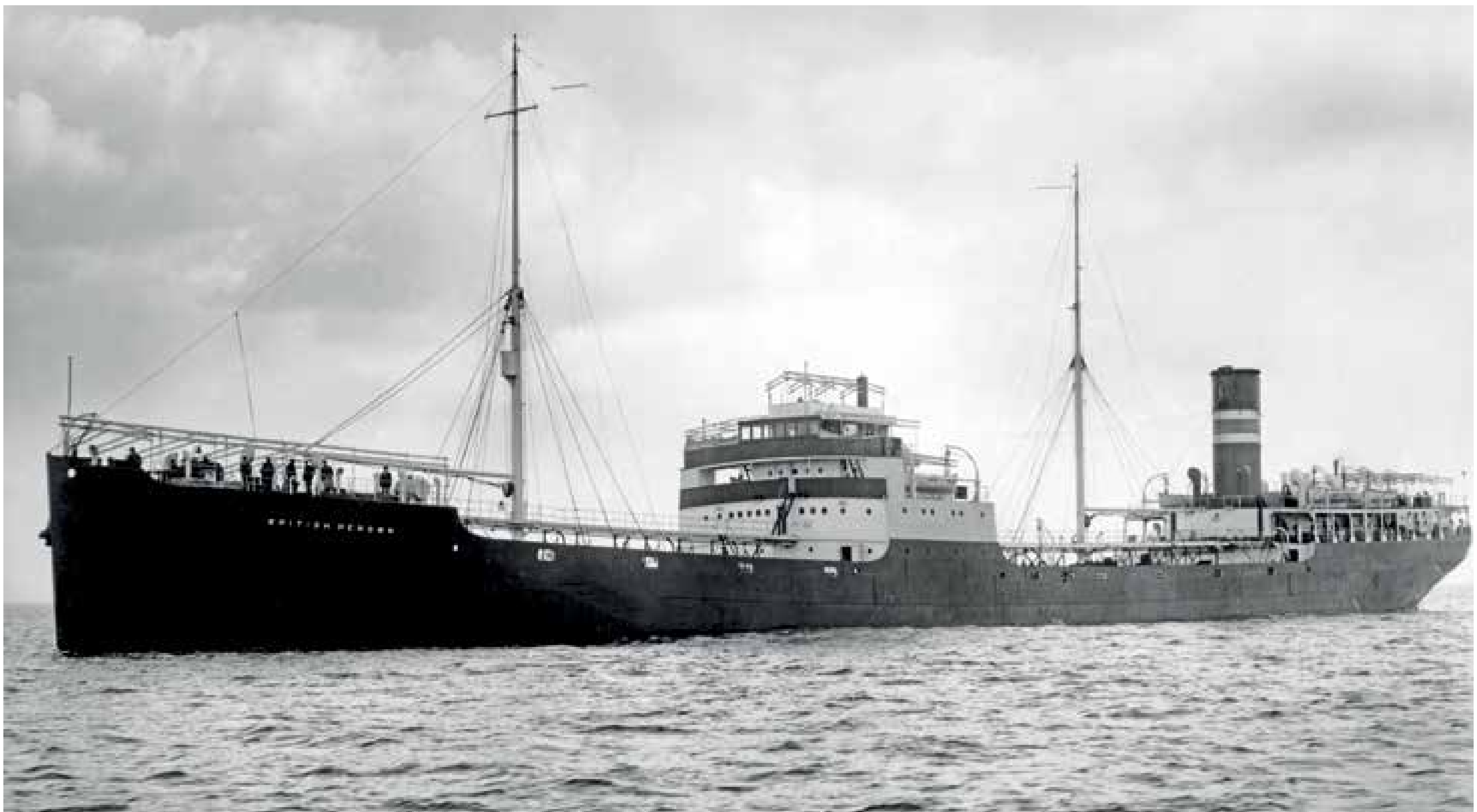
Ships load alongside a shanty town on the banks of the East River, New York, US, 1935.

in the independent sector was even less attractive. Kemball-Cook's close acquaintance with senior shipping people and his knowledge of the industry enabled him to lead the oil companies in the protracted discussions that created the Pool in 1934.

In the face of a world recession, Anglo-Persian still continued to thrive. Its production of crude oil rose and its British and European refineries raised throughput from 4.2mt to 6.75mt between 1925 and 1933. The company's sales of its main grades of products did suffer a fallback in 1931 but this was short-lived and strong growth resumed up to 1937. In Britain, a key market for Anglo-Persian, the old established export industries of iron, steel, coal and cotton suffered greatly in the Depression. Yet the growth of new industries and consumer spending in other sectors held up fairly well. Motoring had caught the imagination of the public and boosted sales of motor spirit. Private car ownership in the decade almost doubled to nearly two million. Rapid growth in commercial road transport also boosted sales significantly.

The company may have ridden the worst economic effects of the Depression, but the collapse in world oil prices did serve to expose a fundamental flaw in the company's position – its dependence on a sole source of oil in Persia. In 1921, a new Shah had come to power by military coup and sought to



British Renown – 11,000 dwt motor ship – raced *British Duchess* from the Mediterranean to the UK in 1935. She was later damaged twice during WW2 but continued in service until 1954.

renegotiate the terms of the original oil concession granted to William Knox D'Arcy. A full-blown crisis for the company was averted only when more favourable terms were conceded with greater involvement of Persian nationals in oil activities. The Shah later requested that the international community refer to the country as 'Iran', and in 1935 Anglo-Persian was renamed Anglo-Iranian Oil Company. It was a foretaste of things to come, which would have important consequences for the company's shipping activities in later years.

This sole dependence on Iran for crude had already led Anglo-Iranian to pursue an ambitious programme in the 1920s and '30s aimed at diversifying its supply sources. The negotiation of a concession in Mesopotamia (Iraq), where oil was first discovered in 1923, had been followed by the discovery of the giant Kirkuk field on the 15th October 1927. Two crude pipelines were subsequently laid to the Mediterranean at Haifa and Tripoli, with Anglo-Iranian's share of oil delivered to Haifa. Now the company had a second giant source of oil, as well as important new discoveries in Iran, and BTC had a new location from which to lift crude that was closer to Western markets and avoided passage through the Suez Canal. So began a new, regular voyage pattern for the company's ships, taking Iraqi oil to Scotland for refining at Grangemouth. Anglo-Iranian's reputation as an outstanding oil and gas exploration company was further burnished by major oil discoveries in Kuwait and Qatar later the same decade.

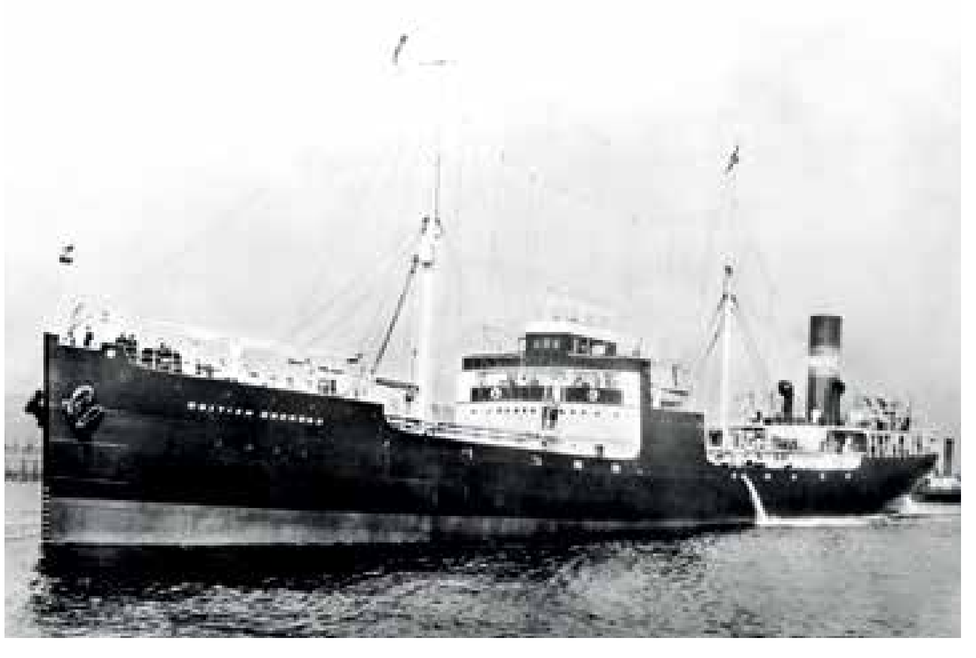
To maintain the 90:10 owned vs chartered ratio, the BTC board decided in 1935 that a new building programme was required for a further 24 ships. These were heady times. At the 1937 AGM, Lord Cadman told shareholders that they "could justly be proud of their company's contributions to the revival of prosperity in the British shipbuilding industry." The company could claim to have invested more than £20 million in UK yards over the previous two decades, leading to the construction of 66 ships.

Emerging from world depression, BTC had not only survived, but had thrived as well. In 1935, Kemball-Cook had been succeeded by James Robertson – the first internal candidate to be appointed to the role of general manager – which brought a strong degree of continuity to the company. With more than 90 owned ships on the water or under construction in British yards and more than 4,000 seafaring staff, there was a growing esprit de corps within BTC as it approached its 25th anniversary. In late-December 1935, two ships left Abadan on the same tide for a race home. *British Renown* was an 11,000 dwt motor ship built in 1928. *British Duchess* was a 9,000 dwt steamer with triple expansion engines built in 1924. Both ships passed through the Suez Canal in the same convoy before seeking to establish an unassailable lead through the Mediterranean and the Western Approaches. At the pilot station off Dungeness, *British Renown* led but a late spurt by *British Duchess* saw both ships arrive off Dover, England, at the same time. An honourable draw was declared between the modern motor ship and the stately steamer!

In May 1937, a new British king, George VI, was crowned in London. The Naval Review that followed at Spithead on Britain's south coast included BTC flagship, *British Fame* – nine months old – and wearing the pennant of BTC's first-ever Commodore – R.E Campion. A large party travelled down from Britannic House HQ to be on board when the King sailed past. They remained on board for dinner and to see a fireworks display and the fleet 'lit-up'. In the good traditions of BTC, 'swinging the lamp' went on late into the night and the party arrived back at Waterloo by special train at 4am.

Inevitably, the party was not to last. Once more, the world was edging inexorably towards war. Nationalism was sweeping through Germany; China and Japan were in conflict; invasions, occupations and civil war were blighting the post-war settlement of Versailles and the League of Nations. Britain and its empire faced worldwide commitments, but lacked both the industrial infrastructure and financial resources to build up a navy capable of being simultaneously strong in both Far Eastern and European waters. By negotiating the Anglo-German Naval Agreement in 1935, Britain had acknowledged Germany's demand to rebuild its navy in the hope that it could constrain Hitler's ambition by placing voluntary limitations on the size and scale of that navy.

It was to be a hope in vain.



British Duchess – 9,000 dwt steam-engine tanker – matched the new combustion engine of the motorship *British Renown* in a race from the Mediterranean to the UK. She was sold in 1952 after 28 years' service.

Right: *British Tommy* – 1,900 dwt coastal tanker – built in 1921 by Lithgows, Port Glasgow, in Scotland. She gave 25 years' service to BTC.

Below: BTC vessels were accorded the honour of representation in Naval Reviews to mark important royal events, such as the coronation of King George VI in 1937, when *British Fame* sailed with the fleet.

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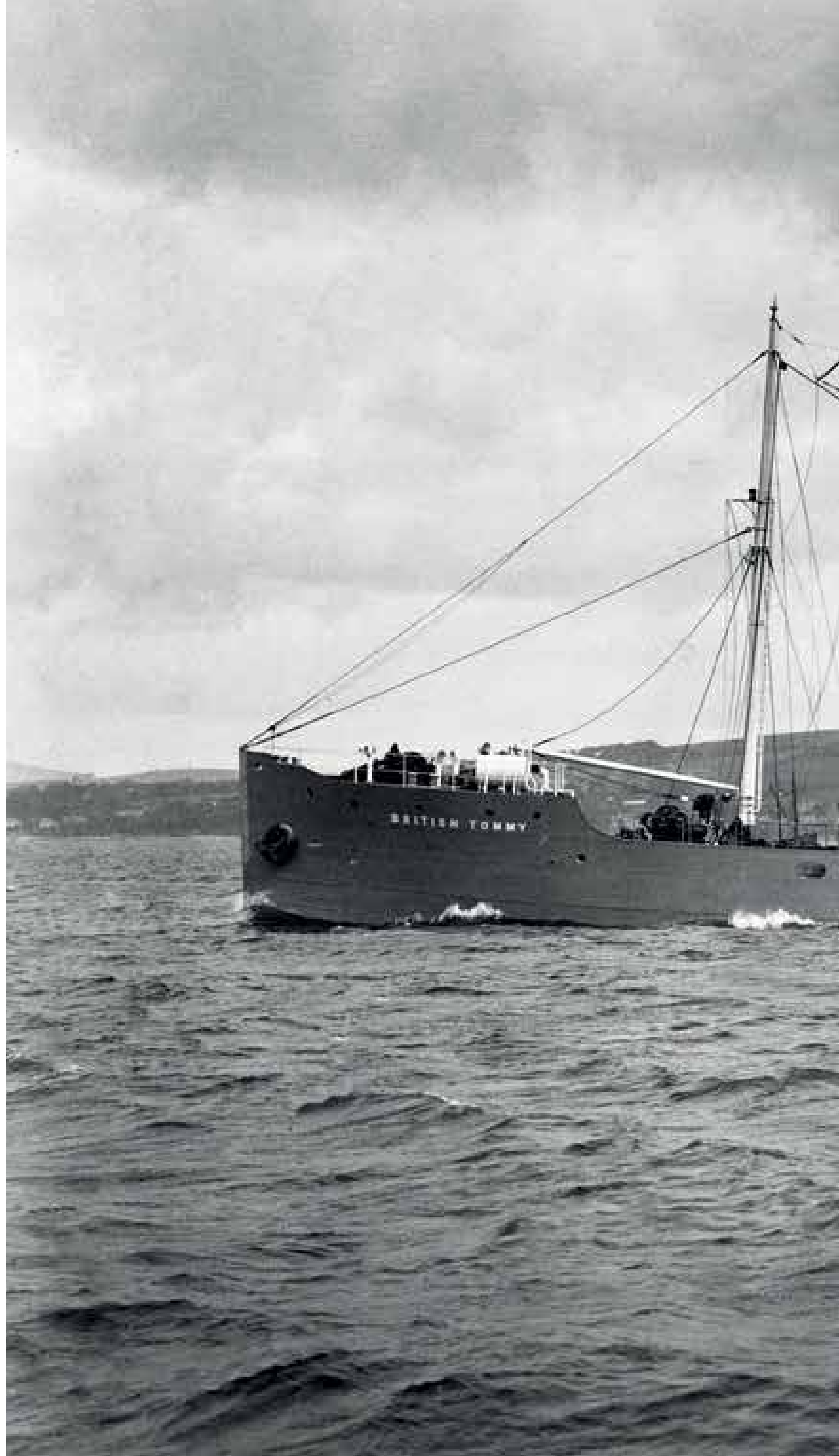

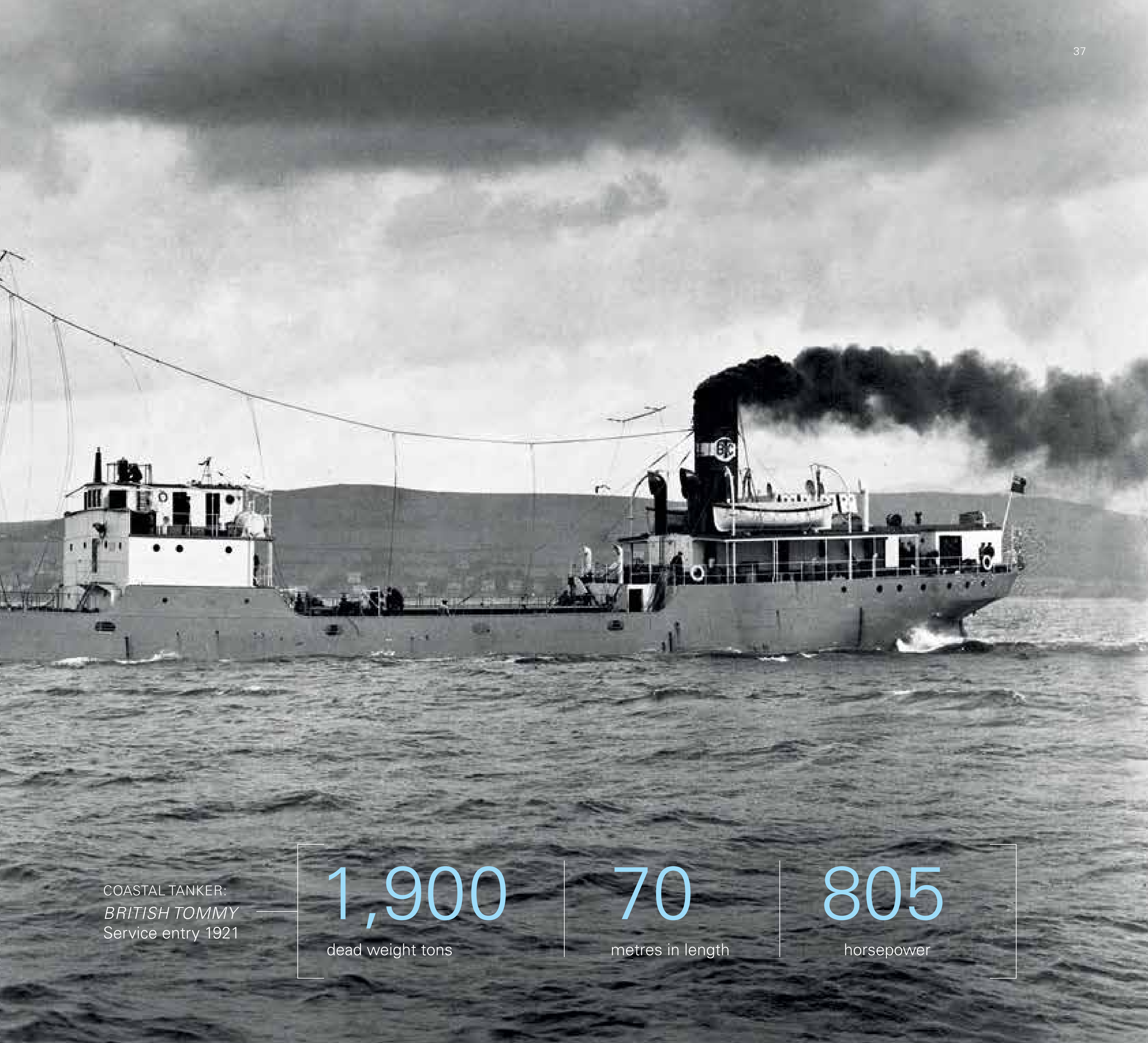

COASTAL TANKER:
BRITISH TOMMY
Service entry 1921

1,900	70	805
dead weight tons	metres in length	horsepower

© IWM

War and loss

At 11 o'clock on the morning of 3rd September 1939, Neville Chamberlain, Britain's Prime Minister, declared war on Germany. By midnight, the new UK Petroleum Board was in place and the war arrangements for the domestic oil sector that had been planned with the oil companies one year earlier came into effect. Anglo-Iranian noted for the company records: "We have ceased to be free agents and commercial considerations have been relegated to the background." The company and its shipping arm were now to put all their energies and resources behind the single overriding objective of military victory.

The Petroleum Board brought together the principal oil companies operating in Britain and pooled their assets and resources to serve this common purpose. It established its organisation at Shell's offices on The Strand, in London, from where it liaised with and reported to the relevant government ministries. Anglo-Iranian and BTC executives and managers were quickly assigned. Lord Cadman became a special adviser to the Secretary of Petroleum, Heath Eves chaired the Tanker Tonnage Committee while others were co-opted as senior working officials for the board.

From this point forward, the movement of UK shipping associated with oil would come under the operational direction of this joint body. At first, all planned individual voyages required a licence and this was gradually subsumed by the full requisitioning of vessels. The company's task would be to manage not only its own ships for the duration of the war, but also to take over a variety of other requisitioned ships, as well as vessels provided as 'American assistance tonnage'. At its peak in 1942, the company had 146 ships under its operational management – over 50% larger than its pre-war fleet. BTC offices were initially moved out of London to the relative safety of Swansea in Wales, but this soon proved impractical for the day-to-day running of the business and by Christmas 1939, the staff returned, but to a new office in Walton-on-Thames just outside the capital.

The need for oil for Britain and her allies' to prosecute the war successfully was self-evident. Yet Iranian oil still represented only 5% of world supplies at the outbreak of war. So, once again, it was to the West that Britain and her allies turned, especially after the closure of the Mediterranean in June 1940 following Italy's entry into the war. While the US remained neutral until the events at Pearl Harbor in 1941, her contribution to the Allied war effort in those early years was vital in both oil supply and shipping. Britain returned to its WW1 policy of pursuing a 'short-haul' option to bring oil and oil products from the US and the Caribbean, and for BTC this meant the re-emergence of its 'Welsh Navy'. US neutral flagged ships would bring oil by shuttle from the Gulf of Mexico to the US East Coast, from where oil would be transferred to UK vessels that would then join a transatlantic convoy.

Despite the convoy system, German U-boats began to extract a huge toll on merchant shipping during the first years of the war, reaching a terrible peak in 1942. In the oil sector alone, 233 tankers were lost that year, of which 13 were owned or managed by BTC. The expansion of the Royal Canadian Navy and the entry of the US into the war at the end of 1941 could not prevent the Allied war effort from hanging by a thread. By the winter of 1942-43, it appeared that the sinking at will of ships by U-boats in the North Atlantic would cut the vital transatlantic lifeline that the Americas provided to sustain Britain and her war effort.

However, a range of factors was to turn this particular tide. Allied ships began to be equipped with radar. Significant improvements in sonar and the training of operators were achieved. The creation and training of escort groups also began to make a difference. Improved anti-submarine frigates were deployed to convoy duties alongside corvettes, and the first Merchant Aircraft Carriers (MAC ships) began to offer the convoys aerial defence. Success in code-breaking also gave Allied planners a critical edge that allowed much-improved and coordinated anti-submarine tactics.

The huge losses among the general tanker fleet were now being made up from the immense productive capacity of US shipyards. The introduction of the US T2 *'Greyhound'* tanker with her welded steel hull brought quantity and greater evasive speed to the Allied merchant fleet. Operational improvements were also made. In the spring of 1942, the local US East Coast oil shuttle system ended because the waters between Halifax and New York off Cape Hatteras had become too dangerous for slow tankers without convoy. Oil and product tankers now gathered southwest of Bermuda and joined up with UK-bound convoys from the Cape of Good Hope off Sierra Leone. On the return journey, British-controlled convoys protected them between Trinidad and Curacao.

The result of all of these measures was a dramatic fall in 1943 in the dreadful losses of the previous years. Even so, 69 tankers were lost that year, of which nine were associated with BTC. But the worst was over and the company was to lose just one more ship per year in the final two years of the war.

The dangerous waters of the Atlantic featured large in the war service of BTC staff and ships. However, BTC staff also played important roles in many of the other theatres of conflict that marked the Second World War. When Germany invaded its erstwhile ally, the Soviet Union, in June 1941, Churchill committed materiel support to Russia through the establishment of the Arctic Convoy. The decision was controversial – not least because of the immense difficulties that would face the convoys. German forces were not the only threat. A second foe, just as terrible, was the fearful Arctic conditions that produced mountainous seas against merchant vessels that were often doubly laden by a top-weight of hundreds of tons of ice. While vital materiel was delivered to a Soviet Union besieged by Germany, 87 merchant convoy ships were lost and 829 merchant seamen perished.

BTC ships played an important role in support of the landings and resupplying of Allied forces in North Africa. General Montgomery's Operation Torch famously expelled Field Marshal Rommel from the continent, but among the losses on both sides was the worst supply convoy episode that involved BTC during the course of the six years of war. British convoy TM1 sailed from Trinidad for Gibraltar on 28th December 1942. A few days out, a wolf pack of U-boats wrought havoc among the merchant ships of the slow-moving convoy. During an eight-day period, seven of the nine ships were sunk, of which four were associated with BTC. By the time the attack was over, 82 BTC seafarers had lost their lives.

Left: Convoy ships were not only protected by escort vessels, but also by weaponry installed on board that was manned by both Royal Navy and Merchant Navy seafarers.

Opposite: An Allied convoy underway in 1943. In the previous year, merchant shipping losses reached a terrible peak, with 233 tankers lost from the oil sector alone – of which 13 were owned by BTC.

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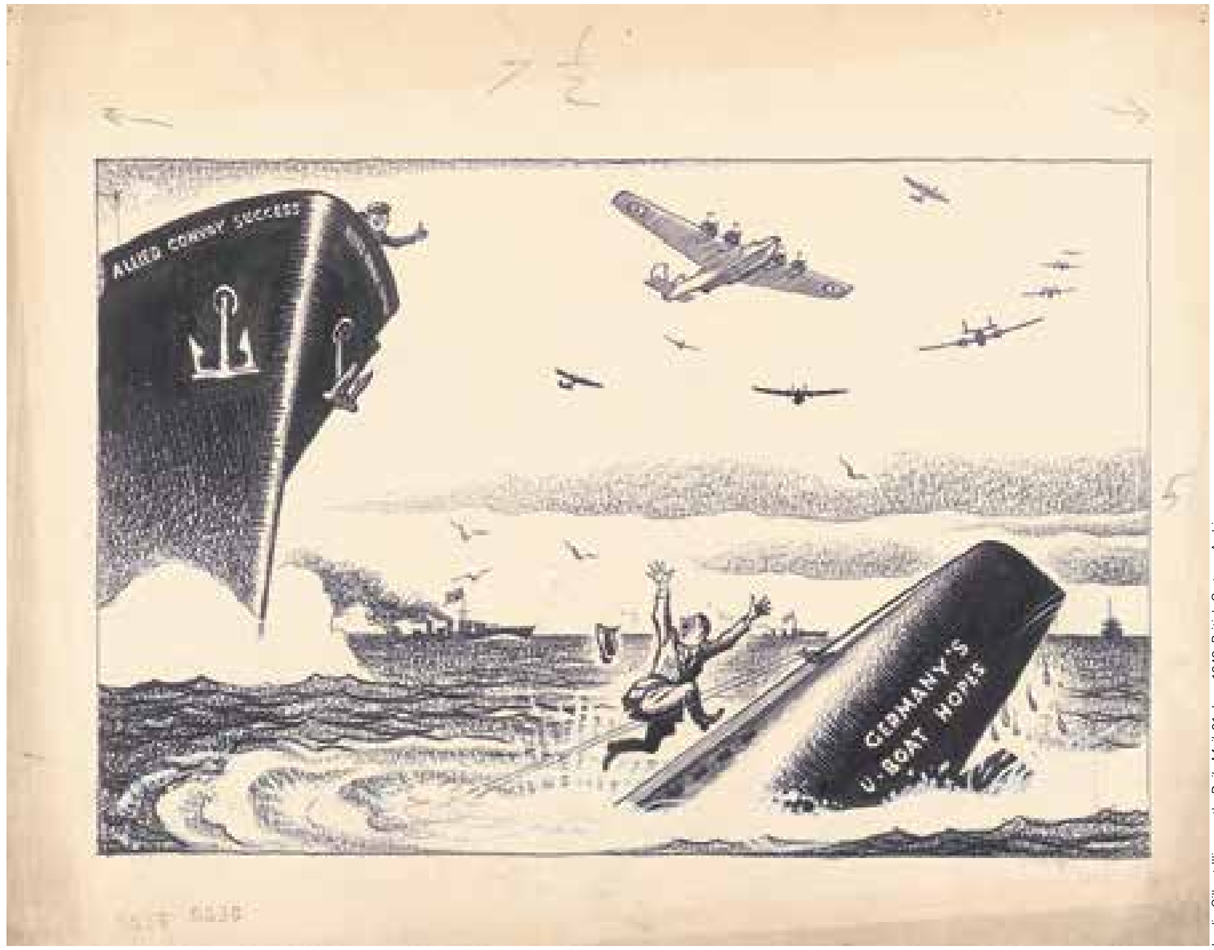

Leslie Gilbert Illingworth, *Daily Mail*, 21 June 1943. British Cartoon Archive

Above: Satirical cartoonists played an important role in portraying the 'evil' Nazi enemy, and, in this example by Leslie Gilbert UIllingworth in 1943, helping to boost public morale by communicating success from the Allied convoys.

Left: The sinking of *U-Boat 175*, April 1943. Depth charges, improved radar, military intelligence and better air cover from land and sea carrier all contributed to victory in the Atlantic.

Wartime honours

Honours and awards earned by BTC personnel (1939-1945)

1	Albert Medal
36	BEM
79	Commendations
5	Dispatches
6	DSC
3	DSM
1	DSO
14	Lloyd's War Medal
23	MBE
31	OBE
3	Royal Humane Society
1	Soviet Medal for Valour

Above: The 12,000 dwt Merchant Aircraft Carrier *Empire Mackay* was operated by BTC on behalf of the British Government during WW2 and purchased and renamed *British Swordfish* after the war.

Right: Convoys often had to deal with rough seas, as seen here in the English Channel prior to the Normandy beach landings on D-Day in 1944.

In the East, the initial impact of war and the short-haul policy was to reduce the production of the company's Iranian crude from 10 million tons in 1939 to 6.5 million in 1941, and tanker traffic through Abadan fell from 773 ships to 462 in the same period. Iranian neutrality in the war came under scrutiny as Allied worries about German influence grew. The intervention of British forces in 1941 that took control of the company's Iranian facilities, as well as the impact of Pearl Harbor and war in the Pacific changed the role that Abadan would play for the remainder of the conflict.

The Japanese invasions of the Dutch East Indies and Burma in early 1942 denied the Allies access to oil from these sources and Iran and Abadan refinery became the sole remaining large source of oil for the eastern theatre of war operations. Bunkering for US and Panamanian flagged vessels and the relocation of Shell's fleet base saw a dramatic recovery in tanker traffic to and from the company's Abadan refinery, reaching more than 1,000 ships in 1945. The majority of the flotilla of tugs, barges and other craft, although still manned and operated by BTC, was requisitioned locally. Ocean-going tugs, such as *Zerang* and *Delavar*, were armed and equipped for minesweeping and other local defence duties.

Company barges participated in the provision of war materiel to Russia by operating as far as Andimeshk – some 250 miles to the north of Abadan in Iran – on the first leg of a route for supplying aviation fuel to the Soviet Air Force. As well as oil, heavy war equipment, including locomotives, boxed aircraft and fighting vehicles, was shipped by Abadan barge to the railhead at Ahwaz, south of Andimeshk. Abadan also began to develop as a major ship repair and ship-arming centre. BTC staff brought their marine expertise to bear in this vital war activity. As well as repair work, Abadan was used to install weapons, such as the Oerlikon anti-aircraft cannons, and for checking and electrical repairs to degaussing equipment – vital to reducing a ship's magnetic signature to avoid triggering magnetic mines.

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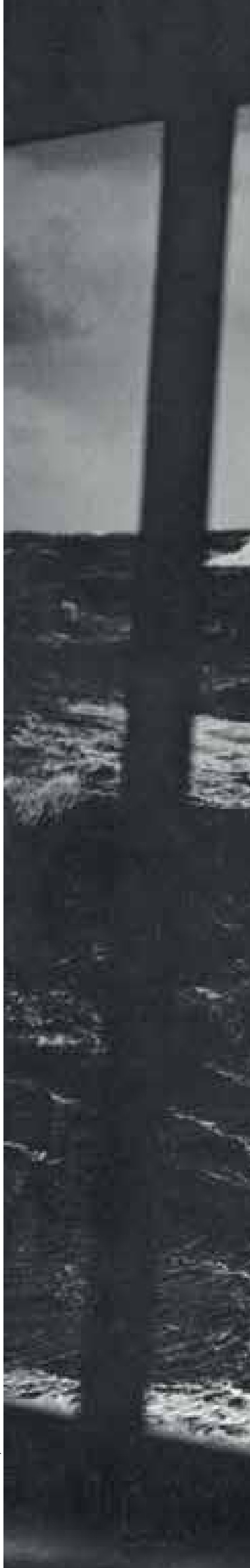


If necessity is the mother of invention, then it was the needs of war that brought a range of innovations and improvements to the tanker fleet. The installation of open frames on the superstructure created a spar deck on the tankers, which was capable of carrying 2,000 tons of additional goods, including wheat, sugar and coffee. To a nation under siege and living with the rigours of rationing, the arrival of such exotics as coffee would have had a disproportionately uplifting effect. Most impressive of all was the wartime drive to improve the efficiency of the merchant fleet in general. For tankers, regulations were changed to allow deeper loading of vessels, which made a material impact on the volumes of oil delivered. Turnaround times for discharging tankers in the UK west coast ports were cut by one third during the war years – an improvement that carried forward to peacetime operations.

As the war approached its climax in 1944, BTC provided tankers for the Allied invasion of the northern France coast known as Operation Overlord, bringing fuel and water to sustain the D-Day landing bridgehead into France.

The war took a terrible toll in human life across the world and the merchant navies of many countries suffered out of all proportion to their relative size. The British Merchant Navy lost 60% of its fleet, while 50% of the total world fleet was destroyed. Oil tankers were a prized target for enemy attack. The Allies had lost more than 500 by Victory in Japan (VJ) Day. Of these, 50 ships manned by BTC, including 44 in its direct ownership were sunk. On these and other ships that were subjected to enemy attack, 657 BTC seafarers lost their lives. Countless more suffered wounds and illnesses attributable to the hardships of war at sea. Two hundred and sixty were taken prisoners of war, of whom five died in captivity. Two escaped. To that litany of statistics could be added the remarkable 203 decorations and awards that were made to BTC personnel.

Getty

Above: *British Strength* is attacked by more than 100 shells and sunk by the German capital vessel, the battleship *Scharnhorst,* on 15th March 1941. *Scharnhorst* sank 10 merchant ships in the space of as many days. The survivors of *British Strength* boarded lifeboats and were taken prisoner. En route to prison camp in France, BTC's John Dawson, and another prisoner jumped from a guarded train and made a daring escape back to Britain via Spain and Gibraltar.

Left: The Merchant Navy not only provided a vital lifeline for importing food and war materiel, it also played a major role in transporting and resupplying land forces in multiple theatres of war, including at Dunkirk and the D-Day landings.

Right: *British Caution* – 12,500 dwt – is launched from the Swan Hunter yard in Newcastle, England, in 1945. Even before the war had ended, the task had begun of rebuilding the fleet.

TIMELINE

1915-1945

1915
British Tanker Company launched

1916
First tanker – *British Emperor* – is launched

1918
British Viscount and *Eupion* lost to WW1 torpedo attacks

1920
British Tanker Company commences building of a fleet of 35-40 new vessels

1921
Llandarcy refinery (below) opens in Wales, UK followed by Grangemouth in Scotland, UK

1923
Major fuel bunkering contract is signed with P&O

1924
Launch of the world's most powerful single-screw motor ship – *British Aviator*

1928
Company navigating apprenticeship scheme is introduced

1930
Tanker fleet represents largest share of Anglo-Persian's worldwide assets

1934
Anglo-Persian commences oil exports from Kirkuk, Iraq, with tanker loading at Haifa, Palestine

1935
A major new building programme for 24 ships commences

1939-1945
50 ships manned by the British Tanker Company are destroyed in WW2, with 657 lives lost

Summary

British Tanker Company

1915-1945

Thirty years had passed since the inauguration of the British Tanker Company. Launched at a time of great crisis, in a country at war and with a parent company poised on the financial brink, it had swiftly grown to be one of the largest merchant fleets in the world, with 94 ships of some one million dead weight tons. More importantly, BP's shipping arm had fulfilled the vision of BP's first chief executive: to create a fully integrated major oil company to rival that of Shell and the Standard Oil companies.

Tankers were still of fairly rudimentary design and from the outset, BTC established its own specialist naval architecture and marine engineering teams to oversee the development of new-build ships joining its fleet. It was the beginning of an important relationship with some of the great British shipyards of the time, and through the adoption of the 'British' prefix for the company's vessels, it carried forward and augmented the reputation of Britain's long maritime tradition.

The British Tanker Company rode the early waves of the Great War and the financial uncertainty of its parent company, Anglo-Persian. It was carried forward on a wave of growing demand for oil and access to the Middle East's first significant source of crude oil. It even navigated the very rough waters of the Great Depression. But the storms of the Second World War blew the shipping company badly off course and inflicted enormous damage. Almost half the BTC fleet was lost. The human cost was immeasurable.

2

BP TANKER COMPANY
NEW WORLD ORDER: 1946-1979


BRITISH VIGILANCE

A new world order

The war was over – but planning for a new world order had begun four years earlier on board *USS Augusta* in Placentia Bay, Newfoundland. US President Franklin D. Roosevelt met British Prime Minister Winston Churchill, under conditions of great secrecy. Their discussions led to what became known as the Atlantic Charter declaration, which set out a range of common ideas to further the cause of international security in a post-war world. Each of its sponsors had very different motivations. Roosevelt wished to tie Britain to a number of concrete war aims that would loosen its imperial grip in the interests of self-determination and open trade. Churchill – escaping briefly across the Atlantic from a Britain under enemy siege – was desperate to bring the US into the war.

The Allied countries pledged adherence to the Charter's principles and it was to be a touchstone for a number of the international agreements that shaped the world after 1945, including the foundation of the United Nations, the General Agreement on Tariffs and Trade, and the post-war independence of Europe's many colonies. Each would have an important influence on the evolution of the oil industry and its shipping activities.

The post-war ascendancy of the US as the leading Western power was coupled with America's growing interest in the Middle East. The region was important for two reasons. It formed a geographical barrier to the spread of communism as the Cold War began to identify new ideological battlefronts around the globe. Just as importantly, the region was set to play a leading role in the geopolitics of the Oil Age. Middle Eastern oil reserves had transformed the world energy outlook. Everett DeGolyer, an American geologist advising the US Government, remarked in 1944: "The centre of gravity of world oil production is shifting from the Caribbean area to the Persian Gulf area." He had good reason to believe it. Anglo-Iranian's giant discoveries in Kuwait and Qatar just before the outbreak of war had been matched by the immense potential of a 1938 discovery in Saudi Arabia by Standard Oil of California and the Texas Company.

During the war, the US and UK governments attempted to formulate a joint approach to secure the 'orderly' development of international oil industry production, but without success. In the event, much of the responsibility for post-war international oil arrangements fell upon the major oil companies and with concession-granting governments. Host governments with oil resources soon stepped up their demands for increased revenues, guaranteed payments or production levels, greater training and employment of the local populace, more employee welfare, more open accounting procedures, and greater appreciation of local conditions. For the oil companies, the issue was how to meet these aspirations while balancing interests in production between several different Middle East resources in which they had interests. Saudi Arabia's King Ibn Saud's primary interest was to bring Saudi reserves into production as quickly as possible. Yet the world was only slowly emerging from a terrible war; the great economies of Europe lay shattered; infrastructure such as refineries and ports, had to be rebuilt. Re-establishing existing markets for oil and developing new ones was one of many priorities in a time of scarce resources.

The US led the way and its post-war boom soon overran its own oil production capacity, forcing it to become a net importer. For Europe, this meant turning towards the Middle East to meet its needs. In the UK, acute shortages of coal immediately after the war forced the Government to rely on oil as it grappled with its own domestic energy crisis. This was the new world in which the Anglo-Iranian Oil Company found itself in the years after 1945. The company now had access to four major sources of crude oil – Iran, Iraq, Kuwait and Qatar. Iran remained the jewel in this crown and Anglo-Iranian was concerned at securing markets and shipping for the rapid step up in post-war production that the Shah and the company both desired.

The task fell to two men: the new chairman of AIOC, Sir William Fraser, and BTC managing director Robert Gillespie.

Above: President Roosevelt and Prime Minister Churchill on the quarterdeck of *HMS Prince of Wales* after Sunday morning service on 10th August 1941. The vessel brought Britain's wartime leader across the dangerous waters of the Atlantic to discuss a post war settlement.

Page 49: *British Vigilance* – 16,000 dwt tanker – launched from the yard of Sir James Laing, Sunderland, England in 1956. Unloading a cargo of gas oil in a temperature of -36ºC (-4ºF) at Gavle, Sweden.

British Adventure – 30,000 dwt – was BP's first 'supertanker' and the largest in the world when launched in 1950. She was almost twice the capacity of other ships in the fleet. Seen here loading at Mina-al-Ahmadi, Kuwait, which had been developed as the largest port in the world at the time.

A great new fleet

In the post-war years, Sir William Fraser committed BP to the slow and difficult task of building up its own markets and customers having been unable to extend an existing marketing cooperation with Shell to a global deal.

A marketing push saw sales double to nearly 40 million tons by 1950. Much of this growth was attributable to crude and fuel oil sales, which were relatively low in value in comparison with the margins for refined products. Forty per cent of Anglo Iranian's volumes was sold to third parties and not end customers. The company was becoming a bulk supplier of raw material for processing and marketing by other oil companies. Despite that, marine bunkers and product sales grew strongly.

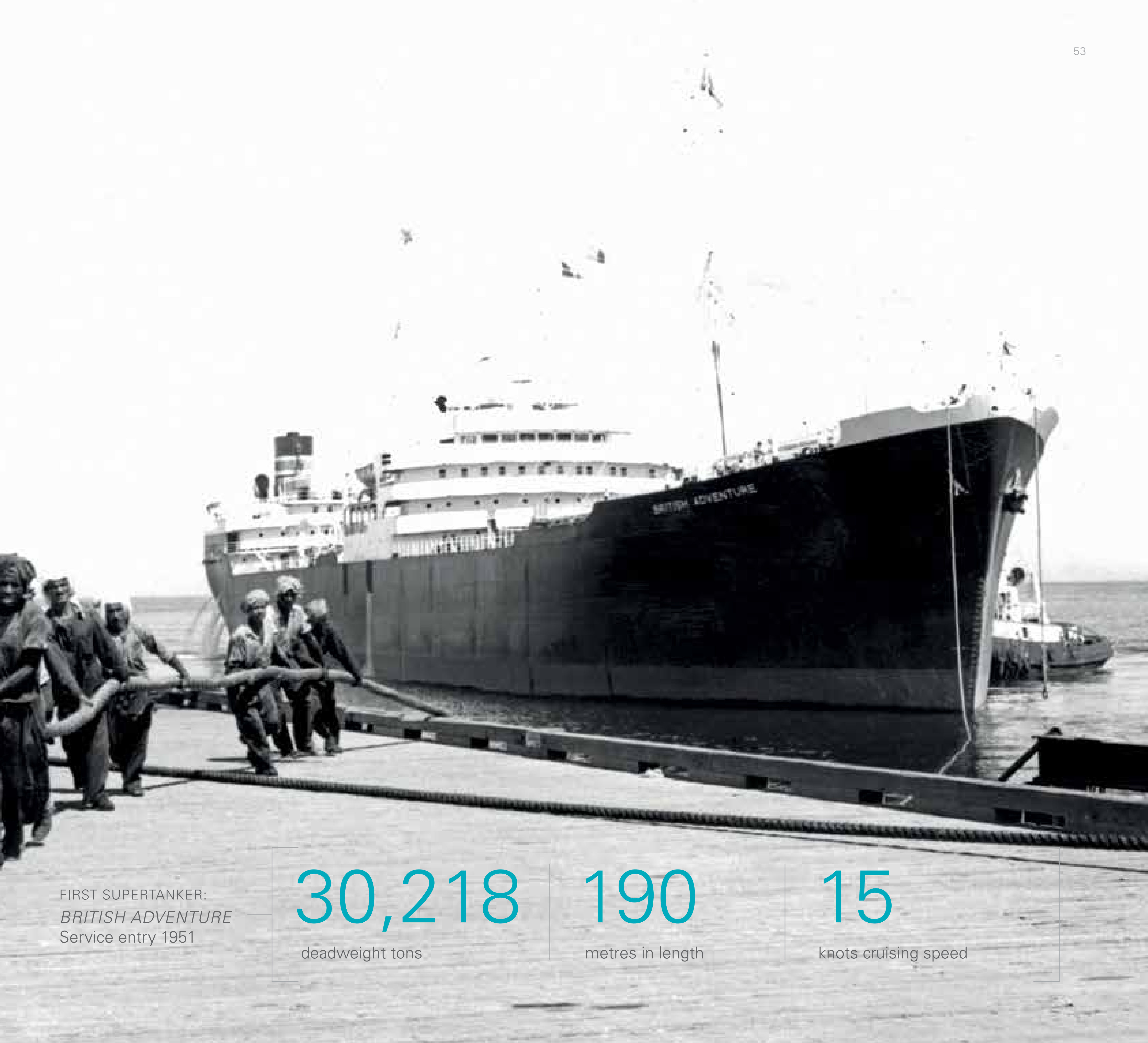
These changes brought the company's refining strategy under scrutiny. In the past, industry practice was to locate base-load refineries such as Abadan at or near the source of crude production for economic reasons. With markets set to grow to considerable scale, the economics of locating new refining capacity close by was re-evaluated. Factors such as local labour costs and especially the size of ship and the cost of shipping were becoming highly influential on the decision-making. The attractiveness of not having 'all eggs in one basket' inside a single country was just as important a factor, as the company was to discover.

Subsequently, a series of refinery expansions was begun at Grangemouth, Llandarcy, Lavera in France, Hamburg in Germany and Antwerp in Belgium. Plans were put in place for new refineries at the Isle of Grain, near London, as well as Dunkirk in France.

The immediate priority for BTC in this period was making good the shortfall in shipping capacity following the war. However, expansion and modernisation of the fleet was limited by tight capacity at the UK shipyards, a shortage of materials, such as steel, and a sharply rising delivery price. Robert Gillespie tackled the problem in three ways. The retirement of existing ships was put off; new ships were ordered; and second-hand ships with war service were acquired. New ship orders had been placed by BTC during the war years, with the intention of replacing half of the tonnage lost to enemy action. These orders had to be licensed by the Government and agreement reached on a simpler standard of ship design to recognise war constraints. In practice, only one-third of the ships lost was replaced by new-build orders during the war. Instead, they were supplemented by the purchase from the Government of 'demobbed' ships in 1945/46, which had served in the war with the 'Empire' prefix.

In February 1947, Gillespie travelled to New York and secured the purchase of the US T2 tankers that had performed so well for the allies. For the first time since 1919, BTC departed from its practice of renaming acquisitions with a 'British' prefix – and the fleet was distinguished by the addition to its numbers of the exotically named *Cottonwood Creek*, *Smoky Hill* and *Mesa Verde* among others. Despite these orders and acquisitions which brought the fleet up to 102 ships and over one million dwt, the projected production growth from Iran and the new sources coming on stream in the Middle East required further ships.

BTC began to advance the economic case for larger vessels by arguing that economies of scale



FIRST SUPERTANKER:
BRITISH ADVENTURE
Service entry 1951

30,218	190	15
deadweight tons	metres in length	knots cruising speed

BTC/BPTC owned/managed fleet 1945-1965

1945
Number of ships: 69
Million dwt: 0.75

1955
Number of ships: 159
Million dwt: 2

1965
Number of ships: 120
Million dwt: 3

The post-war period saw rapid rebuilding and growth of the fleet as economies recovered and BP oil production surged in response.

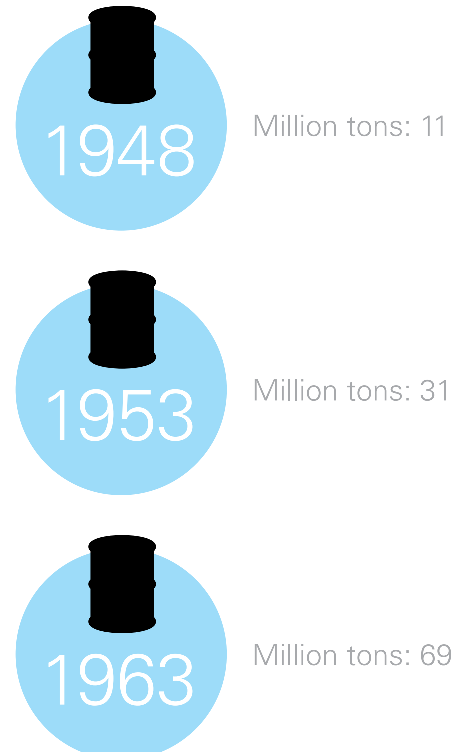
BP Tanker Company apprentices heading for shore leave in Kuwait.

would cover the additional costs incurred, such as shore tankage and port improvements. In contrast, the distribution department of Anglo-Iranian had serious reservations about such scale on the grounds that it felt larger ships would impede the flexibility of its supply activities. This was a debate that was to recur within the parent company time and again over the years. But the immediate question of scale did not go away. Four factors began to sway the argument: the expected scale of increase in the company's future oil production in the Middle East; projections of growth in world demand for oil and products; the development of the Suez Canal in deepening the draught of ships able to pass; and the abandoning of the '90% owned' policy for the shape of the BTC fleet.

In 1948, Anglo-Iranian ordered its first class of 'supertanker', with six ships placed with UK yards. *British Adventure* was launched by Vickers Armstrong at Barrow-in-Furness in December 1950. At 30,218 dwt, she was almost double the capacity of any other tanker in the fleet and the largest tanker in the world at that time. In tandem, the company invested in deeper water terminals at its facilities. At Abadan, the terminal was expanded and the approach channels at Bandar Mashur deepened. In Kuwait, as crude production began in 1946, its loading jetty at Mina al-Ahmadi was developed as the largest in the world, with virtually unlimited depth for large tankers. In Qatar, crude production began in 1949, with the Umm Sa'id terminal designed to accommodate 30,000 tonners.

In the UK, the proposed new refinery at Isle of Grain in England was also designed to allow 30,000 tonners to discharge and load. And in Scotland, it was the research and intervention of Captain W. M. Hutchison, BTC's chief marine superintendent, that led to the building of a pipeline from Grangemouth on the east coast across to Loch Long, and a deepwater terminal at Finnart on the west coast. It was a good example of the expertise of the BTC marine department working in tandem with the refineries and engineering departments of Anglo-Iranian.

BTC/BPTC volumes shipped 1948-1963



The '90% owned' rule was finally abandoned, as Gillespie turned to the charter market to fill what was to become an annual average 50% shortfall to be made up by chartering tonnage. BTC was never to return to the very high proportion of ship ownership that had prevailed up to War World 2.

The oversight of this great new fleet also required organisational change. There was a limit to the size of fleet that could be managed efficiently by one company. In 1950, a separate but associated shipping company was formed with other shipping interests as partners. The Lowland Tanker Company was to operate 10 time-chartered tankers exclusively for the company.

By 1951, the fleet had more than doubled to reach more than 150 ships, with a combined tonnage of 1.85 million dwt.

Navigating apprentice learning how to take a compass bearing on board *British Adventure*.

Right: Loading oil at Abadan, 1950s.

Below: Cleaning and painting is one of many tasks conducted to keep the fleet tankers ship shape.

CENTENARY INSIGHT

The ‘90% owned’ rule was finally abandoned, as Gillespie turned to the charter market to fill what was to become an annual average 50% shortfall to be made up by chartering tonnage. BTC was never to return to the very high proportion of ship ownership that had prevailed up to World War 2.

The first Iranian crisis

On the evening of 21st June 1951, Eric Drake, Anglo-Iranian's general manager in Iran, reported back to London that newly-appointed Iranian authorities had confiscated the company's printing press. Drake had been ordered to print and sign receipts to be given henceforth to all tanker Captains loading oil and products at Abadan stating that their cargoes were received from the National Iranian Oil Company rather than Anglo-Iranian. Drake – who later went on to become the main board MD responsible for BTC, before rising to become BP chairman – refused. BTC consequently withdrew its ships from Abadan, while Drake – accused of sabotage – made good his escape into Iraq and from there back to London. The nationalisation of the company's assets in Iran had begun.

In the immediate post-war years, the rolling back of Europe's empires on a tide of national assertiveness in the Middle East, Asia and Africa began to grow. The close association of Anglo-Iranian with British Government interests and political agenda created difficulties and tensions for the company and its operations. The UK's withdrawal from Palestine at the end of its mandate and a UN proposal for partition of the territory was followed by the declaration of an independent state of Israel in May 1948. The first Arab-Israeli war soon followed. This in turn led the Iraqi Government to stop the flow of oil to the refinery at Haifa.

For the first time in the Middle East, an oil embargo was to be a feature of an international dispute. The dispute coincided with Iraqi economic grievances about the oil concession granted to Anglo-Iranian and its partners in the Iraq Petroleum Company (IPC). Matters came to a head when, in 1950, Saudi Arabia set a Middle East precedent by securing a 50:50 share of oil profits from its US

concession holders. The following year, both Iraq and Kuwait extracted similar terms. Soon, Iran's nationalist tensions boiled over. Anglo-Iranian had already attempted to pre-empt matters by offering an improved concessionary agreement, but the murder of Iran's Prime Minister Razmara in March 1951 ended all hope of a negotiated settlement. The new Prime Minister Mohammed Musaddiq persuaded the Shah to sign into law the nationalisation of the Iranian oil industry. For the next three years, Abadan and its associated oilfields were to remain closed, as international sanctions, diplomacy, and no little political subterfuge brought pressure to bear on both the Iranian authorities and the Anglo-Iranian Oil Company.

For BTC, emergency measures were introduced on 23rd June 1951 to redeploy the fleet, which at the time amounted to more than 300 tankers, including chartered ships. Little difficulty was experienced in reprogramming the 'black oil' ships due to the alternative crude oil sources at nearby Kuwait, Qatar and Iraq. However, the closure of Abadan refinery created an immediate surplus of clean oil carriers in or on passage to the Gulf. Some of these were transferred to load crude and some put through surveys and repairs. Others were placed on long-ballast passage after redirection leaving just 18 ships held up 'awaiting orders'. To replace the lost products, purchases and shipping were arranged in the US. In Abadan, the Petroleum Steamship Company's flotilla of barges, tugs, lighters and ancillary craft was sailed to Basra and Kuwait under the command of BTC superintendent, Captain S.D. Johnson.

It was an outstanding piece of emergency logistics involving a huge fleet – executed in just two weeks – and a valuable, albeit undesired, rehearsal for what was to come in later years. For the seagoing staff of BTC, there was considerable disruption to their trading patterns with the cold, rough conditions of the Atlantic replacing the heat of the run to the Persian Gulf. The brunt of the refinery capacity lost at Abadan was at first filled by Grangemouth and Llandarcy working beyond normal capacity. The refinery additions at Isle of Grain, Dunkirk, Lavera, Hamburg and Antwerp and Venice all played their part. In the East, the new Aden refinery did not start producing until 1954, so bunkering fuel needs had to be met from the West.

In Iran, meanwhile, Prime Minister Musaddiq was overthrown in an American and British-backed coup in August 1953 and General Zahidi, the new Prime Minister, oversaw the completion of protracted negotiations, which led to the agreement of a new concession in 1954. The company was left with only a 40% share of a new consortium of international oil companies which would jointly own and operate the Iranian concession. Compensation from its new partners and the Iranian Government and a royalty on exports helped to ease the commercial pain for the company. In return, Iran would hold the right to 50% of the profits made by the consortium. In shipping, Iran demanded support in establishing its own National Flag tanker fleet and BTC and Shell were subsequently obliged to charter two new ships and to train Iranian cadets.

On 5th October 1954, *British Advocate* made her way up the Shatt-al-Arab waterway to load oil products from Abadan, so marking the end of its three-year closure. *British Oak* and *British Guardian* followed soon after to resume crude loading at Bandar Mashur. The crisis was over. The company had weathered the storm, thanks in no small part to the recent diversification of its upstream resources, as well as the commercial and operational acumen of its staff.

CENTENARY INSIGHT

The new Prime Minister Mohammed Musaddiq persuaded the Shah to sign into law the nationalisation of the Iranian oil industry. In an outstanding piece of emergency logistics, BTC redeployed the fleet which, at the time, amounted to more than 300 tankers including chartered ships.

British Advocate – 12,000 dwt – built in 1948, leaves BP's Isle of Grain, Kent, England, refinery with a full cargo. The photograph was taken from the poop of *British Honour* – a 33,000 dwt tanker built in Belfast and launched in 1958.

The British Petroleum Tanker Company

At the end of 1954, the company shareholders voted to rename Anglo-Iranian as 'The British Petroleum Company'. The newly-launched *British Soldier* became the first of the BP Tanker Company's ships to carry the green and gold colours of the shield while retaining the green and white bands on the red funnel background to keep the memory of the Persian connection. At the same time, the lion rampant replaced the Persian lion in the BPTC house flag.

Staffing levels continued to grow, with shore-based staff increasing by 30% to more than 300. Following the re-introduction of deck apprentice training after the war under a former RAF bomb navigator, group captain Ronald Marsh, similar training for young engineers began in 1952, overseen by Dan Alcock, with a target of 100 apprentices to join the 340 on the deck apprentice roll. In 1955, the launch of the 21,000 dwt *British Victory* marked the almost continuous delivery of new ships since 1948 – the longest gap between launches being two months and 10 days. It was the largest building programme in terms of ship numbers in the history of the company.

More importantly, the period marked the change from a 'general purpose' fleet to one with a clear distinction between 'crude oil carriers' and 'products carriers'. The 10-12,000 tonners had served the company well for the best part of 30 years, not least because of their versatility. They had been used to haul crude from the Middle East via the Suez Canal to the company's European refineries and to ship refined products from Abadan to Western Europe, also through the Canal. The company calculated that market-located refining would be increasingly competitive if 28,000 dwt tankers, that could transit the Canal fully loaded, were used to haul crude oil to market-located refineries.

However, Gillespie had good reason to be concerned about the heavy dependence on the Suez Canal, where increasing oil demand had put significant pressure on its use. Oil companies had begun to consider alternative routes, less through political anxiety than a doubt that the Canal capacity would be able to keep abreast with the development of tankers. In 1956, a joint study by BP and Shell for the UK Foreign Office forecast oil movements from the Middle East to north west Europe growing to 400 million tons by 1970. This far exceeded the most optimistic projection of Canal capacity of 260 million tons for that year.

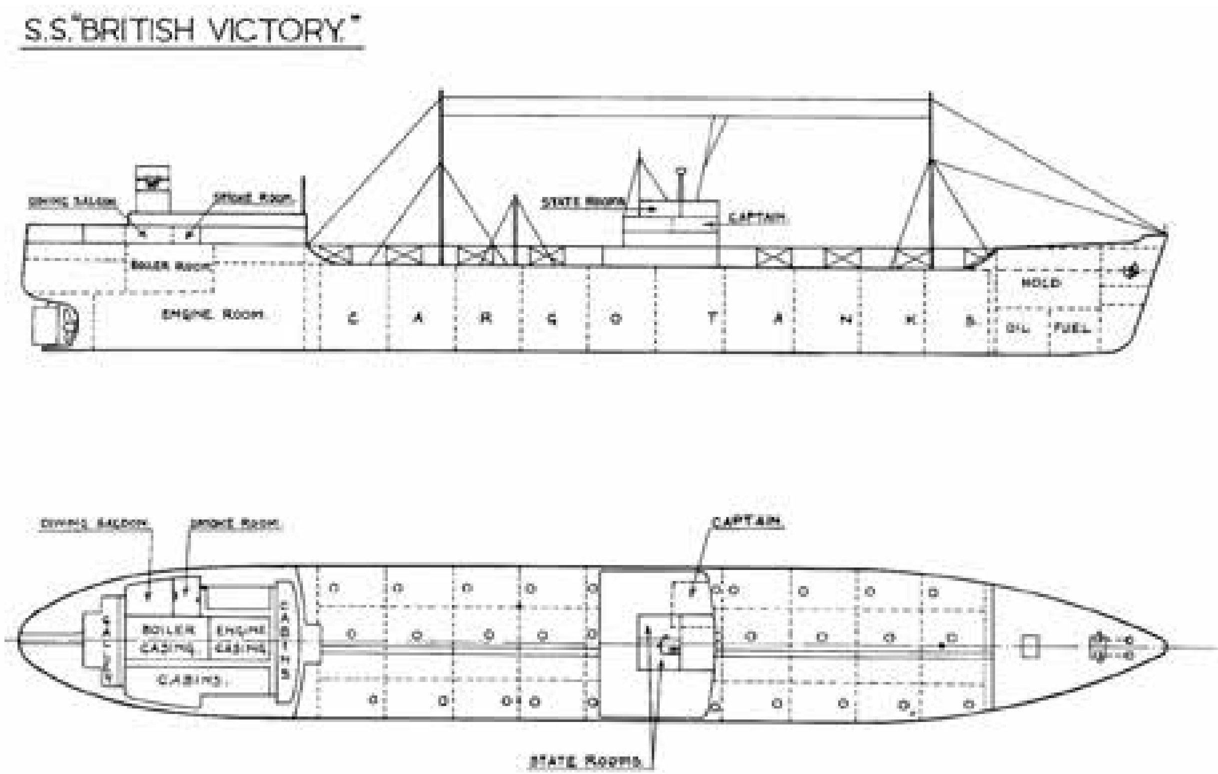
The studies in the company's planning department were soon to be overtaken by events at the Canal itself.

Above: *British Soldier* – 32000 dwt – leaving Valetta Grand Harbour, Malta, in December 1964.

Left: The sign outside the company HQ, Britannic House, Finsbury Circus, London, is changed from Anglo-Iranian Oil Company to The British Petroleum Company in 1954.

Right: Larger ships begin to navigate the Suez Canal. *British Duchess* – 42,000 dwt – hoists national, code and company house flags in preparation to transit the Canal.


BRITISH
ROSEGARTH



Above: *British Victory* was 664 feet in length – just 100 feet shorter than the aircraft carrier *HMS Hermes.* She had two steam turbines manufactured by Vickers, producing 13,750 shp. She served for 18 years in the BPTC fleet before being sold.

Left: *British Victory* – 34,000 dwt 'supertanker' – launched at the Vickers Armstrong yard in Barrow in Furness, Cumbria, England, in 1954. To her left and still under construction is the aircraft carrier *HMS Hermes,* which later became the flagship of the UK fleet involved in the Falklands conflict of the 1980s. In the distance is the aircraft carrier *HMS Majestic,* which was completed in 1955 and recommissioned into the Australian Navy.

The Suez crisis

Seven large Middle East oilfields represent more than 90% of BP's oil production in the 1950s. The route by sea to western markets was through the Suez Canal.

A man-made canal first connected the Mediterranean with the Red Sea in the time of the Pharaohs. Over the centuries, it was abandoned to silting before being dredged and reopened several times. Napoleon Bonaparte saw the political prize of re-establishing a canal, but his ambitions were frustrated by an erroneous calculation that the Red Sea was 30 feet higher than the Mediterranean. The project was duly stopped on fears that a canal would cause the Red Sea to haemorrhage into the Mediterranean to the north!

It took another Frenchman, diplomat and engineer Ferdinand de Lesseps, to convince the Egyptian Viceroy Said Pasha to support the building of a canal. It opened in 1869 at a cost of $100 million. More than 100 miles in length, its depth was about 27 feet and the largest ship load that could pass through was 5,000 tons. Almost immediately after its opening, the Canal had a significant impact on global trade, as goods began to be moved around the world in record time. In 1875, debt forced Egypt to sell its shares in the ownership of the Suez Canal to the UK. However, an international convention in 1888 made the Canal available for all ships from any nation to use. Nevertheless, Britain considered the Canal vital to the maintenance of its maritime power and colonial interests. Therefore, the provisions of the Anglo-Egyptian Treaty of 1936 allowed Britain to maintain a defensive force along the Suez Canal Zone. The new post-war order saw this force withdrawn in the early 1950s.

A revolution in 1952 led by Colonel Gamal Abdul Nasser overthrew the Egyptian monarchy of Farouk I and by 1954, Nasser had become president. Stung by the failure of the US and UK to make good on offers of loans for a dam project, the Egyptian Government seized and nationalised the Canal in 1956, ostensibly so passage fees could be used to pay for the dam. Nasser took the opportunity to berate British imperialism in the region. The reaction in Britain and France in condemning Nasser was unanimous. UK Prime Minister Anthony Eden described the Canal as Britain's "great imperial lifeline", especially for oil. He would not allow Nasser to have his thumb "on our windpipe". It was a good analogy. In 1955, Britain and the rest of Europe's refineries were almost totally dependent on imports of crude oil to feed their refineries. Two-thirds of Western Europe's oil imports came from the Middle East and of this volume, two-thirds were delivered via the 'windpipe' of the Suez Canal.

While the political storm of the closure was considerable, the initial impact on the shipping industry was minimal. BPTC introduced emergency measures – largely precautionary bunkering – but transit through the Canal continued as normal. That was all to change when Israel invaded Egypt in October 1956 and two days later, Britain and France followed on the grounds of protecting passage through the Canal. It was to be an act that history later recorded as the final death throes of Britain's imperial power. In retaliation, Egypt blocked the Canal by sinking 40 ships. These events were to become known as the Suez Crisis.

Following UK Admiralty advice to all shipping to keep clear of the combatants' territorial

Getty

Right: 'Block' ships impede traffic along the Suez Canal – "Britain's great imperial lifeline" – as oil tanks burn ashore.

Below: Aerial view of the Suez Canal blocked at Port Said by deliberately sunken 'block' ships, November 1956. Naval vessels work to remove them.

A convoy of ships is held up on the Suez Canal, December 1956.

CENTENARY INSIGHT

The crises of the 1950s in Iran and at Suez underlined the threat to BP's strategy and the increasing complexity of its business as the world changed and oil increased its grip on the global economy.

Getty

waters, BPTC rerouted all ships, whether owned or chartered. The Lowland Tanker Company's *Border Reiver* failed to receive the instructions while at Port Said and after loading at Banias, she was detained and ordered to return and discharge her cargo. Before she could comply, the order was countermanded and the Master told she could sail. Now the logistical challenge began. In prior years, Britain and the US had laid joint plans with oil companies, including BP, for a potential closure of the Canal, but when the moment came to enact the plans, the US President vetoed them. Eisenhower – with an impending election to fight – was furious at the subterfuge employed by Britain, France and Israel in staging the invasion and abandoning diplomacy. As Britain's fragile economy reeled from the international reaction, Eisenhower vetoed crucial loans from the International Monetary Fund (IMF) to Britain. At the same time, efforts to secure additional crude from US sources became difficult.

For BPTC, rapid changes to its shipping patterns had to be made. The Canal was blocked, loading at Syrian and Lebanese ports banned, and loading at Haifa refinery in Israel risked ship blacklisting. A not untypical deployment on 22nd November 1956 consisted of eight owned and chartered ships proceeding home via the Cape, 56 sent west to load and 47 sailing via the Cape in ballast to load in the East. For those at sea – so soon after the Iranian crisis – this again meant long voyages and because so little crude was released by the US, many of the ships sent to load in the West had to change from black to clean oil. The winter of 1956/1957 would be remembered for days of tank cleaning in a rough, cold, grey ocean.

For Britain and France, the military operation was short-lived. Faced by imminent financial collapse, Britain stopped the operation on 7th November and withdrew its troops in humiliating circumstances. Prime Minister Eden resigned. The Canal re-opened a few months later and, much to the surprise of the industry, continued to operate efficiently. Its Egyptian owners pursued a development programme although financing was to be an issue.

It couldn't be said that the crises of the 1950s in Iran and at Suez brought the company or BPTC to the brink of financial ruin, but both events underlined the threat to BP's strategy and the increasing complexity of its business as the world changed and oil increased its grip on the global economy. They also highlighted the need for ever closer co-operation and understanding between BP's supply and shipping arms.

As the 13-year tenure of Sir William Fraser (Lord Strathalmond) came to an end in 1956, Robert Gillespie, the BPTC MD, was invited to join the main board of BP. He was the first shipping employee to achieve this position since Douglas Stewart in 1925. J. Houston Jackson stepped up to GM and then MD, and D.G.L Bean, from the supply and development department, was appointed his deputy in a deliberate step to foster closer relations. When Gillespie retired in 1958, he was replaced on BP's main board by the redoubtable Eric Drake, who assumed board responsibility for both shipping and supply. Gillespie and Drake brought the major operational and technical affairs of shipping to the attention of the main board by forming an administrative committee for this purpose. They had much to consider.

Since its inception in 1908, BP's strategy had been a fairly simple one, focused on upholding the upstream concessionary regime that gave it access to some of the cheapest to produce crude oil in the world. BP's strategic response to the dilution of its Iranian concession was threefold: it would seek to diversify its operations and intensify its search for oil outside the politically volatile Middle East; it would further develop its portfolio of market-based refineries; and it would size and scope its fleet to achieve economies of scale and flexibility across its crude and products trade. Exploration was stepped up, with discoveries in Nigeria, Abu Dhabi and Libya, but nearly all of BP's crude production still continued to come from concessions in countries in the Middle East and Africa.

The company's commitment to increasing production to meet the demands of oil-producing countries came increasingly at the expense of profits. It resulted in a substantial physical expansion in BP's sales from fewer than one million barrels per day (bpd) in 1955 to nearly four

BTC/BP Tanker Company key operations: 1946-1969

million by the end of the 1960s. However, across the same period, BP went from being the most profitable oil major to the least profitable. Strong supply competition and weak oil prices, especially in Europe, where much of the company's marketing took place, were to blame. In contrast, US companies continued to enjoy the higher prices obtained inside their domestic market, which was protected by import quotas.

Oil companies with a strong reliance on Middle Eastern supply suffered all the more by an obligation to remunerate their host countries on the basis of posted rather than market prices. In 1959, the oil companies had cut their posted prices for Persian Gulf and Venezuelan crudes following an unexpected flood of Soviet oil onto the market. Wounded by the impact on profits from their renegotiated concessions, Iran, Saudi Arabia, Kuwait, Iraq and Venezuela founded the Organisation of Petroleum Exporting Countries (OPEC). Market power in oil pricing was about to undergo a seismic shift.

BP continued its post-war expansion of refining through the 1950s and 1960s, seeking to increase the volume refined fivefold. As well as refinery expansions in the UK, France, Belgium, and Germany, five new 'grass-roots' refineries were also brought onstream in Germany, the Netherlands, Sweden, France and Italy. Among these, the expansion of the new Rotterdam refinery stood out. Rotterdam was to become the world's largest port, a great 'entrepôt' close to the main industrial areas of north west Europe.

To the east, refineries at Abadan, Aden and Kuwait were producing 20 million tonnes of products for the Indian Ocean/Pacific markets, while the addition of refineries in Singapore, Melbourne in Australia, and Whangarei in New Zealand, together with the beginning of crude and products shipments to Japan, all served to increase BPTC shipping movements eastwards.

Now the question of the size and shape of the future fleet had to be determined.

Bigger, fewer ships

Above: *British Queen* was 760 feet in length and almost 100 feet wide. She served in the fleet for 16 years.

Left: *British Queen* – 50,000 dwt – launched by Her Majesty Queen Elizabeth the Queen Mother at John Brown's Clydebank yard in Glasgow, Scotland, in September 1959.

The Times

Despite the turmoil of the Iranian and Suez crisises of the 1950s, BPTC was emboldened to order 39 more ships. For the very first time, orders were placed with a yard outside the UK.

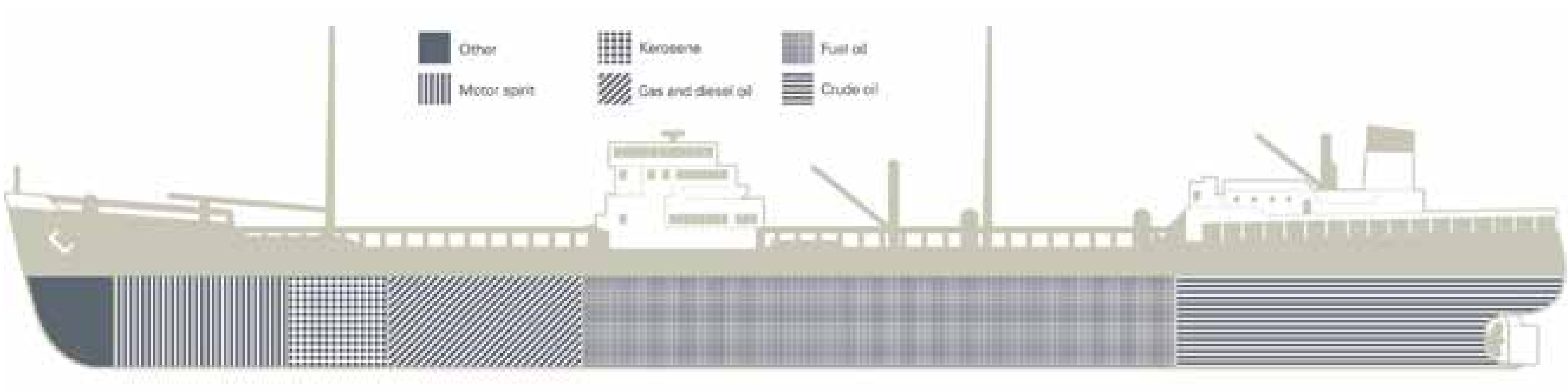
This was a desperately difficult time for the British shipbuilding industry. Despite tanker transport being the fastest-growing sector in world shipping, many British ship owners continued in their traditional business of operating liners in a declining passenger market facing growing competition from air travel. While Japanese, Norwegian and Greek ship owners expanded their supertanker charter fleets, there was a shortage of independently owned British tankers available for charter to the oil companies. Matters were not helped by UK yards becoming increasingly uncompetitive through a reluctance to offer fixed pricing and by offering delivery times significantly longer than overseas competitors.

That said, BPTC's first experience of overseas orders was not completely happy. Six ships ordered from Italian yards began with the delivery of what was to prove the ironically named *British Light*. The ships invariably suffered electrical problems in service to such an extent that they were compared unfavourably with their British equivalents and described as "certainly more handsome but much less reliable". The Italian ships were part of an order for 23 ships of 35,000 to 42,000 dwt and eight product ships (the Bird class of 14-15,000 dwt) of which *British Fulmar* was the first to be delivered in 1959. Options were held on a further 39 ships.

This huge commitment to bigger ships was considered necessary because of the continuing shortage of building berths, the need to provision for the Suez situation and to ease manning problems. However, even as the new ships began to launch down their slipways, BPTC planners continued to grapple with the issue of tonnage forecasting. Forecasts of a fleet of 199 ships and 4.1 million dwt capacity required for 1963 soon needed to be revised downwards, despite BP's oil sales growing faster than the world average. It was clear that changes in the pattern of trade were having a much more complex impact on tonnage forecasting than hitherto.

In July 1956, BP's chairman, Basil Jackson, was advised that "oil can be delivered from the Persian Gulf via the Cape to the UK in a 70,000 tonner at

Variety of products carried in 1950

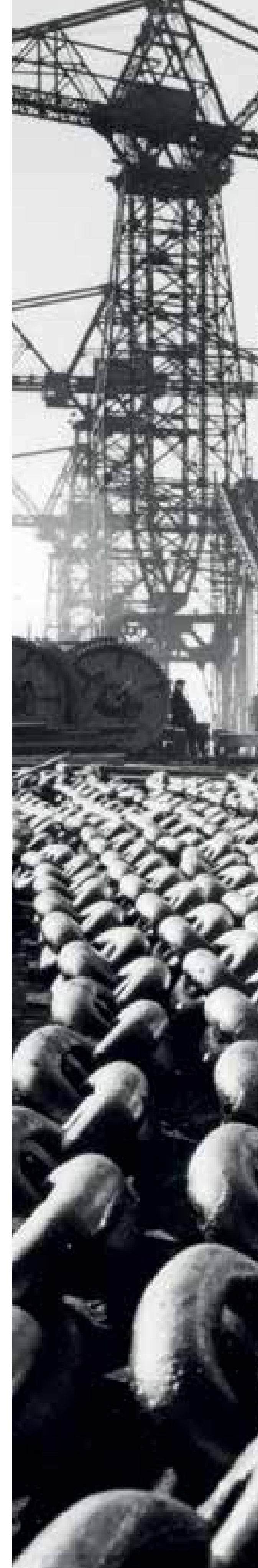


a cost no higher than a 32,000 tonner via Suez." In a board note, BPTC concluded: "The main factors accounting for the reduction in tonnage are the increase in the element of short-haul crude in our programme from Sahara, Eastern Med and Venezuela; the slowing down of industrial expansion and energy requirements; the effect of US import restrictions; the difficulties of trading with Brazil and Argentina; and the reductions made at the request of the (UK) Government in the delivery of oil fuel to the Central Electricity Generating Board."

The rapid and unexpected recovery of the Canal after its closure also contributed to a surplus of tankers in the late 1950s. Oil companies and independent owners had been ordering heavily up to and during 1955/56, partly because of doubts about the Suez Canal Company plans, and partly against optimistic estimates of world oil consumption. A mild winter in Europe in 1957/58 only made matters worse. As a result, the lights began to burn late into the night in the offices of the shipbuilders as BPTC was obliged to open negotiations on delivery deferments, changes in size, and tightening of costs. The improved, faster 32,000 dwt *British Industry* was first to be delivered and was soon followed by a series of 42,000 tonners, including *British Queen*, which was enlarged to 50,000 dwt by the John Brown Shipyard in Glasgow, Scotland, for delivery in 1959. The order book was modified to upgrade some ships to 65,000 dwt. The 68,000 dwt *British Commodore* had been ordered for delivery in 1962, but was deferred by five years and finally delivered in 1967.

As the surplus developed, the pace of scrapping prewar 12,000 tonners picked up and soon extended to war-time and immediate post war-time vessels – peaking in 1961 at 26 ships and 288,000 dwt. By this time, ships of only 11 years old were being disposed of at their second special survey after being judged uneconomical against the depressed charter rates for black oil and unsuitable for clean oil. The wartime T2s – although still reliable and popular – met their fate in this period, largely due to heavy fuel consumption.

Other measures to improve fleet effectiveness continued to be adopted, such as Cape-routeing and slow speeding. Even holding ships off their discharge points was employed, although this proved immensely unpopular for officers and crews waiting to end their voyage and go ashore. One of the most effective means of addressing the surplus was to advance the dates of dry-dockings, repairs and surveys and to adopt what Edward Platt, technical director for BPTC described as a "thoroughness before speed attitude" to the task. BPTC studies comparing 50,000 and 100,000 tonners demonstrated the commercial case for employing the larger class of ship, both from the Eastern Mediterranean to the UK and from the Gulf via the Cape loaded, returning via Suez in ballast. In 1961, invitations to quote for 100,000 dwt ships were issued to Vickers Armstrong and Swan Hunter. Launched in 1965, *British Admiral* became BTC's



Left: *British Admiral* had a chain cable of 2,340 feet in length. The chain cable is connected to the anchor at one end, and to the bitt heads which are fixtures on the ship. A ship's cable that has to be played out to the 'bitter end' indicates that it is at the extreme of its operation.

Below: *British Admiral* – 111,000 dwt – was the first fleet ship to exceed 100,000 dwt. At her launch from the Vickers yard in Barrow-in-Furness, Cumbria, England in 1965, she was the largest merchant ship in Europe.

Below right: Her Majesty Queen Elizabeth II launches *British Admiral* in 1965.

largest owned ship at that time. The move from a general purpose fleet to a fleet split between crude carriers and product carriers, begun in the late-1940s, was now particularly evident in the scale of crude tonnage. In 1956, just 18% of BP's tonnage was represented by ships of 28,000 dwt and above. By 1963, this had risen to almost 70%.

Another significant change was in the financing of new ships. After Suez, the world surplus of oil had a major impact on prices, especially in key markets for BP in Europe. BP's profits were impacted and, with a heavy capital investment programme under way, it sought ways to raise new finance, such as via a debenture issue.

The total capital commitment for ships 'forward' was £200 million. For 1957, it represented almost one-fifth of total BP capital expenditure. To ease the financial burden on the company, BPTC entered into lease-back arrangements, whereby tankers built for BP were sold to the Clyde Charter Company and the Tanker Charter Company and financed by a combination of bank loans and debentures subscribed by institutions. The ships were then chartered back and manned, operated and managed by BPTC becoming indistinguishable from the owned fleet.

Other 'companies of convenience' emerged at this time as a means of spreading the finance and managerial burdens of the fleet. BP Clyde Tanker Company was created out of the old Petroleum Steamship Company to run and manage ships transferred from BPTC, together with ancillary craft in the Persian Gulf. With offices in Glasgow, its secondary objective was to combat the shortage of junior engineers by tapping the resources associated with shipbuilding and engineering on Clydeside. BPTC staff were seconded, but the Clyde venture ended in a short number of years. The Lowland Tanker Company, Nordic Tankships Partnerships, Mil Tankrederi and Warwick Tanker Company all played roles in spreading the financial and operating burden of BPTC at this time.

Above: *British Duchess* – 45,000 dwt – under construction at John Brown Shipyard at Clydebank, Scotland, in 1958. Three generations of tanker carried the *Duchess* name.

Opposite: A sun 'sight' is taken by a Third Officer on *British Glory* in the 1960s. The primary use of a sextant is to determine the angle between a celestial object and the horizon known as the object's altitude. The angle, and the time when it was measured, can be used to calculate a position line on a nautical chart. Modern-day cadets continue to learn to use a sextant alongside modern navigating technologies.

British Explorer – 215,000 dwt – was BPTC's first very large crude carrier (VLCC). Built in Japan in 1969, it is pictured here undergoing sea trials.

Nagasaki: Phoenix from the ashes

The BP Tanker Company reached its 50th birthday in 1965 as one of the world's largest tanker fleets. Its pre-eminence in the shipping industry at this time was captured by the magazine *Tanker and Bulk Carrier* in its June edition: "BPTC looks back upon half a century of progress and development that has reflected and matched the rapid growth of the oil industry itself." The fleet: "now consists of more than 100 ships, aggregating 2,700,000 dwt and there are a further 28 ships operated under associated company house flags. In addition, ships totalling 3,400,000 dwt are long-term chartered from independent tramp owners, not to mention other vessels that are chartered on a voyage basis."

George King, the first seafarer to become MD of BPTC, recalled: "It was a time of enormous confidence in the oil industry. Crude oil was cheap and demand was high. It seemed in the mid-'60s that progress meant going on forever getting bigger and busier. Occasionally, a still, small voice might whisper that the bubble would have to burst one day, only to be dismissed as preposterous."

Now the company prepared to embrace the age of the very large crude carrier (VLCC) of 200,000 dwt and more – and over 300 metres in length. In March 1966, BP completed a long-term supply review, which recommended terminal extensions at four ports and six refineries to accommodate tankers of 170,000 dwt or larger. Conservative elements in both supply and shipping departments still argued the case for building 75,000 and 170,000 tonners capable of transiting the Suez Canal in ballast but this view did not prevail. In May 1966, BPTC placed its first long term charters for 200,000 tonners for periods of 10 to 15 years from 1969.

The world tanker market was not short of vessels of this size for charter and with the company constrained by capital spending elsewhere, BPTC was discouraged from building its own. This was to change when Japan's Mitsubishi approached BPTC with a proposition to trade crude oil for new ships. A deal was struck in 1967 for two 215,000 dwt VLCCs from Mitsubishi's yard at Nagasaki. $21 million was received for the sale of crude and $26 million paid out for the two ships. It was a good deal all round. Seven VLCCs were obtained from Japanese yards over the next five years.

There was something quite extraordinary about these mutually beneficial deals involving oil for ships. Little more than 20 years had passed since Britain and Japan had been locked in a terrible world war. Both countries had hardly begun to emerge from the legacy of that conflict and deep physical and emotional scars remained at a personal and national level on both sides. The port city of Nagasaki had previously been known for its rich shipbuilding heritage, but it was now indelibly marked by the atomic weapon that fell upon it in 1945, bringing war in the Pacific to a close. It was an especially poignant place to entrust the building of BPTC's first two VLCCs.

The 215,000 dwt *British Explorer* was launched on 16th November 1969 and was followed shortly after by *British Inventor*. These huge ships carried a new, simplified funnel marking focused on the BP shield, which coincided with a new marketing campaign by the parent company. More orders followed from European yards for both BPTC and its French associate.

The Radio Officer on *British Explorer* in 1970. Undertaking a vital role monitoring the airwaves and overseeing communications equipment, the Radio Officer's ('Sparks') role became redundant by the end of the century, due to the advance of satellite communications.

CENTENARY INSIGHT

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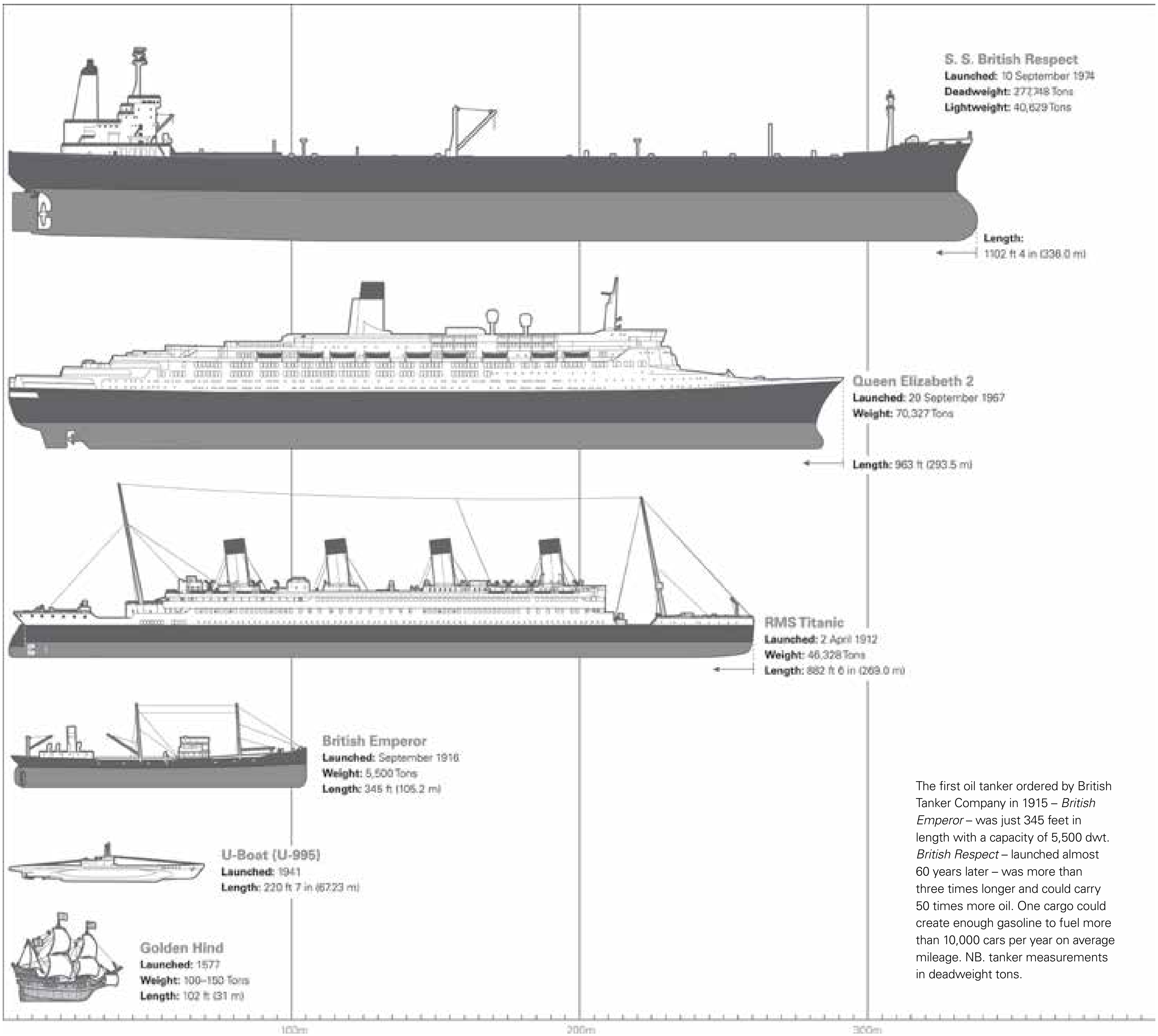
Size comparison chart



The first oil tanker ordered by British Tanker Company in 1915 – *British Emperor* – was just 345 feet in length with a capacity of 5,500 dwt. *British Respect* – launched almost 60 years later – was more than three times longer and could carry 50 times more oil. One cargo could create enough gasoline to fuel more than 10,000 cars per year on average mileage. NB. tanker measurements in deadweight tons.

Suez or Cape?

On Saturday, 10th June 1967, BP's assistant general manager in charge of oil supply, a rising young economist named Peter Walters, was mowing the lawn at his London home. George McKenzie, head of ship chartering, telephoned him. "We've just had Aristotle Onassis on the phone," Mackenzie said. "He wants to know whether we want to charter his tankers."

"What, all of them?" Walters asked.

The Greek shipping millionaire owned 2.5 million dwt of tankers, the biggest independent fleet in the world. "Yes," came the reply. "It's an all or nothing deal for one year. He is giving us first option until noon today."

By the mid-1960s, the Suez Canal Authority had become deeply concerned by the competition posed by Cape-routed larger tankers and sought discussions with the oil companies. Proposals for a 48-foot and even a 62-foot draught for the Canal now rather fell on deaf ears as so many owners had purchased ships in excess of 200,000 dwt and 62-foot draught. As long as VLCCs sailing loaded via the Cape could return through the Canal in ballast and the dues payable remained viable, then there was little support and some scepticism about the development proposals.

It was just as well. On 7th June 1967, the Suez Canal was closed once again as a reprisal for British and US support for Israel in its 'Six-Day War' with Egypt, which drew in other Arab nations. Initially, almost every source of crude oil in the Arab world except Iran was denied to the West. It was this that had led to the dramatic call and offer of ships to BP from the Greek shipping magnate. Under Robert Gillespie in the 1950s, BPTC had a general aversion to the 'larger than life' independent owners, such as Stavros Niarchos and Aristotle Onassis, who had sought to outdo each other by building ever-larger tankers. Now needs must. Onassis's asking price was high but 10 minutes before noon, Walters called back and the deal was done. "Sunday was a difficult day," Walters admitted later, but by Monday, charter rates were already increasing and a week later, they had doubled. Unlike 1956, the Canal was to stay shut for eight years not eight months and Walters's decision – estimated to cost £80 million – proved to be a good one.

However, it was not long before embargoes and restrictions were relaxed, with Kuwaiti oil flowing on 22nd June and the Eastern Med terminals re-opening on 29th July 1967. For BPTC, it was 1951 and 1956 all over again, with extensive

"We've just had Aristotle Onassis on the phone", Mackenzie said. "He wants to know whether we want to charter his tankers." "What all of them?" Walters asked.

rerouteing and heavy chartering, with the difference that the US was affected as much as the UK this time. Fortunately, Iran and the independent operators of 'clean flag' tankers provided the market with a large crude supply and a considerable fleet that was immune from Arab embargo. The chartering opportunities for independent owners were enormous as single-voyage 'dirty rates' multiplied by a factor of eight overnight.

As the company with the heaviest dependence on Middle East crude and facing the long route around the Cape, BP engaged in the heaviest chartering activity of all. With the Onassis contract in place, fixtures for June were for 212 ships for 410 voyages, totalling 14 million cargo tons, 14 short-period charters and three three-year time charters. Eight VLCCs were taken for 15-year time charters.

While the economic effects of the shipping boycott and Canal closure were severe, they were also short-lived. For BPTC and the wider shipping industry, the latest crisis did much to hasten Cape routing in VLCCs as the preferred and most economic method of transporting oil from the Gulf to Europe and the US. The remaining concerns about navigational safety, reliability of hull and machinery and the viability of shore support requirements were overcome.

The suggestion that it was the entrepreneurial drive of the independent owners that was the prime cause of the rapid growth in tanker size at this time was disputed by BPTC's Edward Platt, who believed: "It was the oil companies that had to make both the technical judgment and the overall economic choice, which depended upon the balance between the downstream investment in shore installations and the voyage economics of the ships."

Increasingly, these installations were undertaken in partnership with local authorities, and in the upstream, all of the principal Gulf loading facilities were joint ventures. This trend now spread across Europe, first to the crude reception and storage facilities, then downstream to refining capacity. However, the advent of these extremely large ships meant that the economics of size in transportation could soon be lost in queuing to discharge or through excessive quantities of crude in storage awaiting refining. This stimulated the introduction of the 'entrepôt' principle to crude oil distribution.

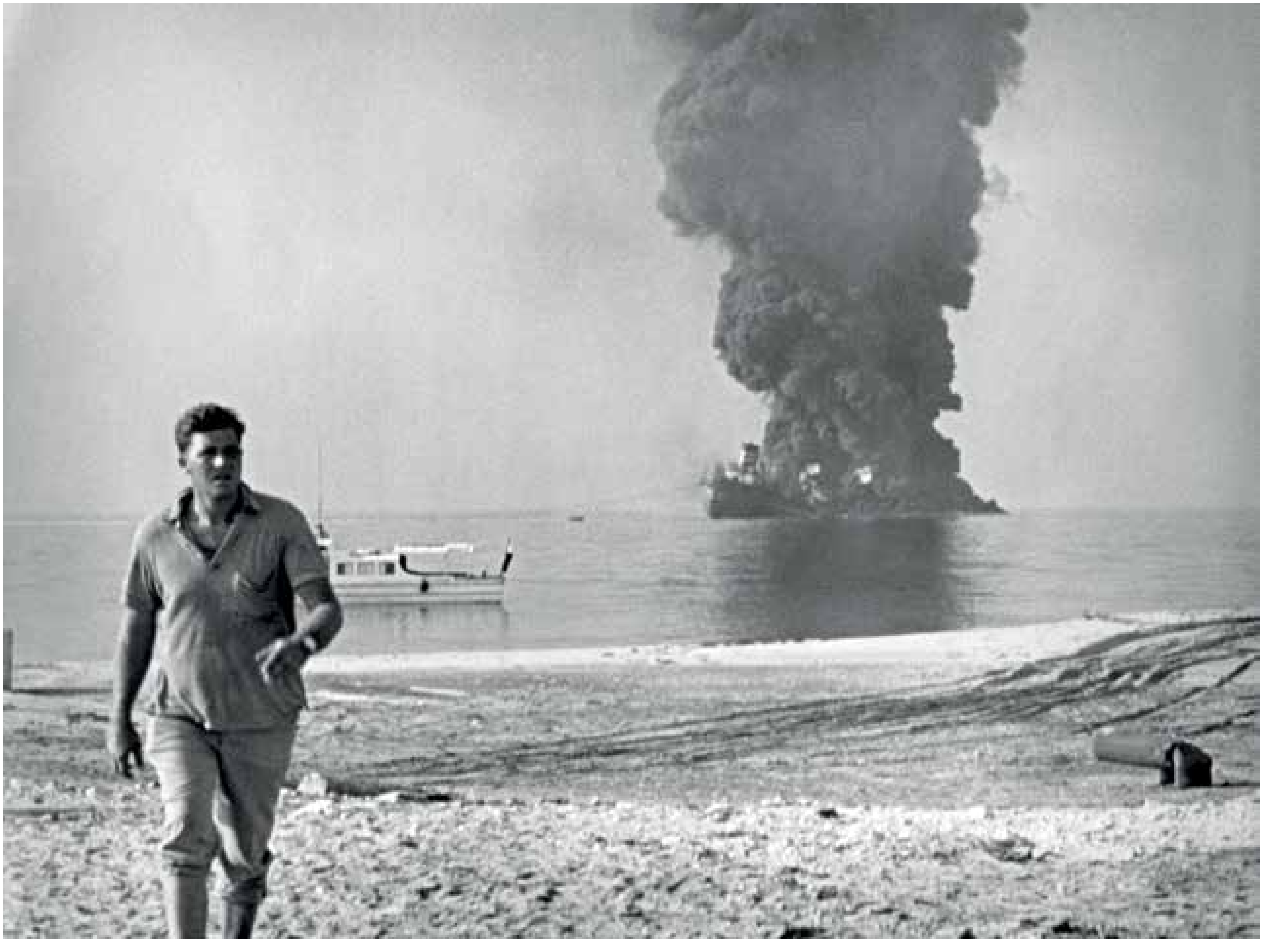
Down through the centuries, trading posts have acted as an 'entrepôt', where merchandise can be imported and exported without paying import duties, often at a profit. This typically reflected the reluctance of ships to travel the entire length of a long trading route and made them more willing to sell to an entrepôt instead. The entrepôt would sell the goods on at a higher price to ships travelling the other segment of the route. In modern times, entrepôts such as Rotterdam offered a hub for crude and products to be refined, traded, stored and redelivered.

BPTC based its operation on 16 to 18 200,000 tonners between the Gulf and Finnart, Milford Haven and Rotterdam. Its hub lay in the use of entrepôt facilities at Rotterdam to supply north west European refineries. Alternatives to the entrepôt facilities were simple, two-port discharge voyages often practised with either Finnart or Milford Haven, followed by Isle of Grain, Gothenburg in Sweden, or Wilhelmshaven in Germany, or through the lightening of VLCCs into smaller tankers.

Corbis

Left: Aristotle Onassis (pictured front right) was one of several independent tanker owners to take advantage of the lower costs and freedoms of registering their vessels under 'flags of convenience', as they built up large fleets in the post-war period.

Opposite: A ship pilot and service engineer are airlifted onto *British Explorer* off Rotterdam, in the Netherlands, 1971. The pilot plays a critical role in supporting the Master when guiding a tanker safely into port using local knowledge of the seaway.



On the 20th August 1966, *British Crown* – 28,000 dwt – suffered a terrible explosion when loading in Qatar with the loss of 19 lives. (Chapter 4).

British Crown and *Torrey Canyon*

The emergence of the supertanker and the VLCC in the 1950s and 1960s not only scaled up the amount of oil that could be transported by ship, it also multiplied the potential impact should things go wrong. Two particular events were to weigh heavily on BPTC and the wider industry.

At 5.25am on 20th August 1966, the 28,000 dwt *British Crown* exploded and caught fire while loading crude at Umm Said in Qatar. Twelve British officers, six Indian crew members and the local Qatari berthing officer were tragically killed. The Master, Captain Tuckett, the chief officer and eight Indian crew members were injured. (Chapter 4).

In the years before the Second World War, BTC only had three significant incidents on record. In 1956, the 28,000 dwt *British Bulldog* suffered a large tank explosion, with heavy damage but no casualties. In 1965, *British Flag* exploded and caught fire while in Swansea Port, in Wales, with one crew member killed and another injured.

While the official inquiry conducted by the UK Government's Board of Trade found *British Crown* to be seaworthy and no individual blame was laid, recommendations were made for improvements in equipment and procedures. BPTC went farther and decided to retro-fit an Inert Gas System (IGS) to the BP fleet – something it had already introduced for new ships.

IGS was not invented by BP, but the work of Dr Charles Sutton, Iain Telfer and C. Fred Day at BPTC and Dr Ken Brummage at BP's Group Research Centre in Sunbury, UK, was instrumental in changing the tanker industry debate from a focus on eradicating possible causes of ignition on board to methods of neutralising the gases that could fuel an explosion in the first place. Their work was soon to broaden into an industry-wide study of tanker explosions, which BPTC led in association with the UK Chamber of Shipping.

BPTC became the first major fleet operator to install what was to become arguably the most important safety improvement in the history of shipping hazardous cargoes (Chapter 6). In 1970, after major explosions on vessels in other fleets, BPTC was approached by the International Maritime Organisation (IMO) to advise it on inert gas systems and its recommendations were eventually incorporated into IMO conventions. The initiative was to receive the prestigious Samuel Baxter Prize of the Royal Institution of Naval Architects in 1973. Ralph Maybourn, later director of BPTC, recalled: "We never looked back after that, we were recognized as the leaders and the thinkers in this type of activity and people just came to us and recognised us for the expertise that we had."

Undoubtedly, there was never a time when the matter of 'safety at work' was not a priority in the minds of every seafarer who ventured out onto the great oceans of the world. Now the industry was beginning to formulate and share best practice and to standardise its approach. The same could be said for its approach to environmental matters. In 1954, an International Convention for the Prevention of Pollution of the Sea by Oil (OILPOL) had been drawn up to prohibit the discharge overboard of oily waste from tank cleaning within 50 miles of shore. A stalemate developed with IMCO and governments pressing for total elimination of any oily discharge, while the industry sought to perfect the system of 'load on top' (LoT) as far as possible, with a longer-term aim to achieve total elimination. (Chapter 6).

That was all to change when *Torrey Canyon* struck the Seven Stones near the Scilly Isles, off the UK south coast, in March 1967, spilling 100,000 tons of oil and contaminating a total area of about 185 miles along the coastline of England and France. *Torrey Canyon* was on a single voyage charter to BPTC, with more than 119,000 tons of crude oil on board. Her Liberian-registered owners operated three ships on behalf of Union Oil of California.

CENTENARY INSIGHT

Torrey Canyon and *British Crown* brought about directly, if slowly, all the features that would be introduced in the 1970s and early-1980s to increase the safety of large tankers and reduce the consequences when accidents arose. These included limitations on tank size, structural design for heavy weather, inert gas, improved tank cleaning, traffic control in channels and estuaries, and, finally, the total segregation between cargo and ballast in the ship.

BP had no legal liability for the loss of the cargo, the ship, or any resulting claims for oil pollution, damage to shore property, or wreck removal. Nonetheless, the incident seized public attention in and beyond the UK and France and it was a sharp reminder to BP that in the court of public opinion, issues of legal liability cut little ice.

As the 1960s drew to a close, it had become increasingly evident that tanker safety and oil pollution were bound together in a cause and effect relationship. Inevitably, the safety of tankers from hazards that included operational error, mechanical unreliability, structural weakness, and cargo flammability became linked in the public mind with oil pollution. A new international convention was signed in 1969 by 20 countries and, under its terms, victims of oil pollution damage could claim compensation up to higher monetary limits from ship owners and from insurers.

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Small stockpiles of the new equipment were established by BP in Marseille, Capetown and the Isle of Wight, where Vikoma had its manufacturing base. Lessons learned from subsequent incidents resulted in BP closing the three stockpiles and establishing an international oil spill response facility at Southampton, England. Here, equipment could be constantly maintained and expertly deployed during an incident by a team of trained mariners. BP Oil Spill Response Base was unique at that time in that the equipment maintained and stored there was capable of being transported to anywhere in the world accompanied by a team of experts. The base also established itself as a world-leading training centre in oil spill response strategies and techniques. Students from many companies and governments attended from all over the world. With its extensive test tank and marine facilities, the base was also used as a proving ground for new equipment being developed at Sunbury and other sites.

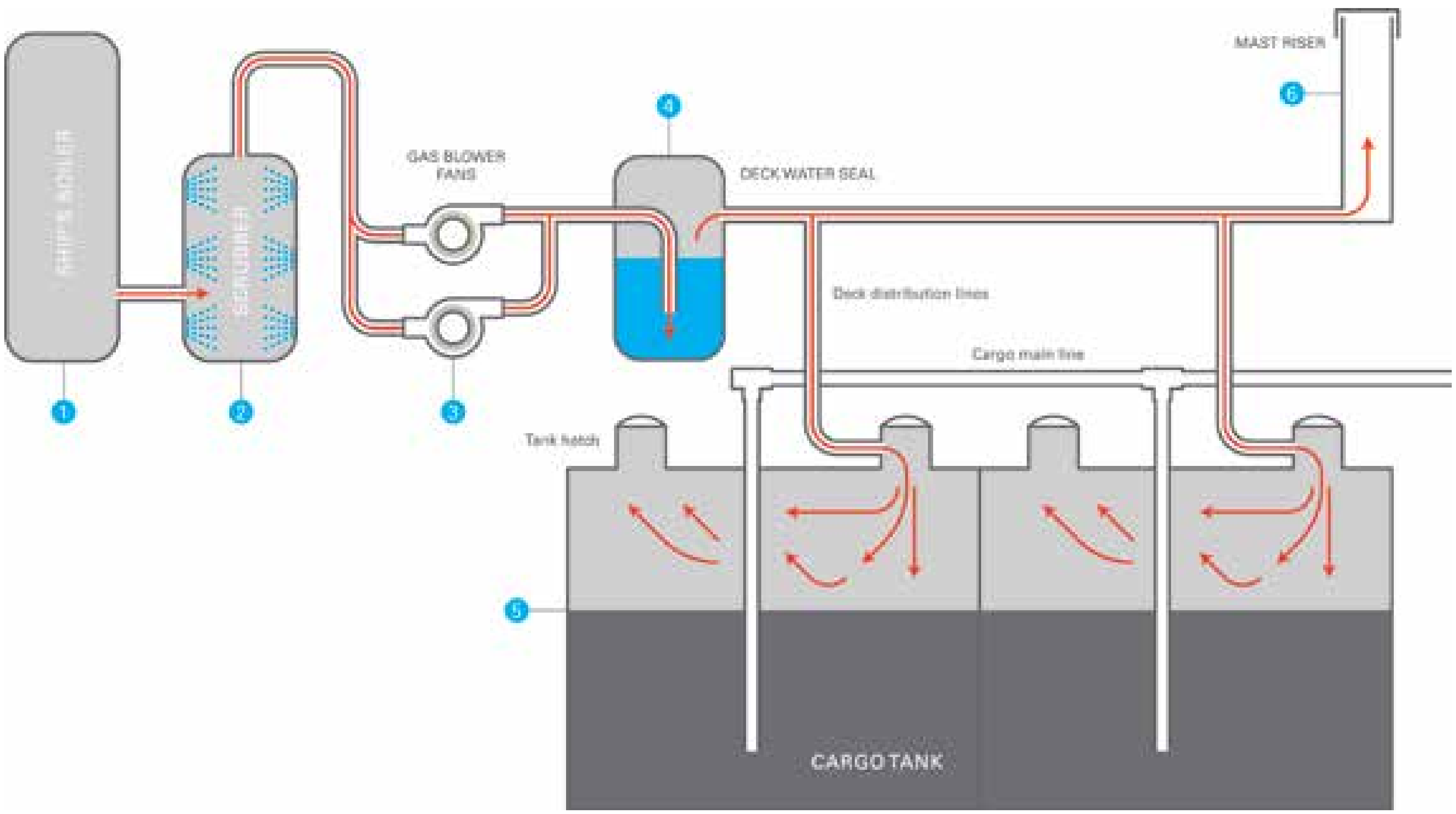
Most of the staff who manned the base were drawn from marine and engineering officers serving in the BPTC fleet. Their particular marine and engineering skills honed in the fleet, coupled with their ability to operate in abnormal situations, made them ideal for deploying and operating in the difficult circumstances surrounding a major oil spill incident. The facilities of the base were later shared with other oil companies, although it continued to be operated by BP. The base was renamed the BP Oil Spill Service Centre (OSSC) to reflect its wider role.

In discussions with Shell and Exxon, BPTC helped form a self-regulatory agency – the 'Oil Companies International Marine Forum' (OCIMF) with Peter Medcraft, MD of BP's shipping arm, 'a founding father'. It went beyond the issue of establishing liability and developed two important agreements among the parties involved in the carriage of oil at sea for clean-up and compensation. It laid important groundwork for subsequent schemes under the auspices of the International Maritime Organisation.

Inert Gas System

The Inert Gas System represents arguably the most important contribution to oil tanker safety. The development and adoption across its fleet of a system for modern tankers was undertaken by BP Tanker Company in the 1960s, patented and then made available without charge to the worldwide shipping industry. In the 1970s, after a series of explosions on vessels from other fleets, the International Maritime Organisation, after consultation with BP, adopted and mandated the Inert Gas System. It represents one of the finest achievements of BP's shipping arm across the 100 years of its existence.

Inert gas is a gas that contains insufficient oxygen (normally less than 8%), which acts to suppress the combustion of flammable hydrocarbon gases. By taking inert gas from the exhaust gases produced by a ship's boiler or engine, treating them and then pumping them into the cargo tanks, an atmosphere is created whereby the gases in the cargo cannot explode or burn.



1 EXHAUST GASES SOURCE (BOILER): Inert gas source is taken from exhaust uptakes of boiler or main engine, which produces flue gas that would normally be vented to air via the ship's funnel.

2 SCRUBBING TOWER: Flue gas enters the scrub tower from the bottom and passes through a series of water spray and baffle plates to cool, clean and moisten the gases. Sulphur dioxide is greatly reduced and soot removed.

3 GAS BLOWER: Normally two types of fan blowers are used, a steam-driven turbine blower for inert gas operation and an electrically-driven blower for topping up.

4 DECK WATER SEAL: The seal stops the gases, that are coming from the blower to the cargo tanks, returning. Normally, wet-type deck seals are used. A demister is fitted to absorb the moisture carried away by the gases.

5 CARGO TANK: A vessel has a number of cargo holds and each hold is provided with an isolating valve. This controls the flow of inert gas to the hold and is operated only by a responsible officer on the vessel.

6 MAST RISER: This is used to maintain a positive pressure of inert gas at the time of loading of cargo, and during the loading time, it is kept open to avoid pressurisation of the cargo tank.

British Sailor – 33,000 dwt. Here, the Captain is viewing a radar screen.

Oiling the gears

The 1960s and early-1970s were undoubtedly a time of great change for the BPTC fleet and the marine industry in general – much of it positive. Ships entering service were well-designed and of high quality; technology was advancing rapidly; and sophisticated monitoring and control systems were being employed in machinery spaces and cargo systems. Features such as unattended machinery spaces, fixed-tank washing systems, modern deck machinery, and general-purpose manning – where ratings are qualified and trained to work in both the engine room and deck departments – allowed greater flexibility in ship manning and operation (Chapter 5). Seagoing staff levels had reached more than 6,000 with a further 500 in offices – the latter in a new location in Harlow, Essex, and the new BP HQ in Britannic Tower in London.

By the early-1970s, crews were reduced to a level of about half of that previously. While developments in navigation and collision-avoidance radar also brought about important improvements for voyages, they also meant the demise of certain duties and, therefore, positions. The gradual introduction of satellite navigation technology eventually phased out the need for a radio operator or his equipment. While the working conditions on ships saw dramatic improvements as a result of new technology, there were still changes to be made to the way the company was run. A sign of its willingness to learn from others came when Ronald Ilian, recently returned from the US as a ship manager, led a set of visits to other owners from whom BPTC chartered ships.

"There was rigid demarcation within the operational division that ran the fleet and there was no effective communication between management and the marine and engineering functions supporting it," Ilian recalled. This had led to the absence of common objectives and inefficiencies in the system. While a significant number of new ships was entering service, their full potential was not being realised because of inadequate management cooperation and ineffective control. Ilian highlighted delays in port 'turn-round' times owing to machinery breakdowns or lack of spares, and found that vessel 'downtime', through machinery or equipment failures, was significantly higher than that experienced by independent owners. Other issues included overruns in drydocking and budgets, "as contractors piled on extra costs".

A radical re-organisation of fleet management in 1971, established fleets A, B, C, and D and made each responsible for particular types of vessels. All those engaged in commercial, operational and technical matters were located in one office to enable much more direct communications between the onshore teams. An operational control unit (OCU) was established to receive weekly performance data on the average speed, fuel consumption, cargo pumping rates, and inert gas quality of every vessel in the Fleet. These were compared against norms set for each ship. An overhaul and full computerisation of the ships' stores and spares division was also completed. These changes made a huge impact on the day-to-day running of the company.

The innovations resulted in faster turn-rounds, less downtime and optimum performance. The management of costly drydocking events was drastically improved through newly-established control and supervision procedures. Superintendents in the four fleet system were each allocated a specific number of ships, for which they remained responsible over a period of time, thus becoming highly familiar with each. They visited their ships three months prior to the scheduled dry-docking, sometimes sailing with them, to scrutinise both the overall condition of the vessel and its machinery, as well as the 'repair list' items submitted by the senior officers.

While communications between office and ships had improved in the 1960s, a more integrated fleet required a new approach. It was estimated that before 1969, on average, each officer only visited head office once every three to four years. Staff conferences were introduced whereby officers, and later ratings, came together with head office staff for residential meetings onshore to share information and to undertake training.

North Sea and Alaska

In 1970, BP's exploration division was under an obligation to drill a well for Hamilton Oil on a North Sea geological structure that carried the improbable name of McNutt's Half Dome. Harry Warman, BP's assistant exploration manager, was not impressed by the seismic survey results that had revealed the structure. So, instead, he sent the drilling rig to a location on the company's own concession. At 8.30pm on 19th October 1970, BP announced the discovery of what was to be the first giant oilfield in the UK North Sea – the Forties field. It was a discovery that led to the establishment of a major new industry in Britain: North Sea oil.

The successful drilling rig was called *Sea Quest* and she had been built at the shipyard of Harland and Wolff in Belfast, Northern Ireland, under the supervision of BPTC. Her operational arrangements established the position of BPTC in discharging responsibility for standards of seamanship and safety procedures administered at site. Marine superintendents seconded to BP Petroleum Development and based at its offices in Great Yarmouth and later at Aberdeen and Sullom Voe, in Shetland provided the supervision on board the rigs. Captain Peter Mason, who had become BPTC's first 'dedicated' safety officer, was responsible for preparing the North Sea operating code. BPTC staff also played key roles in providing marine advice, overseeing the design and construction of support and specialised vessels, and supplying trained sea staff.

In 1975, BPTC provided the Forties field with a safety and general service vessel – a conversion of *British Kiwi*, which was renamed *Forties Kiwi*. To meet a longer-term requirement, BPTC staff were brought in to develop a large semisubmersible vessel for fire-fighting duties.

BP's skill and good fortune with the drillbit at this time was not confined to the North Sea. In Alaska, it had secured some of the most attractive drilling acreage at Prudhoe Bay such that, when oil was first discovered by Arco in 1969, BP was able to tap into vast new quantities of oil, concentrated around the edge of the structure. The Prudhoe Bay field ultimately proved to be the largest ever find on the North American continent. BPTC and Sohio staff became closely involved in the assessment of options for exporting the oil from one of the most operationally difficult and environmentally sensitive locations on Earth. Naval architect Paul Heywood, design engineer Richard Low and chief marine superintendent Captain Ralph Maybourn

The *British Kiwi* tanker was converted in 1976 to a production platform, emergency patrol and fire control ship for the Forties field, in the UK North Sea. She was the first in the world of her type and a new notation was devised by the classification societies.

Holes are cut in *Kiwi's* deck to accommodate retractable propellors for close docking purposes.


BRITISH KIWI
LONDON
6

In 1969, *Manhattan* became the first merchant ship to cross the ice-laden Northwest Passage, in Canada. Part-funded by BP, the reinforced vessel carried a symbolic barrel of oil over the 4,400-mile journey.

joined an Exxon-led project testing the potential of a suitably adapted ice-breaking tanker – *Manhattan* – to take the oil through the Arctic conditions of the Northwest Passage. The Trans-Alaskan Pipeline System route south to the port of Valdez was eventually selected and Captain W. Fisken was seconded to provide expert marine advice to plans for the receiving terminal at Valdez, and the siting of the southern terminal at Long Beach, California.

In order to gain a foothold in US downstream markets, BP swapped most of its Alaskan oil holdings for a 25% stake rising to 54% in Sohio – one of the Standard Oil spin-off companies. BP would operate the oilfield, while Sohio would manage the two companies' combined business in the US. Sohio had relatively little marine experience or staff, so it fell to BPTC to provide commercial and technical marine services and to work with Sohio in recruiting and training its own US shipping unit. BPTC staff was seconded to the US, while other recruits joined from US shipping companies and from across BP and Sohio US operations.

The US Jones Act requires that all goods transported by water between US ports be carried in US flag ships, constructed in the United States, owned by US citizens, and crewed by US citizens and US permanent residents. It is a protectionist measure, put in place in the 1920s, aimed at supporting the US maritime industry. Although restricted by the Act, BPTC enjoyed very good relations with its American counterparts – partly due to fleet cooperation during the Second World War and again during the 1951 nationalisation in Iran, when the British Tanker Company obtained supplies from US sources for its European refineries.

Once the Alaskan oil began to flow in 1977, BP's share of Sohio reached 54%, which effectively, meant that the Alaskan crude could not be shipped by Sohio as it was now foreign-controlled. Sohio had commissioned four vessels, the first of which was the 165,000 dwt *Atigun Pass*, launched at the Avondale yard in Louisiana, US, in June 1977. She had special environmental protection and safety features, which included segregated ballast tanks, an inert gas system, fixed tank-cleaning equipment, collision-avoidance radar, and Loran and Omega navigation systems. To comply with the Jones Act, each ship was operated for a management fee by US companies and chartered back to Sohio. The new Sohio shipping team took on the chartering of other US-registered ships to meet the growing needs of the US business.

A new oil terminal at the Panama Canal – Petroterminal de Panama – was constructed and BPTC staff provided marine advice to the development. While it was being constructed, two BPTC ships, *British Resolution* and her sister ship, *British Renown*, arrived and took up position in Panama Bay. From here, they would act as a storage facility receiving the large volumes from the Alaskan fleet and lightering them into canal-size vessels to make passage into the Gulf of Mexico until the terminal opened. A pipeline was subsequently developed to improve the efficiency of moving Alaskan oil through the Panama Canal.

Located adjacent to the major consumer markets of Europe and North America, the North Sea and Alaska discoveries changed the balance of BP's shipping requirements. They also provided an important opportunity for BPTC to demonstrate its marine expertise credentials as BP began increasingly to embrace the challenges of offshore exploration and production. They were credentials that became an important part of the debate about the role and future of BP's shipping arm as the world of oil turned on its axis once again in the 1970s.

Alaskan oil is transported by 800-mile-long pipeline from Prudhoe Bay to Valdez Port for tanker loading. *British Resolution* and *British Renown* initially lightered crude from large tankers into smaller vessels for passage through the Panama Canal.

Into the OPEC storm

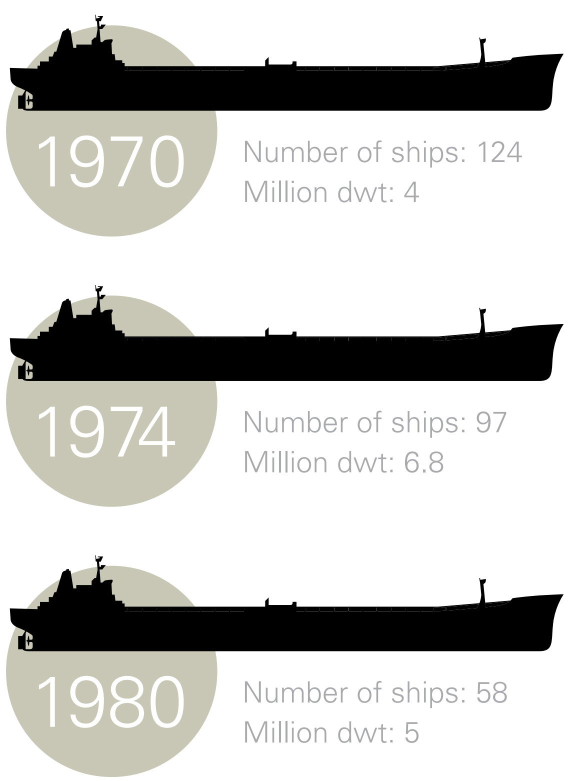
BP's discoveries in Alaska and the North Sea contributed to a spirit of considerable optimism, as expectations of continuing industrial expansion in the West suggested a commensurate growth in the demand for oil, which would be met from current sources and proven reserves. The Middle East crisis of 1967 reinforced the view that the OPEC countries, while they might drive harder bargains, would, in the long term, rate the economic necessity to sell their oil above political considerations.

That optimism was shared by BPTC leadership, as George King was to note: "We entered the 1970s with high hopes, the best of intentions and a shipbuilding programme, which, within a year or two, would give the BP Tanker Company the largest and most efficient fleet it ever had."

The dominance of the VLCC made the re-opening of the Suez Canal something to be avoided rather than sought because, especially if combined with pipelines from the Red Sea to the Mediterranean, it would create an immediate tanker capacity surplus.

BP's initial projection for the new decade was a need for an increase in BPTC fleet from 117 ships to between 126 and 145, according to the age at which older ships were disposed of. Some of this was driven by an understandable nervousness inside

BPTC owned/managed fleet 1970-1980



Ship ordering led to the fleet initially growing in scale just as the world shipping industry entered a period of surplus capacity.

the business that the proportion of the fleet that was owned compared to chartered had drifted down to just 25%. The impending loss of state investment grants was also a factor weighing on minds.

However, the projection for owned ships was actually revised downwards in 1971, as a more conservative view of the future market took hold. It was decided that a risk of excess demand would be covered by period charters rather than new builds. The result was to reduce the projected owned fleet to 85 ships by 1975 and to keep it between 85 and 90 for the rest of the decade. This would mean limiting new orders to two VLCCs each year until 1975.

An additional nine VLCCs of the R class were ordered from Mitsubishi for delivery out to 1976. An additional VLCC – *British Respect* – was ordered from Kawasaki at 277,000 dwt. She was the largest ship in the fleet and soon after launch she had the honour of representing BP at the Queen Elizabeth II Silver Jubilee Fleet Review in Southampton Water, England, in 1977. Resplendent in her fresh coat of paint, she took up position for a 'day before' rehearsal of the royal sail-past alongside the very best of Britain's fleet at anchor. Much to the annoyance of Commodore Alan Davies and BPTC management, a signal was received on *British Respect* that evening from Admiral Sir Henry Leach: "Hope *British Respect* will show more respect to Her Majesty

Fotoflite

British Respect – 277,000 dwt – accused of failing to show proper respect in rehearsals for the Queen's Silver Jubilee Fleet Review, 1977. She was later bombed and set ablaze by Iraqi aircraft in 1987 but later returned to service.

"We entered the 1970s with high hopes, the best of intentions and a shipbuilding programme, which, within a year or two, would give the BP Tanker Company the largest and most efficient fleet it ever had."

GEORGE KING

BPTC volumes shipped 1968-1978

1968 Million tons: 98

1973 Million tons: 139

1978 Million tons: 86

BP production and sales fell sharply as it lost oil resources to nationalisation and world demand fell as prices soared. BPTC would increasingly carry other producers' oil to BP refineries.

tomorrow." Leach was unhappy at the absence of crew manning the side at rehearsal. Rather indignant, BPTC management mulled over a return signal: "Length 1,200 feet, crew 40. Can man side at 30-feet intervals but Her Majesty would not see" – but diplomatically decided to let the matter rest.

The requirement for product carriers was driven by an increasing need for ships with good cargo separation and pumping performance. Between 1972 and 1974, BPTC took delivery of 16 River class products carriers that met the higher standards and were ideal for global trading, with a capacity of 25,000 dwt and a draught of 31 feet.

'Bareboat' financing was adopted for the first time in order to conform with US regulations now that BP was so heavily involved in Alaska. Unlike the earlier 'mortgage'-style arrangements for ship financing, 'bareboating' allowed a third-party owner to take up the taxation advantages of free depreciation and reflect part of this benefit in the bareboat hire rate payable by BPTC. This brought a range of merchant banks and finance houses into the ownership of vessels subsequently hired and operated by BP.

With hindsight, this was a relatively cautious approach when others in the industry were ordering heavily and were including the new ultra large crude carriers (ULCCs) of 300-500,000 dwt in their programmes. BPTC considered ordering two 400,000 dwt ULCCs, not least because each could demonstrate an economy over two VLCCs, but it did not pursue the option. A shift from a buyer's to a seller's market for large ships raised uncertainties over costs and there were ongoing doubts about the adequacy of discharge facilities for ULCCs. While port facilities capable of handling such large ships were being developed, notably at Galveston in Texas, US, the key to the company's crude oil reception in Europe was the further development of Rotterdam in the Netherlands to accept tankers with draughts greater than 72 feet. However, a new Dutch government had raised political and environmental objections. Despite this, out of 264 large crude carriers ordered by the industry between May 1971 and May 1973, almost one third – 85 – were of 72 feet or more draught and between 300-400,000 dwt.

The world appeared to have an abundance of new oil supply, ever-larger ships to carry it, and markets increasingly hungry for oil. This was to change dramatically.

By the early 1970s, the Organisation of Petroleum Exporting Countries (OPEC) was joined by six more governments: Libya, United Arab Emirates, Qatar, Indonesia, Algeria and Nigeria. It sought the right of all countries to exercise sovereignty over their natural resources

CENTENARY INSIGHT

Oil was no longer cheap and its consumption fell faster than the general decline in economic activity around the world. For some in the BP Tanker Company, "the death knell of 20th-century British shipping had sounded had we but heard the tocsin".

and began to flex its considerable power through nationalisation and by operating as a pricing cartel.

A coup in Libya led to the nationalisation of BP's assets in 1972. The same year, Iraq nationalised the Iraq Petroleum Company in which BP held an important stake. Saudi Arabia, Abu Dhabi and Qatar then forced the independent oil companies to agree to their governments taking a half share in the existing oil concessions. In 1973, Iran obliged the oil companies to relinquish their share in the concession in return for a right to buy its output. Full or partial nationalisations followed in Nigeria, Kuwait, Abu Dhabi and Qatar. In October that same year, Egypt launched a surprise attack on Israel's forces in the Sinai and so began the Arab-Israeli War.

Six Gulf state country producers unilaterally increased the 'posted' price of their crude oil from \$3 to \$5 a barrel and cut production. Within two months, the posted price leaped to nearly \$12. Across the world, governments panicked as consumers queued at the pumps and industry ground to a halt for a lack of fuel. In Britain, power shortages led to the introduction of the 'three-day week' which temporarily closed UK factories for two days in every week.

The impact on the world economy was immense. US gross national product fell by 6% in just two years. Japan's continuous economic growth since the war came to a shuddering halt. Europe was plunged into recession. For BP and BPTC it was a transforming moment. The company's entire integrated business was built on access to the huge reserves of low-cost crude oil that it had discovered in the Middle East. In 1971, BP lifted more than four million barrels of crude each day, with 80% from Middle East sources. Purchases of crude made up only 10% of its total liftings. By 1976, the position was reversed. Production of equity crude was now fewer than half a million barrels a day, or about 10% of its total liftings. Meanwhile, purchases had risen dramatically to three million bbd or 80% of its total supplies.

Oil was no longer cheap and its consumption fell faster than the general decline in economic activity around the world. This left the oil companies burdened with surplus refining and shipping capacity, which had been built up before 1973 on the false assumption that rapid growth in oil would continue. For some in BPTC, "the death knell of 20th-century British shipping had sounded had we but heard the tocsin." The initial impact was managed as before with rerouteings and slow speeding. By the end of 1973, 30% of Arab production had been cut and ship Masters were required to sign a declaration of cargo destination to enforce an Arab embargo on selected countries. Slow speeding at 12 knots and ultra-slow at seven to eight knots continued through 1974, equating to a loss of four VLCC round voyages between the Gulf and Europe compared to tankers completing their journeys at normal speed.

In 1974, BPTC submitted a corporate plan to the BP board for the following five years. With rapidly deteriorating market conditions, Shipping's MD, David Gresham envisaged half the number of owned ships and one-third less tonnage by 1980. George King believed that the fleet's middle-range ships "would never again freight economically" as they were too big for the products trade and too small for long-haul crude carrying. Moreover, "they were driven by steam turbines – the preferred choice when there was a glut of heavy fuel oil and bunker costs were marginal." Sixteen medium crude carriers would have to go, including the two 100,000 tonners, *British Admiral* and *British Argosy*, not yet 10 years old. Fourteen obsolescent Bird class product carriers were also listed for disposal.

In the middle of the crisis, George King was appointed MD. Bob Horton, a rising young BP executive who was to later become BP chairman and chief executive, joined the team as King's deputy and was charged with preparing a new corporate plan. Horton was to reject as unfair the sobriquet he acquired later in his career as "Horton the Hatchet", but he was clear-minded in the task that faced the shipping industry in the mid-'70s. "The prospects for tanker owners over the next few years are grave unless some method of reducing the effective size of the world fleet by at least a quarter can be devised," was his blunt assessment.

Getty

Oil ministers representing OPEC country members announce in 1974 the lifting of the five-month-old oil embargo, which had created political and economic turmoil.

At first, expiring time charters were not renewed by BPTC and two VLCCs were chartered out to Texaco. In mid-1975, two VLCC orders with Mitsubishi were taken over by another party and the builds proceeded as dry cargo ships. Layups of product carriers began in early-1975 and a site at Labuan, in East Malaysia was identified for preserving vessels. A subsidiary of BPTC called Shipcare was established to oversee the activity. By July, a decision was taken to move some 'just-built' VLCCs directly from sea trials and lay them up, mothballed at Labuan. The brand-new 265,000 dwt *British Resource* was the first to go that year and two more of her type followed in 1976. It was six years before *British Resource* ended her lay-up by returning to her builder for conversion to a motor tanker. Seven years after her launch, she finally got to load her first commercial cargo of crude in 1982. It was an ignominious start to her sea career.

Having initially resisted efforts by Middle East states to impose their own national flag fleets on the oil companies at inflated charter rates, BPTC decided to take a more constructive approach based on the principle of 'can't beat 'em, join 'em' devised and negotiated by Ronald Ilian, who led BPTC's commercial team. In March 1976, an agreement was signed for 10 ships – five VLCCs and five products carriers – to be transferred from BPTC's fleet, five by sale, which were reflagged, and five by demise charter retaining the UK flag, to the National Iranian Tanker Company. They would form a pool with an equivalent number of British-flagged ships available for the use of both parties. Operational control began from London and then transferred to Tehran and BPTC trained Iranian management, navigating, engineering, and cadet staff.

The impact of all these changes on BPTC seagoing staff numbers was obvious and every department was affected by the re-organisation and job losses that ensued. Most worryingly for the future, cadet entry was reduced by one-third. At the Corporate Centre, an organisational planning committee had been created with the objective of establishing a 'Federal BP', in which operating companies, both at home and abroad, would acquire increasing autonomy with reduced dependence on the 'Centre'. This, combined with the shortfall of volume across BP, would lead to manpower cuts.

Between 1973 and 1978, freight rates on a typical VLCC voyage from the Gulf to northwest Europe collapsed from \$45 per ton to just \$3.60. The rate of ship disposals climbed steadily and by 1980, some 87 ships of BPTC's fleet and over 3.7 million dwt of capacity had gone. With existing orders still arriving, BPTC's owned and managed fleet actually peaked at nearly seven million dwt in 1974, only to fall back to five million dwt and 58 tankers by the end of the decade. With the massive reduction in ship numbers, the four-fleet structure was consolidated into just two. By 1979, the long term assumption was that worldwide tonnage would slip back into a deficit in the 1980s.

Once again, events in Iran were further proof if any were needed for the veracity of economist J.K. Galbraith's remark that "the only function of economic forecasting is to make astrology look respectable." An Islamic revolution in Iran in 1979 drove out the Shah. Oil production collapsed from 4.5 million tons to less than one million, which led to another sharp rise in world oil and freight prices. Despite increased output by other countries, a two million tons per day shortfall sent the world into a spiral of panic buying and stock-piling. In July, Nigeria's military government nationalised BP's assets and in the space of four months, the company had lost access to most of its Middle

"The prospects for tanker owners over the next few years are grave unless some method of reducing the effective size of the world fleet by at least a quarter can be devised."

ROBERT HORTON

Eastern production that supported the core of its worldwide refining and marketing. Declaring 'force majeure' on its major long-term supply contracts, BP was still forced to find the shortfall of two million barrels per day of oil in the open market to maintain supplies to its European refineries. BP's chairman Sir David Steel, remarked: "The people who used to sell our oil have suddenly had to become pretty expert at buying it!" It was an important moment in the development of the company's trading and supply capability on which it would increasingly rely.

New supplies from Alaska and the North Sea, combined with the stockpiles of oil held in the long supply lines that connected the Iranian and Nigerian upstream with the customer, managed to insulate BP from serious damage. But the die was now firmly cast. British Petroleum and BPTC would have to change radically to adapt to a very different period of the Oil Age.

British Argosy – 113,000 dwt – deemed "too big for the products trade and too small for long-haul crude carrying", fell victim to the need to reduce the fleet and was just 10 years old when sent for demolition in 1976.

TIMELINE
1946-1979

1948

Launch of BTC's first 'supertanker' *British Adventure*

1950-1954

Abandonment of the '90% owned' rule for meeting shipping needs

BTC owned fleet more than doubles in size to 159 ships

Major expansion of BP refining assets

First Iranian crisis – BTC is renamed BP Tanker Co

1955-1960

Major expansion in BP production and sales

Suez Crisis diverts tankers around the Cape

BPTC places first ship order with a non-UK yard

© IWM

1960-1970

Trials of Inert Gas System on BP vessels

British Crown explosion; *Torrey Canyon* spill; Suez Canal is closed for eight years

Launch of BPTC's first very large crude carrier – 215,000 dwt *British Explorer*

Oil is discovered in Alaska and *Sea Quest* discovers the Forties field, North Sea in the UK

1971-1980

OPEC quadruples world oil price

World oil demand falls sharply

Nationalisations decimate BP's Middle East equity oil production

World surplus of shipping capacity

BPTC disposes of 87 ships and 3.7 million dwt of capacity

Summary

British/BP Tanker Company

1946-1979

Thirty-five years had passed since WW2 had ended. World demand for oil had grown substantially and BP and BPTC initially enjoyed considerable success. Between 1955 and 1970, BP grew its volumes of crude production, refining throughputs and sales by an annual average rate of 10%. In doing so, it extended its geographical reach from six to 10 countries where it held oil-producing interests, and from 12 to 27 where it had refining interests. For BPTC, this required assembling a fleet that grew from less than one million dead weight tons (dwt) in 1945 to peak at nearly seven million dwt in 1975. While fleet numbers had peaked at over 150 vessels in 1954 they had fallen back by 1980 to their immediate post-war level of little more than 60. As ship sizes increased dramatically in the age of the VLCC, vessel numbers were reduced in response to a huge over capacity.

As the 1970s ended, the outlook was grim. BP's discoveries in Alaska and the North Sea opened up new oil and gas domains to begin to replace that which was lost in the Middle East and elsewhere. However, BP's substantial investments in refineries and shipping were left financially stranded by the forces of OPEC and a global recession, as well as BP's relatively weak market position. BPTC had shown its great adaptability and resilience throughout a period when 'political' events – from Iran to Suez to the Arab-Israeli War – conspired to tear up the best laid plans for moving a large fleet around the globe. 'Awaiting orders' was to be a familiar refrain in these difficult periods, when long voyages around the Cape became all too common.

The move to scale had dramatically lowered the cost of transporting oil, but it also raised the risks and impacts of moving oil by sea. When things went wrong, they could go very wrong as events on *Torrey Canyon*, and *British Crown* had demonstrated. Growing awareness of and concern for the environment, combined with the new media of television, shone an unforgiving spotlight on such events. In this glare, a debate about liability and responsibility became subordinate to demands by government and the public for "something to be done" to fix it and to prevent it happening again.

BPTC rose to this challenge by devoting its considerable skills and knowledge in naval architecture and marine engineering – ably supported by BP's scientific branch at Sunbury, UK – to develop new technologies and operating procedures that set new standards in the prevention of explosions on board and the escape of oil into the sea. Most importantly, its management and staff worked diligently with other fleets and with industry bodies in a shared commitment to improving safety and environmental performance at sea.

3 BP SHIPPING
RETRENCHMENT AND RENAISSANCE: 1980-2015


SEILLEAN

Page 101: *Seillean* – the world's first dynamically positioned offshore oil production vessel, built at Harland & Wolff, Belfast, Northern Ireland, in 1989.

Below: *BP Warrior* – 2,000 dwt – coastal oil product tanker. Originally named *Grangemouth*, *BP Warrior* was one of more than 100 coastal vessels and barges owned and operated by the Shell Mex-BP joint venture, which was set up in 1932 to jointly market fuels in the UK. The JV ended in 1976 and the fleet of small vessels was split between Shell and BP. *Grangemouth* became the *BP Warrior* and later became part of the BP Shipping fleet as the *Border Warrior*.

'No sacred cows'

Peter Walters was appointed BP chairman in 1981 at the relatively young age of 49. He held a specific brief from the board to tackle the crisis that now enveloped the company. BP was making good profits from the North Sea and Alaska, but all its other businesses were in significant trouble. Refining and marketing activity was losing £1 million every day and petrochemicals a further £0.5 million. The board concluded that the fall in demand for oil products was not a blip and that refining, marketing, shipping and chemicals faced a bleak future.

The company's diversification into new areas, such as coal, other minerals, nutrition, and the expansion of chemicals, had begun the change away from the integrated oil business initiated 70 years earlier by Charles Greenway, into a multi-industry group. This had put pressure on BP's increasingly complex management structure and the new businesses were a long way from replacing in financial terms what had been lost to nationalisation. Walters made two assumptions: that the surplus capacity in the oil industry meant BP would be better placed to buy-in supplies or services cheaply; and that there was considerable value to be had from first mover advantage. As Walters began to abandon the whole concept of an integrated model and to sail BP into the wind of market forces, he declared to BP-wide management and staff that, "there would be no sacred cows."

The BP Tanker Company had been here five years earlier, when the corporate plan had invited the management team led by its MD, George King, to think the unthinkable and address the question: "Why have an owned fleet at all." The broad conclusion reached then was that BP should retain its own fleet, albeit a smaller one. But the question didn't go away. In July 1980, internal changes had been made, primarily to take account of the new businesses emerging offshore, and in gas and coal. This rationalised the technical branches of shipping in naval architecture and operations engineering, and introduced a sharper focus on the business efficiency of shipping.

However, this was only a prelude to a more fundamental reform that took place when BPTC was renamed BP Shipping Ltd (BPS) to reflect its wider shipping and maritime involvement. An internal reorganisation formed part of a wider restructuring exercise, which saw the acceleration of the sales of medium-size ships and VLCCs, and more than 400 redundancies. Sixteen tankers were offered for sale, including *British Patience*, which eventually ended up sold for scrap just eight years after her launch. Nine Tree class product tankers were sold. The external environment continued to deteriorate such that by 1982, there were 577 VLCCs in the world, with 326 of them surplus to requirement. Market conditions could not have been worse, as bunker consumption fell and freight and port charges rose. BP Shipping's financial performance was in significant deficit. While events in the Falklands dominated the headlines that year (Chapter 4), they could not mask the deep problems being faced by BPS as 1,200 more people on the seagoing side were made redundant, along with 40 head office staff.

In 1983, the MD of BPS, Ronald Ilian, outlined the difficult position in which the company found itself. The oversupply of tonnage, particularly in VLCCs, and a surplus of oil, had led to fiercely competitive market pricing for both. BP Oil – the company's refining and marketing arm – took advantage of this by buying non-Arabian oil on a developing 'spot' market for oil rather than via longer-term contract, thereby reducing its demand for long-haul vessels. To make matters worse, BP's new gas and coal businesses were beginning to charter out much of their shipping needs to third parties. Ilian put it bluntly. "Whereas in 1975 BPS had shipped 140 million tons of Middle Eastern crude, by 1983, it was a mere 11 million. Owned and managed capacity halved from a peak of almost seven million dwt to just 3.4 million dwt.

The severe cutbacks had reduced the BPS fleet to just 34 ships from the 88 under ownership in 1975. Staff was reduced by more than one-third in the same period. It was a sombre fact that the number of ships remaining was barely more than the British Tanker Company fleet immediately after the First World War. Somewhat against the tide, four new ships did join the fleet at this time – a necessary response to growing environmental concerns and regulation. *British Skill*, *British Success*, *British Spirit* and *BP Achiever* were 127,000 dwt tankers constructed to a new design called the 'segregated ballast tank'.

One of the last ships to be delivered, *BP Achiever* in March 1983, was so named because she was bareboat chartered to Australia, where the BP prefix was preferred. It broke a tradition since 1915 of naming new-build company ships with a 'British' prefix. She was also the last ship order placed by

BP Achiever – 127,000 dwt – launched in 1983 and broke a company tradition since 1915 of naming all new-build ships with a 'British' prefix. She was also the last BPS ship to be launched from the Swan Hunter yard in Newcastle, England – where so many of the company's vessels had been built. She was renamed *British Strength* in 1998.

Fotoflite

CENTENARY INSIGHT

By 1982, there were 577 VLCCs in the world, with 326 of them surplus to requirement. Market conditions could not have been worse, as bunker consumption fell and freight and port charges rose. BP Shipping's financial performance was in significant deficit.


BP
BP ACHIEVER
SYDNEY

British Patience VLCC was only eight years old when disposed of in 1982. Her sister ships *British Progress* and *British Purpose,* served only 12 years each.

BP's shipping arm with the great British shipbuilder Swan Hunter, whose relationship with the company could be traced back to the building of *British Empress* in 1917. *BP Achiever* returned to the British flagged fleet as *British Strength* some 15 years later.

Peter Walters set BPS a challenge to run the business as a profit centre, albeit recognising that it was still a service centre to the group. This proved easier said than done. Despite the cuts that had been going on for several years, the target to return to a break-even business by 1985 looked increasingly remote due to ever-deteriorating market conditions. In 1984, three objectives were set to establish the new business model going forward: restructuring of the fleet through sales and purchase and in so doing, reducing the VLCC presence while increasing medium carriers; developing the business offshore; and continuing to reduce costs.

The strategy held out hope that BPS could adapt to new demands, notably those of offshore production in oil and gas, where innovations such as floating production systems were leading to the development of different kinds of vessels. There was also growth in the LNG markets, with potential too for coal, even minerals shipping. For the restructuring of the business to take advantage of a new moment in the cycle, older vessels (mostly either VLCC class or small-ship classes) were sold off, and newer, predominantly medium-carrier class ships were purchased second-hand. After the stripping-out of the fleet and further redundancies, a third element to the drive to cut costs was announced in 1986. It would cause widespread dismay and no little rancour within BP Shipping, which would reverberate out across the industry.

BP's shipping arm had established a very good reputation over the decades for the quality of and investment made in its officers, ratings and shore staff. Its cadet training schemes were of the highest order within the industry. However, the decision to move to agency manning of its seafarers ended the direct employment of nearly 1,700 officers and ratings. All were made redundant from BPS and instead offered re-employment through a system of manning agencies. A further reduction in head office staff of 25% was also made.

Shipping's MD, Ian Hartigan, called it "a drive to improve the profitability of BP Shipping in the worst recession the industry has known," as he announced the handing over of crewing of the company's 30 tankers and North Sea-managed vessels to independent manning agencies. The tankers were to be transferred to the Bermudian registry, but retain the British flag. The aim of this momentous decision was obvious – to establish an operating cost base for BPS that could be enduring and to increase the flexibility of manning and staffing arrangements. Unsurprisingly, its communication to a disbursed community of seafarers did not go well, especially as the news broke in the media beforehand and it was an offer that far fewer than expected took up.

Initially, a UK-based pool of non-BP officers and ratings was tapped, but before long the company was obliged to look outside its traditional source of largely British recruits to address a growing shortfall. International manning began to grow and officers from Poland and crews from the Philippines were among the nationalities to be recruited to BPS vessels. From the perspective of the sea-staff, who had career-long loyalty to BPS, there was a very tangible sense that it had let them down. The loss of long-established benefits – especially the non-contributory pension – was a particular source of dismay. Some seized the chance to retire or start a new career ashore. For others, it was a very difficult period of adjustment in an industry suffering from a deep recession.

Fleet manager Captain Alan Preston noted at the time: "The seafarers have polarised into camps: those who think this was the saddest day of their lives and those who think it was the best thing that could have happened. It all depends on the circumstances of the individual. But there are very few in the middle."

Close competitors as well as the wider industry, were not immune to the turmoil that BP Shipping faced. Between 1980 and 1986, the world's shipyards delivered 139 million dwt of new ships. In contrast, world trade decreased by 313 million tons. UK tax concessions to seafarers were withdrawn in 1984, along with the ability of owners to write off the costs of ships quickly. By the end of 1986, more than one-quarter of Britain's tonnage was registered in the Isle of Man.

British registered tonnage fell from 33 million dwt in 1975 to 8.3 million dwt in 1987. The number of British merchant seamen had fallen from a post-war high of 200,000 to fewer than 50,000. In 1975, 2,315 cadets joined the British Merchant Navy. Only 274 entered in 1984 and in 1987, just 97 places were offered. The world's 10 largest fleets now sailed under the flags of Liberia, Panama, Japan, Greece, the US, USSR, Cyprus, China, Hong Kong, and the Philippines.

Since Queen Victoria's coronation, when the British merchant fleet represented 50% of world tonnage, Britain's share had fallen to just 2% over the intervening 100 years.

"The seafarers have polarised into camps: those who think this was the saddest day of their lives and those who think it was the best thing that could have happened. It all depends on the circumstances of the individual. But there are very few in the middle."

CAPTAIN ALAN PRESTON


IOLAIR

Fotoflite

Iolair – a self propelled semisubmersible firefighting and diving support vessel built for the North Sea in 1982 – provided clear evidence of the ability of BP Shipping to turn its hand to new marine challenges.

Eagles, bees and bread

Diversifying the business activities of BPS from its core activity of shipping was to prove no mean feat. In broad terms, it took two distinct approaches: firstly, developing a material marine services activity offshore with BP's upstream as a core client. Secondly, taking core skills and innovation in marine engineering, maintenance and ship management and applying them to third-party business opportunities.

The development of a profitable and material offshore business was an obvious step. In previous years, the company had provided marine services to the upstream and downstream and its expertise was wide ranging, from marine aspects of oil terminal development to even towing large icebergs to prevent them wreaking havoc among drilling operations off Newfoundland. It had shown it could turn its hand to advising on the emerging business of liquefied natural gas in Abu Dhabi in the 1970s when it was appointed as technical advisor with a watching brief over the design and construction of three 125,000m^3 LNG carriers for the Abu Dhabi Marine Areas consortium, in which BP was a partner. The launch in 1982 of *Iolair* – Gaelic for 'eagle' – demonstrated that BPS could apply its skills well beyond the oil tanker and gas carrier to devise an innovative semisubmersible emergency support vessel (ESV) for the offshore industry. Initially deployed to the Forties field, *Iolair* was "a combination of a standby vessel, a diving support vessel, an accommodation vessel, and a hospital, with a bit of warehouse thrown in as well."

In 1986, BPS's offshore group, located in Aberdeen, converted a former Norwegian pipe carrier vessel into a field service vessel. *Balblair* could provide drilling mud supply and handling services, as well as support to 'fracking' activities – marking the first time a supply vessel could carry out drilling-related functions.

Shipping also made good progress working with BP Exploration and BP's Engineering and Technology Centre on projects such as floating production systems (FPS) and extended well test (EWT) vessels, which could offer longer periods of well testing before having to make a major capital investment in a new oilfield. This thinking soon developed to consider an EWT vessel for long-term production of a smaller, less economic reservoir, which was named the dynamically positioned production tanker (DPT).

Iolair was "a combination of a standby vessel, a diving support vessel, an accommodation vessel, and a hospital, with a bit of warehouse thrown in as well."

The attempt to grow in this aspect of the offshore industry proved difficult initially. Progress was impeded as crude prices fell by 50% in 1986, before recovering a little, but the trend was deeply uncertain. Design and testing of the EWT vessel began but did not advance and the same was true of a floating production vessel that was under design. While BPS's marine expertise was not in doubt, it was new to the world of partnering and contracting, and some calculated that it would take up to 10 years to develop the expertise of its competitors. Nevertheless, important projects such as the revolutionary *Seillean* – 'bee' in Gaelic – were developed successfully. Delivered in 1989 as a joint venture with Harland & Wolff, *Seillean* was a single-well oil production vessel (SWOPS) able to move from one well to another, collecting her oil nectar into the ship's tanks by connecting to wellheads on the seabed. She represented the world's first dynamically positioned offshore production vessel.

The second 'step-out' activity looked at third-party opportunities to apply the skills and innovations that existed within the shipping company at that time. Existing initiatives such as Shipcare provided a lay-up service, not only for BP's vessels, but also included contracts with

Chevron and Exxon amonst many others. The idea was subsequently extended to the lay-up of drilling rigs under the name of Rigcare. The potential of third-party opportunities led to the establishment of a consultancy business unit, Pinnacle Technical Management Services. It was named after the area in Harlow in which BPS's head office was then situated, after its move from London in 1984. Shipcare and, later, Rigcare were absorbed into the unit.

On the engineering front, the company's introduction of formalised planned and predictive maintenance techniques in the fleet was well known in the industry. Some initial 'marketing' by Pinnacle resulted in a major contract with Rank Hovis Flour Mills to establish more efficient maintenance management and stock control systems at a number of their plants. At Rank's Battersea plant, Pinnacle provided a retired BPS chief engineer as maintenance manager to guide the necessary changes in techniques and attitude. At its height, the contract was generating in excess of £1 million per annum. At the same time, and with the support of a US marine software company, BPS developed inhouse, computerised systems for several marine and engineering applications for use in its own business. Once tried and tested, they were offered to the external market through the newly-established Marine Management Centre MMC ('the shop', as it became known), in London's East End.

MMC, as well as successfully marketing its computerised marine distance tables and voyage planning software, also secured contracts with the Royal Fleet Auxiliary to provide a custom-built major refit computerised repair specification and control system and with Cunard to provide a fully computerised planned/predictive maintenance management system for the *Queen Elizabeth II*. Pinnacle also enjoyed success overseas, providing advice to Venezuela's national oil company, PDVSA, on operational safety and environmental issues, as well as engineering management. It proposed and helped to implement a combination of PDVSA's three subsidiary company fleets to achieve important operational efficiencies.

These were small but important steps in what was to prove the most difficult period in BP Shipping's history.

Above: Crew change at sea for *Seillean*.

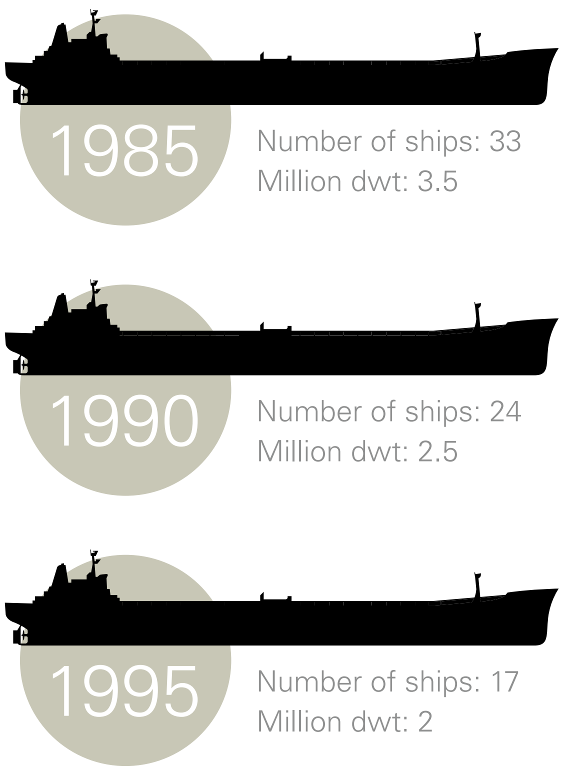
Opposite: *Seillean,* built in 1989, was the world's first dynamically positioned offshore oil production vessel.

Page 112: Iceberg towing off the Labrador coast, Newfoundland, in Canada.

Getty

More than just a fleet of ships

BPS owned/managed fleet 1985-1995



The owned/operated fleet more than halved across the period as BP businesses increasingly chartered vessels from a market in surplus.

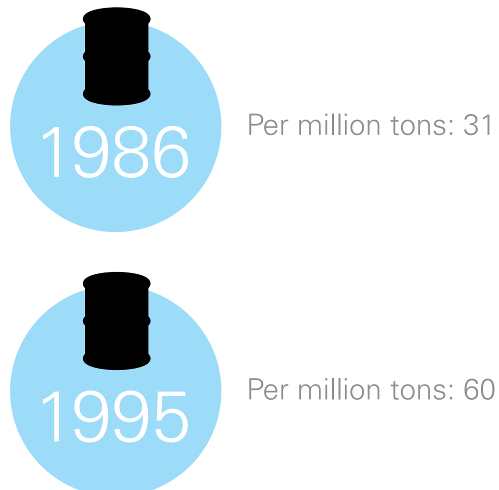
In 1987, the BP main board met to discuss and review a future strategy for BP's shipping arm. Having previously served as the BP board director responsible for the BP Tanker Company, as well as fulfilling the role of president of the General Council of British Shipping, BP's chairman Sir Peter Walters, had close-hand experience of the fundamentals of the business and the immense difficulties it faced. One particular statistic stood out. Eighty per cent of BP's oil was still moved by sea. Decisions on how the company's shipping affairs were to be arranged were fundamental to BP's corporate strategy.

The debate was wide-ranging. On the one side, BP Oil put the case for chartering its own shipping in common with other individual businesses, such as chemicals and coal. For BP Shipping, MD Mike Pattinson and his team argued that the current cost of using ships under BPS charter was roughly £1.2 million while the equivalent rates in the market were between £2.5 million and £3 million, plus the cost of any other marine services that BP Oil would need to buy in. Pattinson could also point to BPS's return to profit, which suggested a more positive outlook for the sector as the recession bottomed out, and an ageing fleet was progressively sold off to bring in a new generation of ships in the 1990s as the market improved.

Weighing the arguments, Walters and his fellow board members judged that BP's shipping arm was 'more than just a fleet of ships', but rather it brought to the company an inherited expertise in a range of disciplines, from ship design to anti-pollution measures. Consequently, they approved a strategy that would allow for the purchase of a small number of medium-sized A class (35-40,000 dwt) products carriers. The option of bareboat chartering was accepted, and a review of the offshore business was sought. While affirming BPS's role inside the company, Walters also made clear that it was not a priority for group capital spending and other sources of finance would need to be found for ships.

It was an important victory, but one marked more by relief than celebration. Just short of its 75th birthday, the esteemed British Tanker Company, now BP Shipping, had stared into the abyss in which so many famous old names from the shipping

BPS volumes shipped 1986-1995



Despite the fall in the BPS owned/managed fleet, volumes shipped in both owned and chartered vessels increased but were still far from the peak of 170 million tons lifted in the 1970s.

LNG carriers were developed for the Australian North West Shelf Project, despite the slump in shipping during the 1980s.

industry had fallen across the years – such as Cunard, Blue Star, Alfred Holt, Elders & Fyffes. It had survived as an entity, albeit one that would now report into BP Oil International.

The new strategy brought a cautious return to building ships after an absence of 10 years and the recruitment of cadets was resumed. Two ships – *British Architect* and *British Advocate* – were obtained immediately by an exchange agreement for two 40,000 dwt tankers built by Mitsubishi at its Onomichi yard in Japan and acquired as Teekay 'bareboats'. In December 1988, the company placed orders with the same yard for three 40,000 dwt tankers – *British Admiral*, *British Argosy* and *British Adventure*. BPS staff were also busy at Japan's Kawasaki yard, overseeing work on an LNG ship on behalf of the Australian North West Shelf gas project, in which BP was a partner, as well as being the project's marine technical consultant.

Mindful of Walters's stricture that BP investment funds would not be available, a plan to float 40% of the business was put to the board. The proposal was rejected on grounds of cost and loss of full control. It was a narrow escape and one that could not hide the fact that the decade of the 1980s had left BPS in a greatly weakened position. There had been a sea change in the BP group's perception of its shipping needs, which, in part, hinged on changes in BP's global position, its upstream activity, refining strategy, and oil trading ambitions set against a massive oversupply of tanker tonnage worldwide, and coupled with a rise in the cheaper shipping options presented by 'flags of convenience'. This latter factor ensured that the profitability of BP Shipping measured against the market was weak at best and in an organisation driven by 'profit centres', it left the shipping arm particularly exposed. Long-standing commercial interfaces were torn up, average freight rates (AFRA) were unilaterally ditched, and BPS was left with a small, ageing fleet, built for specific trades with no long-term contracts and limited internal support for its change in fortune.

All these factors conspired to make it much more difficult to match shipping and supply in the traditional way and led to short-term decision making in an industry where lead times are long and strategic planning critical. The most obvious outcome of all this was the dramatic reduction in 'owned' fleet size, as assets were sold to staunch operating losses. The hidden costs were a loss of expertise, both at sea and ashore and, with it, the loss of commitment that went with the outsourcing of sea staff.

BPS may have represented "more than a fleet of ships", but it was by now a fleet consisting of just 24 mostly elderly tankers. Events elsewhere once again impacted BP's strategic priorities for its shipping arm as she entered the final decade of the century.

CENTENARY INSIGHT

Just short of its 75th birthday, the esteemed British Tanker Company, now BP Shipping, had stared into the abyss which so many famous old names from the shipping industry had fallen over the years – such as Cunard, Blue Star, Alfred Holt, and Elders & Fyffes. It had survived as an entity, albeit one that would now be incorporated into BP Oil International.


NORTHWEST SHEARWATER
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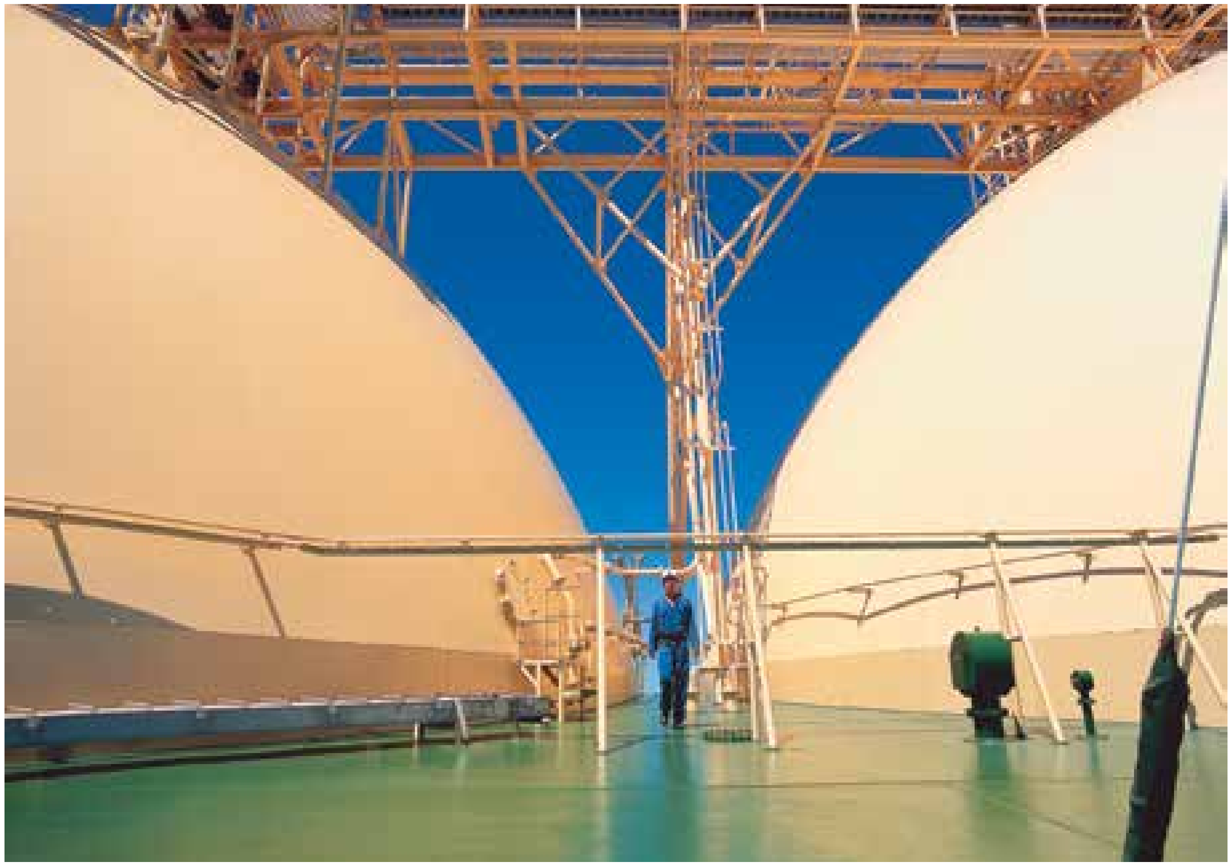

Above: The initial vessels built to carry Australian LNG used the distinctive 'Moss' design of tank, with gas spheres that protrude above the deck.

Opposite: *Northwest Shearwater* – 127,000 cubic metres capacity – LNG carrier launched in 1989, and managed by BPS on behalf of the Australian North West Shelf gas business in which BP is a shareholder.

Exxon Valdez

Since *Torrey Canyon* had foundered off the Scilly Isles in 1967, the industry had continued to experience material spills of oil from tankers, despite industry coordinated efforts to learn lessons and implement changes.

Eleven years after *Torrey Canyon*, *Amoco Cadiz*, a VLCC under the Liberian flag, ran aground on Portsall Rocks some three nautical miles from the coast of Brittany, France. She split in three and sank resulting in a major spill. Later the same year, *Christos Bitas* ran aground some eight nautical miles off the Pembrokeshire coast in another major oil spill. (Chapter 4).

Previous incidents were all overshadowed by what occurred in 1989 in the pristine environment of Prince William Sound on the south coast of Alaska. Tankers carrying North Slope crude oil had safely transited Prince William Sound more than 8,700 times in the 12 years since oil began flowing through the Trans-Alaska Pipeline, with no major disasters and few serious incidents. That was all to change when *Exxon Valdez* left the Alyeska Pipeline terminal at 9:12pm, Alaska standard time, on 23rd March, 1989. The 987-foot ship, second youngest in Exxon Shipping Company's 20-tanker fleet, was loaded with more than 1.25 million barrels of crude oil bound for Long Beach, California. Less than three hours later, she grounded at Bligh Reef, rupturing eight of her 11 cargo tanks and spilling an estimated 250,000 barrels of crude oil into the Sound. No human lives were lost as a direct result of the disaster, but the natural losses were considerable – to fisheries, subsistence livelihoods, tourism, and wildlife.

BP offered its support and a team of experts led by Brent Pyburn from the BP Oil Spill Service Centre (OSSC) became the first responders outside the US to arrive at the incident site in Valdez to provide advice and materiel. For the oil and shipping industry, it was to represent a watershed. The following year, the US Congress passed legislation requiring a phase-out of single-hulled oil tankers in US waters by 2010. The act set up a liability trust fund (OSLTF), toughened spill disaster plans, and created new mechanisms for overseeing shipping safety.

Across the world, other governments and regulatory authorities were stirred into action by the sight of the images appearing nightly on millions of television screens. The incident and its aftermath were to engage the shipping industry in a process that brought a host of changes to the way oil carriage and spill prevention is undertaken.

For BP, it was a reminder that the scale and reach of its shipping activity, especially in environmentally sensitive areas of the world, represented one of the biggest risks facing the company in its many, diverse activities. *Torrey Canyon* had graphically illustrated that it was not immune to the consequences of failures by third-party ship owners or operators. Immediately after the *Exxon Valdez* spill, BP ordered a group shipping audit to be undertaken led by BPS's Captain Alan Preston. Its aim was to evaluate the vetting of ships and that all marine assets and terminals where the BP Group might be exposed were operated to international standards. By November 1989, HSE experts from BPS and other parts of the company were mandated to undertake a worldwide review of BP's oil spill response capabilities.

Exxon Valdez did not involve the loss of human life. The same could not be said of *British Trent*.

Getty

Exxon Valdez, grounded on Bligh Reef in Prince William Sound, Alaska, March 1989.

British Trent

Each year, representatives from BP Shipping attend a service held in the shadow of the Tower of London to mark the UK's Merchant Navy Day at a memorial to those whose lives were lost at sea in the two world wars and in more recent conflicts. Close by is the church of All Hallows by the Tower. Established in 675, it is the City of London's oldest church. Here, John Quincy Adams, sixth president of the United States, was married in 1797 and William Penn, who founded the state of Pennsylvania, was baptised. For centuries, London was a great port and All Hallows by the Tower has a long-standing relationship with seafarers. In the south aisle is the Mariner's Chapel, where a book of remembrance resides, containing the names of those lost at sea. On the wall beside the book is a ship's bell. It is inscribed 'British Trent.'

In June 1993, *British Trent* was proceeding with 24,000 tonnes of unleaded gasoline to Italy from Belgium, when she was struck by *Western Winner* in heavy fog, caught fire and was abandoned. In the process, nine officers and crew on *British Trent* were killed and several more badly injured. *Western Winner* was a bulk carrier on a voyage from London to Vlissingen in the Netherlands, with a part-cargo of copper dross. She was owned by Alpha Beta Investments of Liberia and flagged in Panama. She had a crew of 24 and her Master and officers held Panamanian licences.

Britain's Maritime Accident Investigation Branch (MAIB) was called upon to conduct the investigation. BP Shipping and the officers and crew of *British Trent* collaborated fully. Alpha Beta Investments of Monrovia, Liberia, hired lawyers which inhibited the investigation. Investigators were not allowed to view *Western Winner*, acquire information about her, or her records, or interview her officers or crew, who were flown out of the country. Captain Dalby, who

led the MAIB investigation, presented evidence to the coroner's inquiry, in which he stated that in his opinion, *Western Winner* had committed every navigational sin possible. He also noted a lack of action by the shore-based traffic control service that had only monitored the developing situation leading up to the collision.

The UK coroner, Mr Nigel Neville-Jones, recorded verdicts of unlawful killing and found that the Master of *Western Winner* had failed in his duty of care to other vessels in restricted waters by failing to comply with international regulations covering collisions at sea. He found that the Master had been grossly negligent in the navigation of *Western Winner* in confined shipping lanes at an excessive speed without a dedicated look-out in conditions of extremely poor visibility. The lack of action by traffic control also drew his sharp criticism. In contrast, the coroner made no criticism of the Master and complement of *British Trent.* He praised the bravery of the crew who did everything possible to save the ship and the lives of those on board. The fire-fighting had been hampered by damage to the fire main and the abandonment of the ship was thwarted by a wind change and the appearance of thick, black acrid smoke. He also commended the bravery of those on the Belgian pilot boat who had assisted in the rescue.

The loss of life and injury to so many was terrible and the lack of a proper holding to account only compounded a sense of deep injustice. It was a reminder that, regardless of chartering of ships or outsourcing their operation to agencies, everyone involved in moving BP's cargoes was part of BPS 'shipping family' and BPS had an important role as a 'force for good' on their behalf in raising and maintaining the highest standards across the marine industry.

In very different ways, *Christos Bitas*, *Exxon Valdez* and *British Trent* inadvertently reopened the question about what should be the primary role of Shipping inside BP. Tim Hughes, BP Shipping's head of operations and deputy CEO on the day when *British Trent* was struck had the task of briefing Russell Seal, the CEO of BP Oil International and the senior BP executive responsible for the shipping arm. For Hughes, the conversation that followed convinced him that shipping had an important future as part of the BP group.

Seal naturally wanted to fully understand the nature of the terrible incident and the impact on the seafarers involved, and to be assured that all that could be done was being done. But the conversation Hughes found he was engaged in went much farther in terms of the nature of the risks that shipping faced in this new world, where flags of convenience and a focus on costs were the dominant ownership model, and where the scale and risk of transporting oil and gas by sea had grown commensurately. Seal wanted the company to revisit the question of what it needed to do to better manage risk, and how it could better ensure the quality of the industry's ships, sea staff and shipping management. This – in

Getty

Above: *British Trent* is doused by fireboats after being struck in fog by a Panamanian-registered bulk carrier, *Western Winner* off the Belgian coast, 3rd June 1993.

Left: The bell of *British Trent* on display in All Hallows Church, London.

turn – again raised the question with which BP had grappled through the late-1970s and the decade of the 1980s: did BP need to be in the shipping business or was it increasingly a customer of the services of the industry? For had BP left the shipping business, it would not just have lost control of the transport of its oil to charters and the vagaries of the market, it would also have lost its considerable presence – built up over 75 years – on a wide range of international bodies that set the standards in safe and efficient ship design and operation.

British Trent had shown all too clearly that the risks associated with the carriage of goods at sea were defined by the standards of the entire shipping industry and not simply the performance of a single operator. Actively and directly engaging with and managing the risks inherent in the shipping industry of the 1990s could be the only way forward for an oil company involved with the movement of considerable volumes of oil, gas and chemicals around the world.

For Bill Luff, BPS's CEO, and his management team, out of the great sadness of the tragedy of *British Trent* came the start of real clarity of thought within the BP group about the role of BP Shipping and how it should be organised going forward.

It would mark the beginning of the long road back for BP's shipping arm.

Long road back

The early-1990s saw considerable drama at the top of BP. Robert Horton succeeded Sir Peter Walters as BP chairman and chief executive and began a 'Project 1990' aimed at establishing a new corporate culture based on leaner, looser styles of management control. However, he was replaced by David Simon as CEO and Lord Ashburton as chairman after just two years – ousted by a rapidly deteriorating financial environment and a management style that divided opinion. David Simon began the slow task of repairing the company's finances on which a world recession had inflicted considerable damage. The results for 1992 showed the company had lost money for the first time since 1914 – although much consisted of write downs and provisions for closures and job losses.

BP Shipping had to endure another painful round of cuts to its staffing complement. It was not alone. Over the five years from 1989 to 1994, the BP group would shed an astonishing 50% of its staff – 60,000 people – through divestments and redundancies. Coal, minerals and nutrition divisions all went in that period. The diversification experiment was over.

As David Simon and his senior team put into action the financial recovery of the Group, it was clear that they had not forgotten the lessons of *Exxon Valdez* and the very recent and terrible events surrounding *British Trent*.

While BPS would need to operate within the tight cost parameters under which the group now laboured as part of Simon's recovery plan, its role would no longer be one of a profit centre. Instead, it would be a business service providing the highest standards of shipping and marine support to the group. The key phrase employed was 'risk management'. Risk in its many forms: operational, commercial, and environmental.

Bill Luff, put it succinctly: "Within the BP group, shipping is now recognised as being the biggest single risk. Consequently, we can no longer be just a shipping company. We're actually in the risk management business." On a practical level, John Duff from ship operations told a gathering of shipping technical staff: "The days of only protecting ships from the environment are gone. Today, we must also protect the environment from the ship."

However, the reality was that the growing spot market for ships was replete with fleets that had not been invested in for some time and BPS couldn't be sure that the required quality of vessel would be available for a particular voyage at the time it was needed. A dramatic incident in 1991 raised serious concerns about the vetting process when a Greek vessel, *Kirki*, on charter to BPS lost its bow section due to corrosion. Subsequent investigation by the Australian Transport Safety Bureau found that the poor structural condition of the vessel in a number of areas had been disguised over time. To compound the problem, much of the world fleet of crude carriers comprised single-hulled vessels that were coming to the end of their operating lives, not least because of the regulations that followed the *Exxon Valdez* spill.

Martin Shaw, a marine engineer who later became BPS technical vice-president took over vetting activities and oversaw the implementation of a new formal vetting policy for BPS in 1995. He recalled how two particular developments transformed the effectiveness of ship vetting. First, the 'Oil Companies International Marine Forum' (OCIMF), a voluntary association of oil companies,

Opposite: BP Shipping returned to ordering new ships in the mid-90s with the first double-hulled tankers built to the company's specification. *British Hawk* – 151,000 dwt Suezmax H class – was launched in 1997. Seen here at the Finnart Ocean Terminal in Scotland.

"Within the BP group, shipping is now recognised as being the biggest single risk. Consequently, we can no longer be just a shipping company. We're actually in the risk management business."

BILL LUFF

including BPS, with an interest in the shipment and terminalling of crude oil, oil products, petrochemicals and gas, introduced the Ship Inspection Report Programme (SIRE). SIRE allowed the sharing of each member company's inspection reports of vessels with charterers, ship operators, terminal operators and government bodies. The system was to provide an invaluable database that endures to the present day.

Second, BPS put its own vetting organisation on a more professional footing. According to Shaw: "The *Kirki* incident changed our approach from 'negative' vetting to 'positive' vetting which requires that the inspector must have positive information to make a decision about the ship's integrity. Guilty until proven innocent if you like. That may sound like a technical change but the latter system creates a vast demand for information and requires more inspections. Combined with the SIRE database, the new approach provided an extremely robust and demanding vetting process."

The *Exxon Valdez* incident had also underlined the human factor present in many incidents of safety relating to shipping over the years. It was clear that only by adopting a fully integrated approach that established rigour in all aspects surrounding the operation of a ship could safety be deeply embedded within the industry. In 1993, the International Management Code for the Safe Operation of Ships and for Pollution Prevention (the ISM Code) was introduced. The code established safety-management objectives and required a safety management system (SMS) to be established by the ship owner or any person who has assumed responsibility for operating the ship.

Over the next few years, there were many meetings with management at group level and BP businesses. At each one, some small progress was made, 'splinter' fleets were integrated, procedures were standardised, expertise was shared, responsibilities were clarified, individuals were seconded, and structures were modified. Fleet reconstruction began and many initiatives were introduced to reconcile and rectify the decisions that had been made in the 1980s. Health and safety remained a priority and important improvements were made, through consistency in manning, clear goals and better morale. Matters were helped when, in the first half of the 1990s, shipping industry conditions showed signs of improvement. The general cutbacks to fleets and lower levels of new builds suggested that when an upturn came, there would be a shortage of good-quality tonnage to meet BP's needs. By 1995 the owned and managed fleet comprised just 12 oil tankers and five LNG carriers at two million dwt. It was a capacity level last seen 40 years earlier in 1955.

The first priority was to replace the crude carriers. Three new H class 150,000 dwt tankers, *British Harrier*, *British Hawk* and *British Hunter*, dubbed the Suezmax class, were ordered from Samsung Heavy Industries in South Korea. Orders for four P class VLCCs of 306,000 dwt soon followed. The unique contract for the Suezmax ships involved Samsung, Nordic American Tanker Shipping, and finance house Lazard Frères, and provided for the delivery of three ultra-modern vessels that were to be financed by a public offering of corporate bonds by Nordic American. The ships would be managed

Above: *British Harrier* –151,000 dwt Suezmax H class – the first double-hulled tanker to be ordered and built to BPS specification.

Opposite: *British Valour* – 210,000 dwt double hulled VLCC – bareboat chartered from Maersk in 1997.

Loch Rannoch – a dynamically positioned shuttle tanker – developed during the 1990s as part of the Schiehallion field FPSO.

and operated by BP Shipping, with freight risk borne by BP Oil. Two more VLCCs – the 210,000 dwt *British Valour* and *British Vigilance* – were bareboat chartered from Maersk Line and were the first double-hulled tankers to enter the fleet in 1997. Then, the question of the ageing River class products carriers was addressed, with orders for two at 37,000 dwt – *British Energy* and *British Enterprise* – bareboat chartered from an Italian owner and built in South Korea. In gas, BP's involvement with Abu Dhabi led to the first LNG ships to join the fleet. While neither owner nor operator, BPS provided crews to *Al Khaznah* and three other 135,000m^3 LNG carriers after their launch in 1994/95.

The company recognised that the upturn would be hampered by a shortage of well-qualified seafarers. While it had reinstated the Cadet Training Scheme in 1988, a decision was now made to launch a major cadet recruitment drive. It was recognition that the management of risk in oil shipping required top-quality seafarers – and a shortage was now looming. In addition, senior staff from other respected companies were actively recruited to bring a diversity of experience to the management of the business. Recruitment drives at careers fairs and large schools aimed to counter the negative impression that had been built up in the 1980s that the British Merchant Navy was defunct. BP Shipping sought to offer a career in a service where rapid progression to senior officer ranks was again possible.

Steps had already begun in the early '90s to improve the links with sea staff that had been fragmented by the move to agency manning. A thorough review of remuneration took place, with better terms and conditions written into salary-based contracts, while agencies were reduced from three to one. A new company, BP Maritime Services Ltd, was set up in 1994 to begin the direct employment of officers once again. More than 90% of those employed through the manning agency used by BPS accepted the offer to join BPMS and some 330 officers were re-integrated in this way. BPMS – managed by Atlantic Marine Limited Partnership – became responsible for officers' pay, conditions and their career development.

It brought back a closer relationship between ship and shore. A series of sea staff workshops was instituted that brought onshore and offshore staff together to discuss operations efficiency and work together on problems facing the fleet. The sea staff conferences and daily/weekly on board planning meetings (with formal agendas and written records) sought to encourage a real sense of partnership and teamwork.

An important bridge had been formed. It was not perfect but it was a first step in acknowledging that the agency manning and other initiatives of

the 1980s were incompatible with how BP wished to operate its shipping of oil and gas over the long term. By the end of 1996, there was a real sense that a page had been turned. Tim Hughes was able to declare a year in which: "19 million tonnes of oil and 7.25 million cubic metres of LNG were transported without a single spillage and more than one million man hours worked without a lost time injury." Underneath the headline, BPS's staff newsletter listed a host of statistics that pointed to the 'quiet revolution' that was taking place inside BP Shipping under its new mandate:

"Emergency response training had occurred for 250 people across the BP group; marine assurance activities on behalf of BP group companies had been undertaken in 50 countries around the world; vessel audit training was provided for 30 European port state inspectors; and marine assurance workshops were held for 100 Korean ship owner representatives." In 1996, the ship-vetting team at BPS had screened nearly 17,000 vessels and conducted more than 1,000 physical inspections, as well as 18 owner audits to ensure compliance with the standards of the Group Shipping Policy.

These were exciting times for staff and management, not least because there was a sense of purpose that many felt had been missing for years. The resurgence grew beyond simple objectives of what percentage of 'group' oil was carried in 'group' ships. With the appointment of Richard Paniguian as BP Shipping CEO in 1995, the shipping arm began to extend its responsibilities within the BP group for what was termed 'marine assurance'. Paniguian and BP's new group CEO, John Browne, recognised that oversight for all of the shipping activity across BP did not reside in one place and that shipping was not the sole marine risk run by BP.

According to Paniguian: "Marine assurance became a powerful spring in the BP Shipping machinery and was an issue of far greater relevance than just our shipping business. Wherever BP had an interface with water there was risk. That might be a terminal on an inland waterway from which barges were loaded to supply the retail outlets of central Europe. It might be a crude oil-loading terminal in Alaska. It might be an offshore production platform in West Africa, or the North Sea, or wherever. And it became recognised that the specialists in managing the marine interface were BP Shipping's people."

While Browne began to lay the groundwork to transform BP into a 'supermajor' oil company in the latter years of the 1990s, BP Shipping began the process of providing the assurance sought for the various shipping activities of other BP businesses, as well as broader marine risks. In 1999, the Alaska Tanker Company was created by Keystone Shipping Company, OSG Ship Management, and BP to consolidate all of BP's Alaskan crude oil shipping requirements into one operating company to ensure a high and consistent level of operating integrity when carrying BP's oil.

BP's upstream business was by now beginning to venture into deeper waters, such as those found to the west of Shetland, where it sought to develop oil discoveries in water depths of 500 metres in the North Atlantic. The marine challenges were considerable, as BP found in the development of the Schiehallion field using a floating production, storage and offloading (FPSO) vessel. The development of a dynamically positioned shuttle tanker – *Loch Rannoch* – to take oil from the FPSO was overseen by BP Shipping and after her launch in 1998, the company bareboat chartered her from Maersk and operated her in delivering oil to the Sullom Voe terminal. Confidence grew such that by the end of the 1990s, almost all of the group's shipping operations were the responsibility of BPS.

CENTENARY INSIGHT

BP's upstream business was by now beginning to venture into deeper waters, such as those found to the west of Shetland, where it sought to develop oil discoveries in water depths of 500 metres in the North Atlantic. The marine challenges were considerable.

New century renaissance

In the first year of the new century, two of BPS vessels made very different calls at BP's Coryton refinery located on the River Thames Estuary and some 28 miles from London. On the 20th January, *British Pioneer*, the first of four brand-new 309,000 dwt P class VLCCs, arrived at the end of her maiden voyage loaded with crude from Saudi Arabia. She represented the future of BP's shipping business. Later that same year, *British Tamar* – the last of the River class product tankers – berthed at Coryton for the very last time before sailing to the breakers yard in China. After sterling and extended service, she represented the past.

She was paid a last visit by her sponsor, Millie Gresham, wife of the former BP Tanker Company MD David Gresham, who had named her at launch in 1973. After 27 years' service, it was a deeply poignant moment for everyone associated with her. At her launch, Millie had presented the ship with some pewter tankards that had been hung on hooks in the bar. The effect of 27 years of swinging to the ship's roll had worn the handles through to paper thin!

The year 2000 heralded the start of what would prove to be a major renaissance for BP's shipping company as it reached its 85th anniversary. BP had become a very different company after a series of groundbreaking mergers and acquisitions with Amoco, Arco, Veba and Burmah Castrol among others – moves that triggered other corporate transformations. The mergers coincided with BP's entry into Russia and China, the success of its deepwater 'frontier' exploration strategy in the Gulf of Mexico and Angola, as well as other exploration success in Egypt and Colombia.

BP was now a company with prime positions in many of the world's key oil and gas-producing areas, retail markets, petrochemicals, and emerging regions. World markets for oil and increasingly gas were growing fast, driven by China and India in particular. BP had joined the ranks of the supermajors. Sir John Browne's priority was to bring an organisational order to the diverse range of assets that had been acquired while identifying synergies, removing duplication and effectively managing costs. Just as importantly, he wanted the new portfolio risks evaluated and managed.

Amoco and Arco didn't bring a fleet of ships, but they did create a remarkably rich set of assets which presented both risk and commercial opportunity for BP's shipping business. While the international deal-making and merger activity was being conducted at board level, a small revolution was going on inside BP Shipping, working in tandem with BP's trading division integrated supply & trading (IST) led by Vivienne Cox. BP's oil trading arm and its refining business had hitherto opposed the purchase of new ships, arguing that capacity in new ships could be obtained from the market. That was to change when a recruit from its own ranks – Andy March – took over as BP Shipping's commercial director. March began to articulate a new strategy based on two propositions for purchasing new ships.

First, there were not enough double-hulled ships on the market to carry BP's oil without incurring a significant quality premium. Second, there was a considerable commercial prize to be had by not simply trading around cargoes of oil, but also trading and optimising around the fleet of vessels to carry them; this optimisation had previously been lost to the spot market and its operators. March and his team were able to demonstrate the considerable commercial opportunities that were available, especially in northwest Europe, to optimise the organisation of vessels so that they could backhaul cargoes between different terminals and refineries. Both elements depended upon access to and control of the right ships.

Soon, BP's charterers and ship operators were sharing the same 'bench' and working closely to develop the 'book', while BPS and IST leaderships reached agreement on how to allocate the potential revenues. Most importantly, the approach enjoined BP's refining and marketing division to supporting the case for new ships on the grounds that it would enhance their own commercial optimisation performance.

In 1999, Linda Adamany had become the first female chief executive of BP Shipping. She led an approach to Browne for approval to purchase a small number of new ships. Browne agreed but emphasised the prime justification was not commercial but managing group risk.

Emboldened by this, Shipping submitted a second finance memorandum making the case for further ships. It too was approved, but this time on condition that a full strategic review was undertaken of BPS shipping policy and commercial strategy given the potential scale of further commitments. New and existing business, vetting standards, terminal operations, and marine expertise were all to be included. Group demand by class of ship and the availability of shipping in these classes (owned or time chartered) was evaluated and opportunities for trading optimisation identified. A portfolio was then worked out that would meet BP's needs for owned, time-chartered and voyage-chartered tonnage within each class of ship.

While the commercial case was strong, especially as the market for shipbuilding was at a particularly attractive point in the cycle, BP

A new relationship between BP Shipping and BP's integrated trading arm – IST – established a commercial foundation on which both parties thrived.

judged that the new shipping strategy was a vital component in managing risk within the enlarged BP set of activities where the vast majority of oil was still transported by sea. The sinking of *Erica* (an elderly tanker carrying fuel oil for Total off the coast of Brittany in 1999) was a further reminder – if one were needed – of the variable standards still to be found in the charter market.

In September 2000, BP Oil Shipping Company, USA and BP AMI Leasing Inc had contracted with the National Steel and Shipbuilding Company in the US for a new fleet of state-of-the-art oil tankers for supplying Alaskan crude oil to West Coast ports. Each of the four ships would have double hulls and reserve propulsion and steering systems to navigate this highly-sensitive US West Coast route. They were to cost almost $1 billion. *Alaskan Frontier* began service in August 2004 and all four ships were in service by 2006. The lessons from *Exxon Valdez* had been learnt.

Adopting the principle of '50% shipping cover', in terms of the BPS-owned, operated and period-chartered fleet that was required to move BP's volumes, reflected both the market opportunity and a determined approach to risk management. The new strategy was to prove a game changer for BP Shipping.

In 2001, Adamany was able to make the stunning announcement to her staff that a $3 billion shipbuilding programme had been approved by the BP board. From a fleet lowpoint in 1995, the orders would quadruple the number of owned/managed ships to over 50 by 2005 and nearly triple the fleet capacity to 5.5 million dwt. Orders would include Aframax tankers, product tankers, new coastal tankers and three new large LNG tankers. This was to be a thoroughly modern fleet and the fact that 46 tankers were ordered with double hulls was recognition of an industry that was going to be held to an increasingly high standard. It would put BPS out and ahead of the industry regulators and many of its competitors.

The operated and time-chartered (OTC) fleet – directly-operated tonnage plus time-chartered tonnage – would by 2006 be capable of carrying some 50% of BP's requirements. The other 50% would be put out to charter on ships carefully vetted and managed to BP's standards. It was a new strategy to mark a renaissance for BP Shipping within BP and in the wider industry.

The next few years were a flurry of activity as the procurement of ships and people got under way. By 2005, new ships were being launched at the quite incredible rate of one per month. Four new E class product tankers joined the fleet during 2002/03, starting with a new *British Explorer*, and four identical vessels bearing the 'Baltic' prefix were taken under management. The main oil

Opposite: The innovative 155,000 cubic metre capacity Gem Class LNG ships under construction in Hyundai's Ulsan shipyard in South Korea, in 2006.

Left: BP's Tangguh LNG terminal in Papua, Indonesia opened in 2009 with liquefied gas carried by vessel to markets in China and South Korea.

shipbuilding programme was delivered in three classes totalling 32 vessels – the Tree class of 106,000 dwt Aframax tankers from Tsuneishi in Japan, the Bird class of 115,000 dwt Aframax tankers from Samsung, and the 46,000 dwt Virtue class from Hyundai. These included some vessels strengthened for trading in ice conditions.

Four liquefied petroleum gas (LPG) carriers were ordered from the Mitsubishi Heavy Industries (MHI) yard in Nagasaki, Japan. The refrigerated and double-hulled ships had a capacity of 83,000m^3, with *British Confidence* the first to launch. They represented the largest LPG ships in the world.

BP Shipping's previous experience with LNG in Abu Dhabi and especially in Australia was now going to be put to great use. BP's deals with Amoco and Arco had transformed it into a gas major.

Major gas-producing assets in Trinidad and Tobago, Indonesia and Australia needed to reach markets in the US, Europe and China, Japan and South Korea. State-of-the-art LNG carriers were now required to commercialise the gas. The first of three LNG carriers – *British Trader* – was launched in 2002 from the Samsung yard in South Korea and, unlike so many LNG vessels on the water whose service was confined to one loading point and one discharge point, she was deployed to follow a 'merchant' model, plying her trade between multiple ports to meet growing demand for gas around the world.

BP's Australian and Indonesian gas projects had secured highly-valuable, long-term contracts to supply China and South Korea with LNG. BP had also won the right to be the sole foreign partner in developing China's first LNG import terminal, located in Guangdong province, where the gas would be delivered. As the LNG business grew rapidly, a second order for four LNG ships of the Gem class were placed with Hyundai in South Korea – with *British Emerald* delivered in 2007. They briefly represented the largest LNG ships in the world.

Five Chinese-built LNG carriers were ordered by a consortium of companies, including Australia LNG Pty. Ltd, in which BP held a one-sixth share. The 147,200m^3 *Dapeng Sun* was the first to be delivered. BP's expertise was sought in managing the new vessels. The China LNG Ship Management International Company (CLSICO) was formed as a joint venture between China Ocean Shipping Company (COSCO) and China Merchants Group Company (CMG), which held a 60% share, and BPS, which owned 40%. Senior officers for the carriers were provided by BPS to complement the Chinese officers.

The call on BP Shipping's marine expertise by BP's new gas and power division was to extend beyond ships. Demand for gas was driving new


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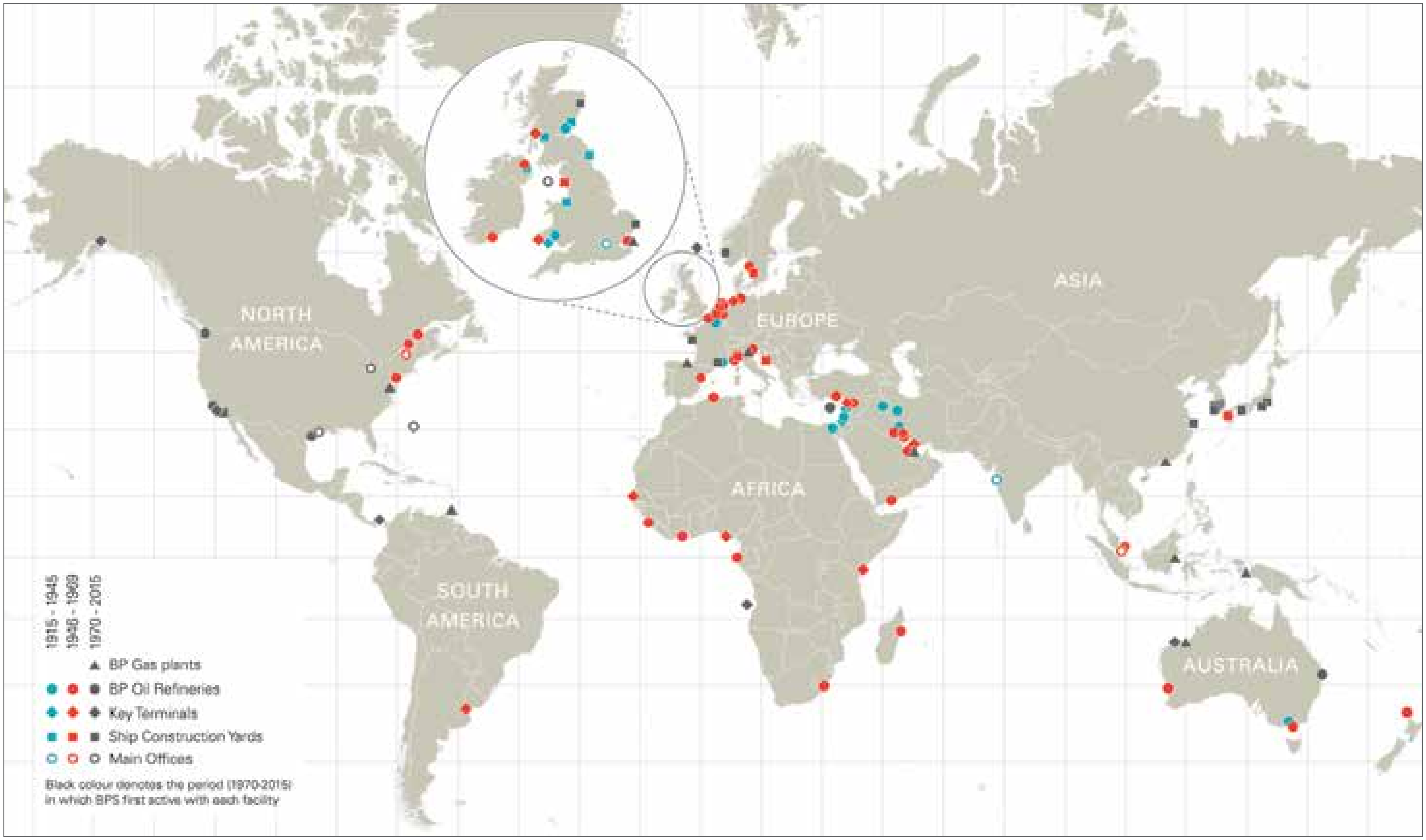
BPTC/BP Shipping key operations: 1970-2015



LNG terminal developments and BPS staff provided marine assurance and input to design studies in Egypt, South Korea and the US.

As ships arrived, others sailed away for the final time. In 2005, an era for BP Shipping ended when *Border Jouster*, the last operational vessel to carry the Border name, and probably the last British-built, British-manned and London-registered BP tanker, sailed for the breakers yard at Santander in Northern Spain. *Border Jouster* was launched in 1972 for Shell Mex and BP, before transferring to 100% BP ownership when that joint venture ended in the mid-1970s. But BP's use of the 'Border' prefix went back to the launch of *Border Regiment* in 1952, owned by the Lowland Tanker Company.

The Borders operated out of the refinery at Grangemouth, serving mostly small ports from Sunderland on the English northeast coast, up and around the east and west coast of Scotland as well as the Orkney, Shetland and Hebridean Islands. The Border fleet delivered all types of fuel, from heavy oil to motor spirit, often all in the same ship. The entire Scottish economy, including motor vehicles, domestic heating, power generation, and distilleries, relied on this particular class of ship.

Whereas Scotland had been a feature of BP's shipping activities for the best part of 80 years, significant BP investment in Russia had begun in the 1990s with the purchase of a 10% stake in Sidanco, then Russia's fourth largest oil company.

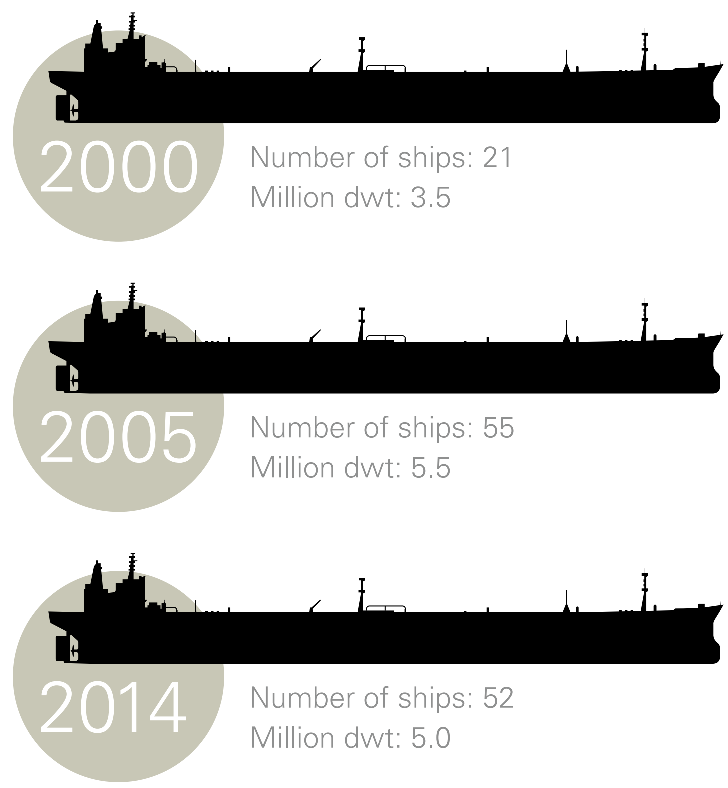
Opposite: *British Ruby* – 155,000m^3 LNG carrier – passes through the Straits of Gibraltar en route to BP's gas fields in Trinidad and Tobago (top). Stowing ropes on *British Ruby* after leaving port at Sagunto, Spain (bottom left). The Gem class LNG carriers are fitted with revolutionary cargo gas-burning diesel engine technology (bottom right).

Above: BP's footprint and scale grew as a result of numerous acquisitions and mergers completed at the turn of the century. The calls on BP Shipping were to grow, whether in carrying BP's large new portfolio, or in the marine aspects of developing new sources of 'frontier' oil and gas.

Checking the bilges inside *British Trader* – a 138,000m^3 capacity liquefied natural gas carrier. *British Trader* represented a new 'merchant' model of moving gas between producers and customers.

Left and below: Greater Plutonio floating production storage and offloading facility located in the South Atlantic Ocean off the coast of Angola.

BPS owned/managed fleet 2000-2014



The stake was subsequently increased and in 2003, BP merged its Russian interests with those of TNK to create TNK-BP, a hugely successful joint venture employing around 50,000 people and operating in nearly all of Russia's major hydrocarbon regions.

The formation of TNK-BP brought BP Shipping involvement with the Volga fleet, which carried much of the joint venture's refined products on the Volga River, relying on a fleet of around 40 vessels. The activity included transporting crude to the Black Sea where it was transshipped onto ocean-going vessels. BPS devised a strategy to gradually progress that local fleet towards international shipping standards over the medium term.

In Africa, BP Exploration's huge oil finds, offshore Angola, called for the construction in Ulsan, South Korea, of one of the world's biggest FPSOs, an 80,000 tonne vessel/platform, for use in Angola's Greater Plutonio field. For this project, a BPS naval architect and marine engineer were seconded to keep a watchful eye on the hull construction and main marine systems installation at the Hyundai Heavy Industries (HHI) yard. At the launch, BPS officers were on hand to guide the 10,700-mile tow of the FPSO to Angola, where BPS seconded staff oversaw the ship-to-shore services. At Turkey's Ceyhan marine terminal, the first Azerbaijan Caspian oil began to arrive from the Baku-Tbilisi-Ceyhan (BTC) pipeline and was loaded into *British Hawthorn* on 4th June 2006, with some 600,000 barrels of crude oil for delivery to world markets.

In the UK, BPS staff played a key role in the most far-reaching changes in North Sea offshore safety cover since the introduction of platform emergency standby vessels when Project Jigsaw – BP's new air and marine offshore rescue and recovery scheme – went live. On the marine side, the first of four new regional support vessels (RSVs) – *Caledonian Vanguard* – arrived in the UK from the Yantai yard in China to be commissioned and equipped with the first two autonomous rescue and recovery craft. It was an example of the closer cooperation between BP businesses, with BP Exploration managing concept and design and BP Shipping overseeing finance, and supervising the build and subsequent operation of the craft.

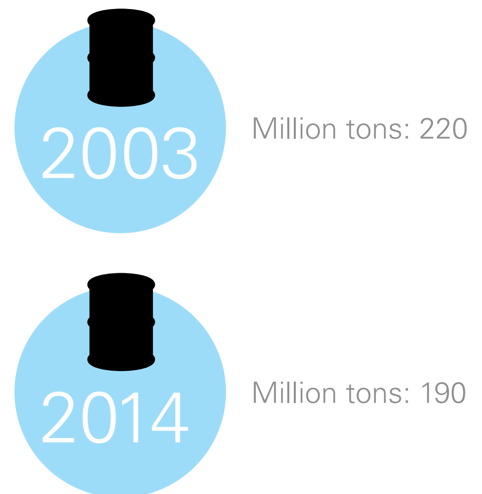
CENTENARY INSIGHT

In just five years, BP Shipping was transformed. It had rapidly assembled a fleet of more than 50 owned or operated vessels. At any one time, BPS had approximately 500 cargoes on the water, on directly operated, time chartered and spot chartered vessels.

In just five years, BPS was transformed. It had rapidly assembled a fleet of more than 50 owned or operated vessels. At any one time, the company had approximately 500 cargoes on the water, on directly operated, time chartered and spot chartered vessels. The number of BPS employees and contractors at sea and ashore had multiplied from around 1,000 in the year 2000 to almost 3,000 by the middle of the decade. BPS was also rapidly growing activities in the critical areas of ship vetting, ports and terminals, technical, commercial, HSSE, and government and industry. It was a company renewed and equipped for the challenges of the 21st century.

When Bob Malone took over from Linda Adamany as chief executive of BP Shipping in 2003, he was immediately conscious of the extraordinary pressures that were upon the business as a result of the rapid growth in the fleet, the assimilation of so many new staff, and the new marine assurance demands that were put upon the organisation. He was also concerned that while there was a decrease in the more severe property and equipment-related safety incidents, there was a rise in personal injuries and small spill incidents across the business. A new initiative – the 'Boots

BPS volumes shipped 2003-2014



on Deck' programme – was introduced so that BP Shipping had a group within the BPS HSSE function that according to Malone "does nothing other than go out to ships day in, day out, sail with them and provide safety support – that's their job."

On 6th June, 2005, Malone decided to call the first-ever fleet-wide safety stand-down. This required the entire fleet to stop all work safely and reflect on a voice message he had recorded. It asked everyone to provide feedback around some major themes, such as safety leadership, supervision, procedures, and personal commitment to intervene in service of safety. The feedback that was gathered fed a plan of action on safety across the business. By now, BPS was adding more than 30 new people and one, sometimes two, new vessels a month to the fleet. Making sure that there was no deterioration of standards while this was going on had become a significant challenge. Malone set his technical staff a target to "deliver better connectivity" between ship and shore and so help create a "floating community".

Vessels began to be fitted with VSAT (very small aperture terminal) satellite dishes on board, which gave officers and crew 'always-on' internet access. Each vessel had four telephone extensions routed back to the Sunbury exchange. By using the five-digit direct-dial number, vessels could now initiate and receive calls as though they were an extension to an office. Not all sea staff thought this unbroken communication from head office was such a great concept! Just as importantly, sea staff was soon able to access the web to join the emerging social media revolution, which connected them with families, friends and work colleagues ashore.

Opposite: *British Kestrel* – 115,000 dwt double-hulled Aframax tanker – joined the fleet in 2006. Seen here conducting a lifeboat drill at the Ceyhan terminal, Turkey. She went on to play an important role in BP's response to the Deepwater Horizon incident four years later.

Right: *British Envoy* – 37,000 dwt product tanker – launched in 2006. A deck officer keeps radar watch in the English Channel.

At the end of 2005, Malone acknowledged in a communication to all staff that the difficulties they faced were "all part of the growing pains as we become more and more recognisable as a centre of expertise that provides solutions to complex shipping and marine issues." Malone took his concerns to Lord Browne, who agreed to his request to slow the pace of change and to clarify the precise responsibilities of shipping under the group's new organisational bible, 'the Management Framework', so as to ensure that BPS could be appropriately resourced for the role that it was to perform.

Taking over as CEO from Malone, who was appointed to lead BP America, David Baldry, instigated a review to determine the optimum size and shape of the fleet after such rapid growth. Work on defining the accountabilities of BPS for the management of marine risk across the group was prioritised and a group marine standard (GMS) was agreed in 2007 and became fully operational in 2010.

The fleet strategy review cautioned against "chasing size for the sake of size", but instead recommended "right-sizing the fleet to manage BP's core equity-based activities". Baldry found that BPS had created a fleet that was close to the optimum size but the component parts required some adjustments during future renewal programmes.

BP Maritime Services, Singapore (BPMSS) was established in 2007 as the legal employer of all BP Shipping's officers. It became responsible for all the HR functions applicable to sea staff, including global recruitment, development, training and performance, disciplinary and grievances of BP's marine employees, and general HR functions relating to them. In addition, it was responsible each year for sponsoring at least 60 new officer cadet trainees. A second company, BP Maritime Services, Isle of Man (BPMS IOM), took over logistical support of BPMSS, including allocating crew to vessels, crew changes and management of travel, and travel arrangements and logistics for training courses.

The role of BPMSS was to ensure that every officer sailing with BPS worked within a clear management structure, linking performance to pay and involving the support of a personal development officer with whom regular career-related discussions could be held. Entry procedures raised the required educational standards for Officer trainees, introducing BP-specific induction courses and enhancing the safety and environmental focus of the initial training courses. On board mentoring of Officer trainees became standard practice. Employing a diverse workforce at sea remained a challenge, both in terms of gender and ethnicity. The company had begun to recruit Indian officers in 2004 to complement its largely British, Irish and Polish officers, and it now sought to actively promote a diversity agenda through awareness programmes, diversity champions, and the use of diverse selection panels for senior-level management jobs.

A Sea Staff Communications and Consultation Forum (SCCF) augmented more direct and positive two-way dialogue with shore management, and performance and development officers were appointed as an important conduit for sea staff. Now sea staff could fully engage in a conversation about their potential career path and progression from the very earliest stages of their employment with BP Shipping. Twenty years had passed since 'agency manning'. A new, more progressive and inclusive approach to staffing was now firmly in place.

Left and below: BPS cadets formed part of a major safety initiative, as new staff numbers rose rapidly in the first decade of the century.

Opposite: Workers at Samsung's South Korean yard – the world's third-largest – where outstanding safety performance was achieved during the construction of new vessels for BPS.

Clean seas, safe ships, commercial success

Three themes underpinned BP Shipping's approach during the first decade of the 21st Century: clean seas, safe ships and commercial success. They reflected the distinctiveness of the business and its core values as it resumed its position as one of the world's largest merchant fleets. They also underpinned a drive to broaden the existing safety culture into one that would encourage staff to take personal responsibility in all of their work – whether at sea or ashore – for safety, the environment and commercial performance.

'Raising the flag together' was a call to arms. It would not be sufficient, for the charterers, say, to demonstrate commercial success if in doing so they failed to take proper account of safety and environmental considerations. The flag was to be the symbol of their shared maritime heritage, as well as a distinctive identity within the BP group.

The 'safe ships' theme was more than an aspiration – it was the way forward and important especially for a company where eight out of 10 people had been working for it for less than three years. More than 1,000 new officers and some 200 cadets had to absorb BPS safety values and operational procedures in a short space of time. The embedding of this culture among those employed or working on BPS ships or premises was one challenge. To be able to influence the safety behaviour on the premises of external organisations was another. As the shipbuilding programme gathered pace, new relationships were developed with yards, especially in the Far East, which placed safety at the heart of each new contract and programme. There was much to learn from different companies working together.

Samsung Heavy Industries clocked four million manhours without a single DAFWC (day away from work case), no medical treatment cases, and a total of just 43 first-aid cases. This was quite an astonishing achievement in the traditionally hazardous world of shipyards and shipbuilding. BP Shipping broke new ground when it negotiated multiple ship contracts with each yard appointed. For the first time, it included a right for a BPS representative in the yard to stop work if he or she deemed the work unsafe. This was all the more remarkable because it would still mean that the ship builder would be liable for damages if the ship was consequently delivered late because of a BPS intervention at the yard. This was a fine example of safe ships and commercial success working in tandem. It set a new standard for all future contracts entered into by the company.

The theme of 'clean seas' was very much in tune with the company's long history of working with the industry to advance environmental standards in the carriage of oil and gas by sea. In 2007, a BP Shipping Environmental Charter committed the company to "significantly lower the environmental impact of its operations by reducing waste, emissions and discharges." Growing international concern at the science of climate change had grabbed the attention of world leaders and the general public during these years. In a groundbreaking speech for an oil company leader delivered at Stanford University in the US in 1997, Lord Browne made reference to the United

Alaskan Explorer – 185,000 dwt – launched in 2004 as part of the conversion of all BPS US tankers to double hulling. Operated by the Alaska Tanker Company, the four Alaska class vessels, which cost almost $1 billion to build, each have two diesel electric engine rooms, two propellers and two rudders to enhance their safety and reliability on the environmentally sensitive route along the US west coast.

BP's chief executive, Lord Browne, joined the Governor of California, Arnold Schwarzenegger, and British Prime Minister Tony Blair at a gathering of government and business leaders sharing ideas on tackling climate change in 2006. *Alaskan Explorer* was invited to provide the backdrop for the news conference at the Port of Long Beach in California, US.

Getty

Nations Report and the human element in global warming, and concerning the need for BP to take ‘precautionary measures’. Browne set BP on a course to reduce its own emissions of those gases associated with global warming. By its actions, BP was able to demonstrate how such reductions could be achieved while at the same time saving the company money, largely through greater efficiency.

BP Shipping’s environmental goal was clear: to reduce average greenhouse gas (GHG) emissions by its owned/operated and time-charter fleet as measured on a continuous basis. The business case for lower emissions was overwhelming. Lower GHG emissions equated to reduced fuel consumption, improved costs, and a more profitable business. Again, commercial success was not mutually exclusive with clean seas. BP Shipping soon found that by working together with the traders and ship operators, there was much that could be done in terms of changing vessel speeds, using engines less, saving on bunkers, and targeting berthing windows through improved communication and voyage management. This had echoes of the great advances in fleet efficiency and operation made by BP Tanker Company in the 1960s.

It was a proud moment for the US fleet when Browne joined political and industry leaders, including UK Prime Minister Tony Blair and California Governor Arnold Schwarzenegger for a discussion and the signing of an agreement on global warming in 2006. The ceremony took place at the Port of Long Beach in California and the Alaska Tanker Company’s vessel – *Alaskan Explorer* – flying the port green flag awarded for its contribution to environmental progress at sea – provided a magnificent backdrop to the leaders’ handshakes.

Although it was more than a decade since David Simon had declared that BP Shipping was not to be considered a profit centre, the issue remained of how best to measure and incentivise the business, including commercial success. A mixture of financial and operating measures was instituted to reflect the various objectives of the business. Replacement cost operating profit gave a broad financial signal; recordable injury frequencies (RIF) tested safety performance, optimisation of the fleet, availability, and utilisation of vessels on BP Group business assessed the commercial efficiency; and releases and spills provided the environmental performance indicator.

Measuring performance through replacement cost operating profit was later to change due to its strong dependence on freight rates over which the company had little control. To the BP group, what mattered most was the gross margin that shipping could generate as this could be strongly influenced by the actions of the business in the cost and efficiency of running the fleet and also through the cash that was generated. New sources of income were beginning to develop during the decade, which provided an additional financial measure and illustrated the commercial acumen of BPS when working in combination with IST. A market in optimisation freight swaps emerged in the late-1990s, when the Baltic Exchange began to publish reliable daily freight rate indices for a variety of oil tanker sizes and trade routes. BP and a few pioneering market participants started to use these indices as a basis for trading financially-settled forward contracts, also known as freight swaps.

For the first few years, the activity was very limited, both in terms of volume and number of participants involved. Increasing volatility in the freight market at the end of 2002 began to draw in new companies. This sparked a rapid growth in freight swaps and volumes that more than tripled annually. For BP Shipping, the commercial benefits were clear. From a financial exposure point of view, owning or time chartering a tanker was effectively to take a ‘long’ position in terms of forward freight rates. If the market went up, then the ship earned money, but if the market went down, then a player could go bust. The pay-out from a freight swap worked in a similar way.

Although freight swaps could not be used for carrying oil, several factors made them preferable to trading physical ships. These included speed of execution, the possibility to sell ‘short’, flexible trading periods and volumes, reduced execution cost and zero risk of polluting the environment. Freight swaps were also an excellent tool for managing and hedging physical freight exposure, a fact that attracted existing and new freight market players to trade. Safe ships, clean seas and commercial ships’ captured the essence of what BP Shipping now stood for.

These were busy times for the shipping company. They were to suddenly and dramatically get even busier.

CENTENARY INSIGHT

New sources of income were beginning to develop during the decade, which illustrated the commercial acumen of BP Shipping when working in combination with IST.

All hands on deck

In early-July 2005, Lord Browne was travelling by car to the Royal Naval College in Greenwich, London. He was to be host at a dinner celebrating the 90th anniversary of BP's shipping business and a large group of guests was gathering in the beautiful Painted Hall. En route, he took a disturbing call informing him that BP's most ambitious engineering project to date – the world's largest and most advanced semisubmersible oil and gas platform – Thunder Horse – was listing at an angle of 20-30 degrees in the deepwater Gulf of Mexico following a hurricane.

BP Shipping staff were soon on a flight to Houston, joining up with US colleagues and salvors in a joint effort to right the platform and to discover what had caused such a dramatic collapse. A team effort across the BP businesses ensured this was accomplished. Within a week, the platform was back on an even keel and, shortly after a visit offshore by BPS's marine engineers, the cause was identified and remedial steps taken. Thunder Horse was to clarify and reinforce BP Shipping's expanded role in providing assurance for, in Browne's words, "all that floats" in the group. (Chapter 4).

The following month, Hurricane Katrina, the largest and one of the strongest hurricanes ever to hit the Gulf Coast, inflicted chaos onshore and offshore. BP Exploration was able to call on BPS to provide shipping and marine expertise, which extended to operations, technical, assurance, and commercial and legal staff developing solutions to various production issues.

The importance of BPS to the BP group was to be demonstrated again five years later. On 20th April 2010, an explosion on the drilling rig, Deepwater Horizon, killed 11 workers and injured others. The Transocean rig was completing the drilling of the Macondo well for BP in the Gulf of Mexico off the southern coast of the US. Consumed by fire, the rig eventually sank. Oil began to flow from the seabed wellhead into the Gulf of Mexico. Over the next three months, a massive response effort and battle to cap the well ensued. Two months after the incident began, the well was sealed permanently following the drilling of a relief well.

From the beginning, a major response operation swung into action, led by BPXP and the US Coast Guard working in tandem. The response effort had three main elements – controlling the well at the source, recovering released oil on the water, and cleaning up oil that reached the shoreline. Nearshore and shoreline response operations were

Below: Thunder Horse platform, Gulf of Mexico – the world's largest and most advanced semisubmersible oil and gas production platform.

Right: The Thunder Horse platform was still being prepared when she developed a problem in her ballast systems during a temporary evacuation caused by Hurricane Dennis in 2005.

Corbis

run from two onshore bases in Louisiana and Alabama, while well control operations were run from BP's Crisis Management Centre in Houston.

BPS immediately offered help from its US and global teams. The clean-up operation involved the chartering of a huge fleet of vessels, including specialist skimming craft, lightering and barging vessels, that removed the captured oil to land for discharge and treatment, and many small craft and converted fishing vessels that played an important role in identifying and cleaning up affected areas. A small army of clean-up crew was recruited and BPS was called upon to help identify suitable floating accommodation to house them. Oil recovered from the surface and the coastline was removed to facilities at Venice at the mouth of the Mississippi.

Around the incident site, a flotilla of vessels was active in providing support to the well-containment efforts below sea. BPS supported chartering of specialist vessels, such as barge crane's and played an important role in coordinating vessel deployment and movements in what was to prove a very busy and crowded sea area. In Houston, BPS marine engineers joined a multi-disciplinary team drawn from across BP, including subsea experts from BP Exploration and pipeline experts from BP's refineries arm, to work on intermediate measures to 'produce' the well until a relief well could be drilled to plug the borehole. What followed was a well-coordinated engineering, operational and logistical project to develop and install a floating offshore production system for Macondo. In a typical field development, delivery of a comparable system might take two to three years to deliver. At Macondo, the scheme was put in place in just three months.

As the design and planning began, BPS helped to find an offshore supply vessel that had an oil production unit on board. It was hired, taken to Corpus Christi and modified to a floating production, storage and offloading (FPSO) vessel. The *Loch Rannoch* shuttle tanker, with its dynamic positioning system was assigned as part of the system to produce the blown-out well by taking oil, that had first been stabilised by the FPSO, to an onshore facility. Among the armada of vessels assembled, *Seillean* was contracted from her deployment by new owners in Brazil – some 20 years after BP Shipping supervised her construction in a Belfast yard.

Adrian Howard, BP Shipping's vice president of operations, described the project as "phenomenally complicated", not least because the oil was so gaseous in content. Connecting a new riser pipe to the seabed wellhead would bring oil and gas to the surface, but as the oil rose up the pipe, it would expand and accelerate under pressure to exit the riser pipe at great velocity. It would also quickly cool as it rose, creating the risk of forming icy hydrates. One solution was to bring *British Kestrel* to the well site in order to pump hot water along the 'riser' pipe and support the delivery of anti-hydrate solutions.

BP Shipping exemplified the best of BP's 'one team' value in supporting a major emergency response effort, while continuing to run its own day-to-day shipping operations across the world.

Opposite page: The clean-up operation at the site of the Macondo well involved chartering a huge fleet of vessels, including specialist skimming craft, lightering and barging vessels.

Left: Around the Macondo incident site, a flotilla of vessels supported the well-containment efforts below sea.

CENTENARY INSIGHT

BP Shipping exemplified the best of BP's 'one team' value in supporting a major emergency response effort while continuing to run its own day-to-day shipping operations across the world.

New ships – same enduring principles

The appointment of John Ridgway to the post of BP Shipping CEO in 2009 completed a remarkable journey for the 16-year-old cadet who became lead executive after, in his own words, "37 years of training". Ridgway took over in the midst of the worst global recession since the 1930s and the shipping industry had started to contract as manufacturing and commodity businesses worldwide suffered a sharp downturn.

Under group chief executive Tony Hayward, BP sought to establish a systematic approach to safety across all its operating units through the new Operating Management System (OMS). For BP Shipping, OMS presented a close synergy with the shipping industry's International Safety Management (ISM) code, which had earlier established a common standard for systematic operating excellence.

Ridgway and his management team restructured BPS's 55-vessel global fleet from three regions into two – West and East – to streamline and simplify the organisation, to better reflect the fleet size, and to align more closely to the industry model. While not a profit centre, efforts were stepped up to allow BPS to evolve as a more performance-driven organisation, in line with its declared theme of commercial success. A 'Share and Perform' initiative was introduced to promote the sharing of good ideas, innovations and knowledge in pursuit of its commercial and operational aims.

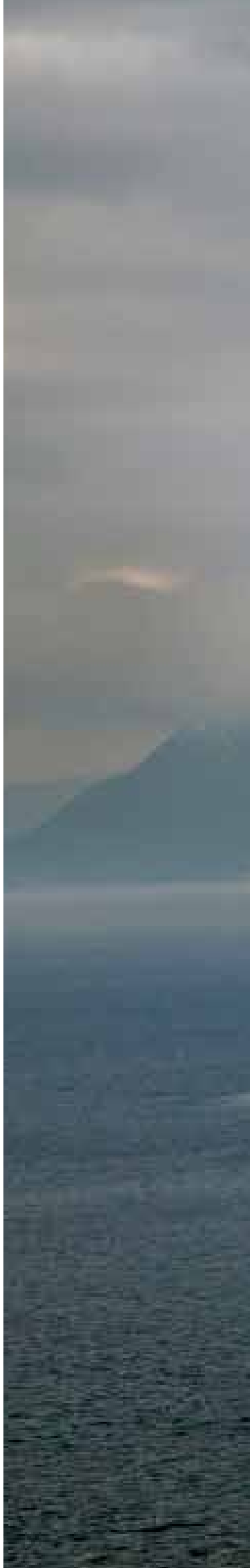
Meanwhile, the skills and expertise of BPS remained in strong demand as a new BP Group Marine Standard was adopted in 2010, which defined BPS roles and responsibilities in marine matters – and mandated all BP businesses to recognise and comply with its terms. The requests for marine support could not be more diverse. One moment BPS might be devising emergency response plans for an offshore Libya seismic acquisition survey in the Mediterranean and the next being called on to inspect a pleasure boat for use by the visiting Vietnamese prime minister!

In the Norwegian North Sea, BPS worked with BP Exploration and the contracting teams on the development of the Skarv FPSO. In the UK North Sea, BPS staff contributed to a project to upgrade BP's regional support vessels to dynamic positioning capability. In Angola, unlike the new-build floating, production, storage and offloading vessel prepared for Greater Plutonio and launched in 2007, the Pluto, Saturn, Venus and Mars (PSVM) field development required a very large crude carrier (VLCC) vessel to be converted into an FPSO. This would then be moved to the fields concerned and connected by subsurface umbilicals, risers and flowlines to manifolds on the seabed and linked to the subsea production system. It involved transforming *M/V Bourgogne*, a one-off Spanish-built oil tanker previously owned by EuroNav, with a notional on board capacity of two million barrels. BP Shipping chartering played a key role in selecting and purchasing the vessel, and vetting and technical teams assessed her and provided input into the conversion design. Some $20 million was estimated to have been saved by using BPS expertise, rather than relying on conversion contractors. She became operational in 2012.

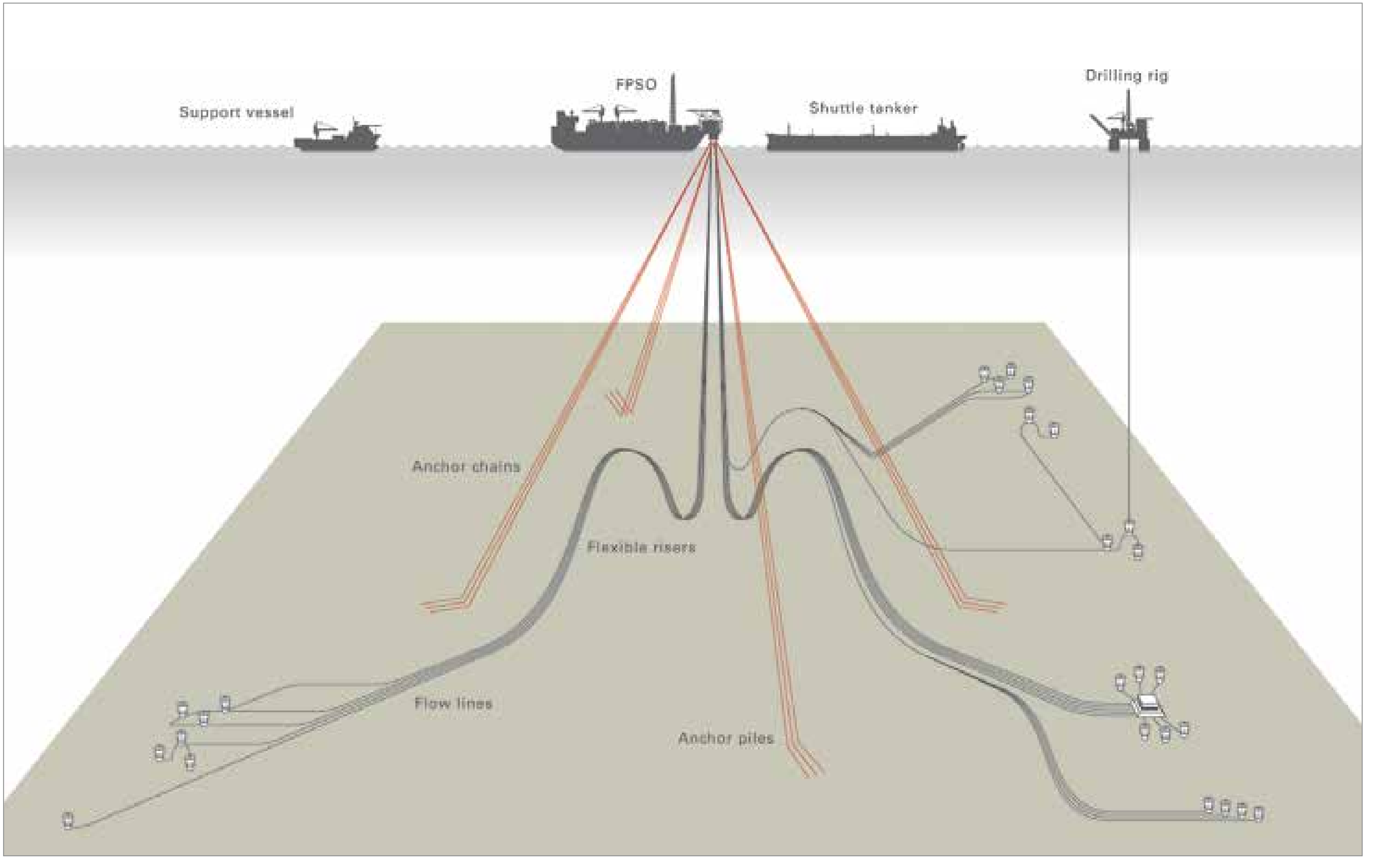
BP's Upstream division wasn't the only customer. The refining and marketing division sought help to scope out new locations for storage and bunkering ports, and for a refinery project in Canada. At the Texas City refinery, BPS became involved in the xylene upgrade project, and in Europe, developed procedures for BP's Rotterdam refinery to direct ship-to-barge cargo operations.

In 2011, BP published for the first time it's projections for how the world of energy might look 20 years hence. BP *Energy Outlook 2030*

Opposite: The Skarv floating production, storage and offloading vessel on tow by tugs in a fjord, in Norway.



Floating production, storage and offloading (FPSO) vessel system



A floating production, storage and offloading (FPSO) vessel is used for the production, processing of oil and gas, and storage of oil. The stored oil is transferred to an oil tanker for transport to shore-based systems. FPSOs are often preferred for oilfield development in frontier, deepwater offshore regions, as they are easy to install and do not require a local pipeline infrastructure to export oil.

CENTENARY INSIGHT

During 2012, BP Shipping – with more than 50 vessels of some five million dwt under its direct ownership or control and a similar tonnage under charter – oversaw the safe transportation of nearly 180 million tonnes of hydrocarbons by sea. These were volumes 30% greater than those carried in the peak years of the early-1970s.

Page 154: BP's Pluto, Saturn, Venus and Mars (PSVM) FPSO facility sits in 2,000 metres of ocean northwest of Luanda, Angola. It was the first ultra-deepwater development in the continent of Africa.

painted a picture of a global economy still heavily dependent on oil and gas and where demand and supply would remain tightly matched. According to the report's analysis, demand would increase by up to 40% over the next two decades. BP's chief executive officer, Bob Dudley, likened that to: "adding another China and another US to the existing world energy use in only 18 years."

Some 96% of demand growth was projected to come from the emerging economies – half from China and India alone – and "whether we like it or not, fossil fuels will still be providing most of the world's energy in 2030 – whatever the total volume of consumption." While the analysis acknowledged that "renewables will grow more than any single fossil fuel", it recognised that "they start from a low base of around 1.8% – and are only expected to account for around 6% of energy by 2030."

Oil would still provide roughly 87% of transport fuel and while the efficiency of internal combustion engines was projected to double, the report anticipated that demand for oil would add up to a requirement for an additional six million barrels per day by 2030. Dudley put it bluntly: "To satisfy this demand, we will have to both ramp up recovery rates and go to new frontiers."

As BP disposed of older oil and gas-producing assets, new opportunities were seized in India, China, Australia and Brazil. In more mature provinces such as the North Sea, major capital investment programmes were announced. BP had even returned to Iraq to work on revitalising fields where production had declined.

During 2012, BP Shipping – with more than 50 vessels of some five million dwt under its direct ownership or control and a similar tonnage under charter – oversaw the safe transportation of nearly 180 million tonnes of hydrocarbons by sea. These were volumes 30% greater than those carried in the peak years of the early-1970s. Around 40% of these cargoes were carried by owned and time-chartered vessels with nearly 5,000 voyages completed.

2012 also marked the year when plans for the rejuvenation of the fleet were put in place – plans that would enable BP Shipping to sail with confidence into its second century. In contrast to the 90:10% owned vs chartered strategy of the early fleet, this time, BP Shipping adopted a 20:80% approach. The company calculated that acting as owner/operator for some of its marine requirements gave it valuable advantages in terms of commercial flexibility, environmental standards and enhanced safety control. Most importantly, it would allow BPS to define, design and order a set of ships that met the highest standards and requirements, which it could use as a standard to apply when chartering other companies' ships. According to John Ridgway: "We undertake 20% ourselves in order to have some security of supply, to organically grow talent, to set standards, and for commercial flexibility. You need to be a very good operator to run a non-operated business. Having our own operation allows us to make an informed judgement of what 'good' looks like for the remaining 80% that we source from the international markets."

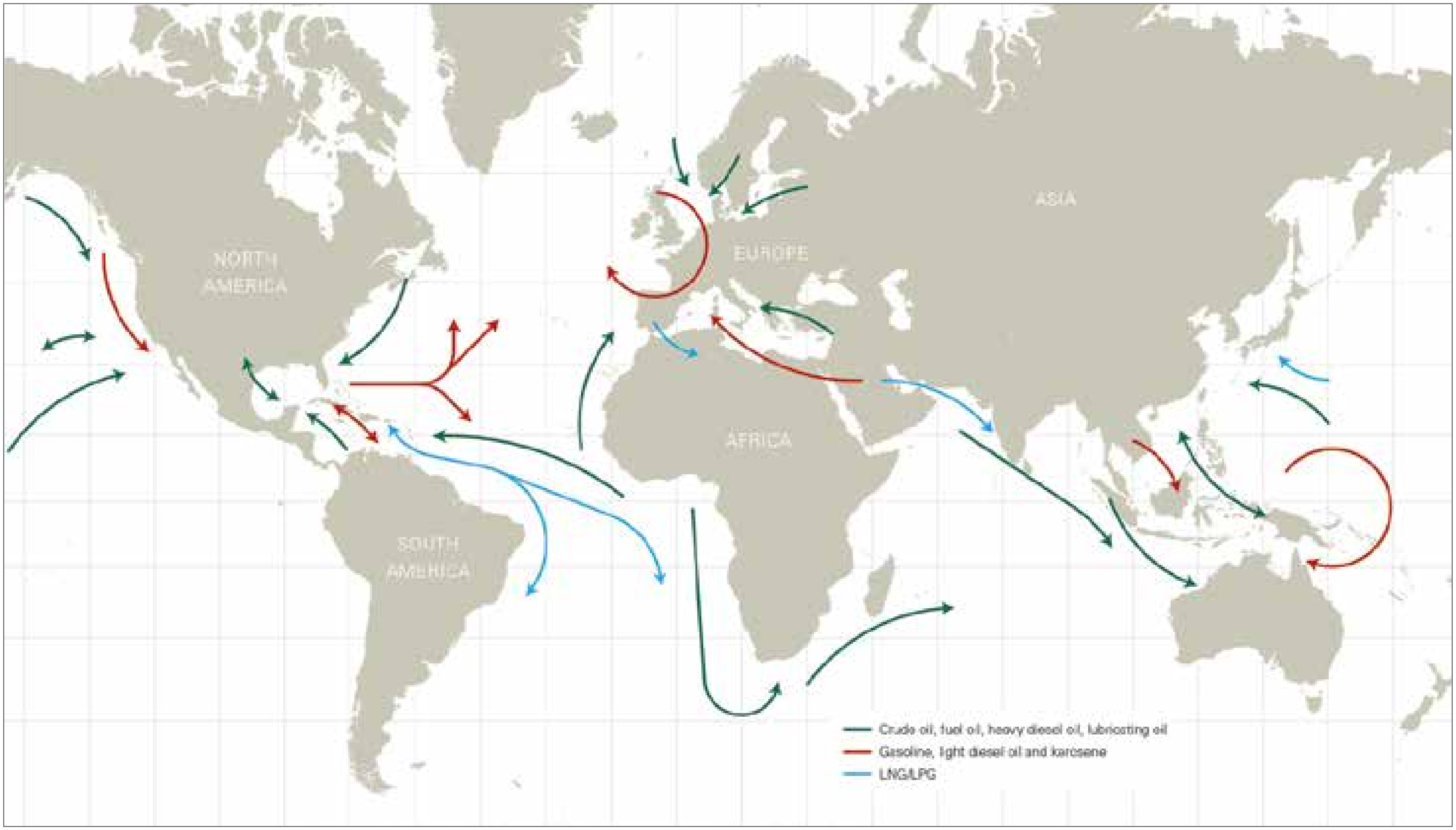
Three new-build projects – Project Ghost, Project Neptune and Project Triton – were set in train in 2012. Ghost involved a 'commission' from BP Exploration's North Sea region to design and construct four new platform support vessels (PSVs) for delivery in 2014. While very different from tankers and LNG carriers, small did not mean simple due to the many systems integrated into such specialised vessels. The vessels were equipped with special tanks to carry fluids required for planned enhanced oil recovery (EOR) schemes – a critical feature of BP's development programme for the North Sea region.

It was the first time that the shipbuilder Hyundai Mipo Dockyard (HMD) in Ulsan, South Korea, had built such a vessel and the challenge created a close relationship between BP and the yard in developing a successful project. BPS reached further than ever before into the supply chain that served the yard. Health, safety, security and environmental (HSSE) assessments were undertaken before sending BPS engineers to the supplier manufacturing sites. Strict factory-acceptance testing protocols involved working with some suppliers for the first time and allowed the company to exert a high degree of positive influence in the shipbuilding and supplier community serving the project. It was to set a standard that would be applied to the renewal of the deepsea fleet in Neptune and Triton.


FPSO PSVM


IMO 9657624
NS ELIDA

Regional tanker movement 2014



Opposite: *NS Elida* – 4,500 dwt – one of four North Sea platform support vessels launched in 2014 from the Hyundai Mipo yard in Ulsan, South Korea.

CENTENARY INSIGHT

2012 also marked the year when plans for the rejuvenation of the fleet were put in place – plans that would enable BP Shipping to sail with confidence into its second century.

In December 2012, BP Shipping announced Project Triton by placing an order with the same South Korean yard – HMD – for 14 new medium-range (MR) product tankers. The order comprised nine Handymax product tankers of 50,000 dwt and five Handysize tankers of 40,000 dwt – with options for further vessels. The vessels were specified to meet or exceed product tanker standards in waste handling, ballast water treatment and fuel efficiency as well as develop new design features that addressed the growing threat of piracy to merchant fleets.

Later the same month, Project Neptune saw the signing of contracts with STX Offshore and Shipbuilding Co Ltd (STX) in South Korea, for four 160,000 dwt Suezmax tankers and ten 110,000 dwt Aframax tankers, with options for additional vessels. The vessels were to be "the most technically and environmentally advanced that BP Shipping has ever operated" and were estimated to be 25% more efficient than the ships they would replace in 2016.

For Neptune's technical manager, Ernie Bird, the brief involved: "making sure that our ships can go where the chartering team needs them to go, carry the right cargoes at the right speed, and ensure that they can be operated safely and are appealing to ship staff.

To do this, the project team reached out to seafarers, ship operators and the chartering teams to develop the specification. The Neptune ships would have the very latest in fuel efficiency technology, with BP Shipping going above and beyond the current regulatory requirements.

Going 'above and beyond' had been a hallmark of the company's approach across the years. As the 25th anniversary of the Exxon Valdez accident approached, BP Shipping put its fleet to the test by entering the US Chamber of Shipping Awards for the first time. In 2013,

Above: A new generation of BPS ships is being prepared in the ship yards of South Korea. They will represent a second century of 'riding the waves'.

39 BP operated vessels were recognised – more than any other major oil carrier. The following year, 34 operated vessels received the Chamber's Jones F Devlin award for safety performance. It was an outstanding endorsement of BP Shipping and its operations in the modern era. Testing its own capabilities to respond to an emergency and guarding against complacency had also been features of the company's approach for many years. Now it formed a key part of ensuring the company continued to hold a license to operate. In 2013, a major exercise was conducted in California alongside the Alaska Tanker Company (ATC) – the jointly owned business charged with operating four tankers for transporting BP's crude oil from the Alaskan Valdez terminal. The fictitious drill scenario was based on a collision at sea resulting in significant structural damage to a vessel and a large release of crude oil and a fire. The planning and execution of the drill brought in members from across seven organizations including members of local, state and federal agencies. The drill was led by a Unified Command and involved a number of teams, all of which were staffed by BP employees working alongside agency partners. One hundred and fifty BP employees participated in the drill, along with 100 government officials and 83 BP Mutual Response Team (MRT) members. It was an international effort with participants involved from the United States, Angola, China, Trinidad and Tobago, the United Kingdom and Egypt.

Industry involvement and leadership was evident in other forms. The annual BP Shipping CEO Forum and HSSE Awards had been established as a forum where BPS could interact and co-operate with the owners and operators of its 100 or so chartered ships. Recognising and rewarding outstanding behaviour and performance allowed a two-way flow of innovation and continuous improvement. John Ridgway had become chair of the Oil Companies International Marine Forum (OCIMF), continuing the work of that organisation in raising industry standards. OCIMF had created the highly successful industry ship vetting system – SIRE – 20 years earlier but complacency was still a concern. In 2014, BP Shipping declared at an industry conference that it was rejecting an average 50% of the ships that it vetted against its high standards for the purposes of chartering to carry BP cargoes. It was a warning of the need for industry-wide vigilance and the very highest standards.

Entering its 100th year, BP Shipping was unrecognisable from the greatly diminished company of the 1980s. Its role within the BP Group was now well defined, its strategy endorsed at the highest level and it had returned to its position as an important force for good within the wider shipping industry. For John Ridgway – whose service at sea and ashore spanned this tumultuous period – it represented "a fantastic renaissance story". More than 50 top class vessels now comprised BP's owned and operated fleet and they represented the largest dwt capacity in the company's long history. The volumes of crude oil, products and gas being carried around the world approached the peak levels achieved 45 years earlier. And such was the scope of the operational and commercial activity being pursued by the company, 11 offices around the world were charged with conducting the shore side business with London, Houston, and Singapore providing hubs for this activity.

BP Shipping operated against a set of comprehensive policies and procedures reflecting a systematic approach to the multiple new challenges and regulations of transporting oil and gas by sea in the 21st century. And a new generation of highly trained, increasingly diverse staff was at work at sea and ashore with approaching 100 cadets entering BPS service each year and highly experienced staff seconded to support other parts of BP in their marine challenges. 'Raising the Flag Together' in the pursuit of clean seas, safe ships and commercial success provided a consistent rallying call for the 'one team' approach which informed much of BPS messaging and desired behaviours. It both resonated with and distinguished the modern shipping arm of BP in its centenary year.

One important final step heralded the beginning of BP Shipping's centenary year. On December 12th 2014, the third part of the fleet rejuvenation programme – Project Delphi – was announced by John Ridgway. An order for six Liquefied Natural Gas (LNG) carriers of 173,400 cubic metre capacity was placed with Daewoo Shipbuilding & Marine Engineering (DSME) in South Korea. The vessels would be sized to operate, if required, through the newly enlarged Panama Canal and would incorporate the latest energy efficiency technologies and cargo handling systems and be powered by electronically controlled gas injection engines. The ships would be delivered in 2018 and 2019.

Project Delphi brought the total number of new vessels under order to 34 with delivery planned over a four to five year period – an average delivery rate of one ship launch every 6 weeks. This was reminiscent of the great periods of ship ordering and building undertaken by British Tanker Company in the 1920s, BP Tanker Company in the 1950s and BP Shipping in the early 2000s.

As the steel was cut on a new generation of ships in the yards of South Korea, this "most modern oldest company in the world" could draw upon the traditions, experience and values built up over 100 years. The new vessels would be 'state of the art' ships – but they also represented the same enduring principles on which the success of a second century would be built.

TIMELINE

1980-2015

1980-1985

BP Tanker Company is renamed BP Shipping

Staff redundancies and fleet sales with *British Patience* sold for scrap at just eight years old

The Falklands Conflict

Launch of the S class segregated ballast tankers

1986-1989

Agency manning for seafaring staff is introduced

BPS diversifies into offshore and related marine business services

The revolutionary oil production vessel *Seillean* is launched

Exxon Valdez grounds in Prince William Sound, Alaska

1990-1997

British Trent is struck by *Western Winner* off the Belgian coast

BP Maritime Services is established 1997 in Bermuda

New vessels are added to the fleet, including its first double-hull – 210,000 dwt *British Valour*

BPS assumes marine assurance role for the BP group

BP becomes a 'supermajor' through mergers and acqusitions

2000-2004

$3 billion ship-ordering programme is approved by the BP board

Owned/managed fleet grows to more than 50 vessels

BPS and IST jointly develop new commercial opportunities in freight swaps

'Flying the Flag' is introduced

2005-2010

Launch of FPSO vessels for Angola and Norway deepwater fields

Group Marine Standard is agreed

BP Maritime Services, Singapore (BPMSS) is established as the legal employer of all BP Shipping's officers

Deepwater Horizon accident in the Gulf of Mexico

Global fleet is simplified under two regions – West and East

2011-2015

Transport of 180 million tonnes of crude and products overseen by BPS

34 new vessels are ordered as part of the Neptune, Triton and Delphi fleet renewal projects

BPS-operated vessels receive the US Chamber of Shipping's Jones F Devlin Award for safety performance

Summary

BP Shipping

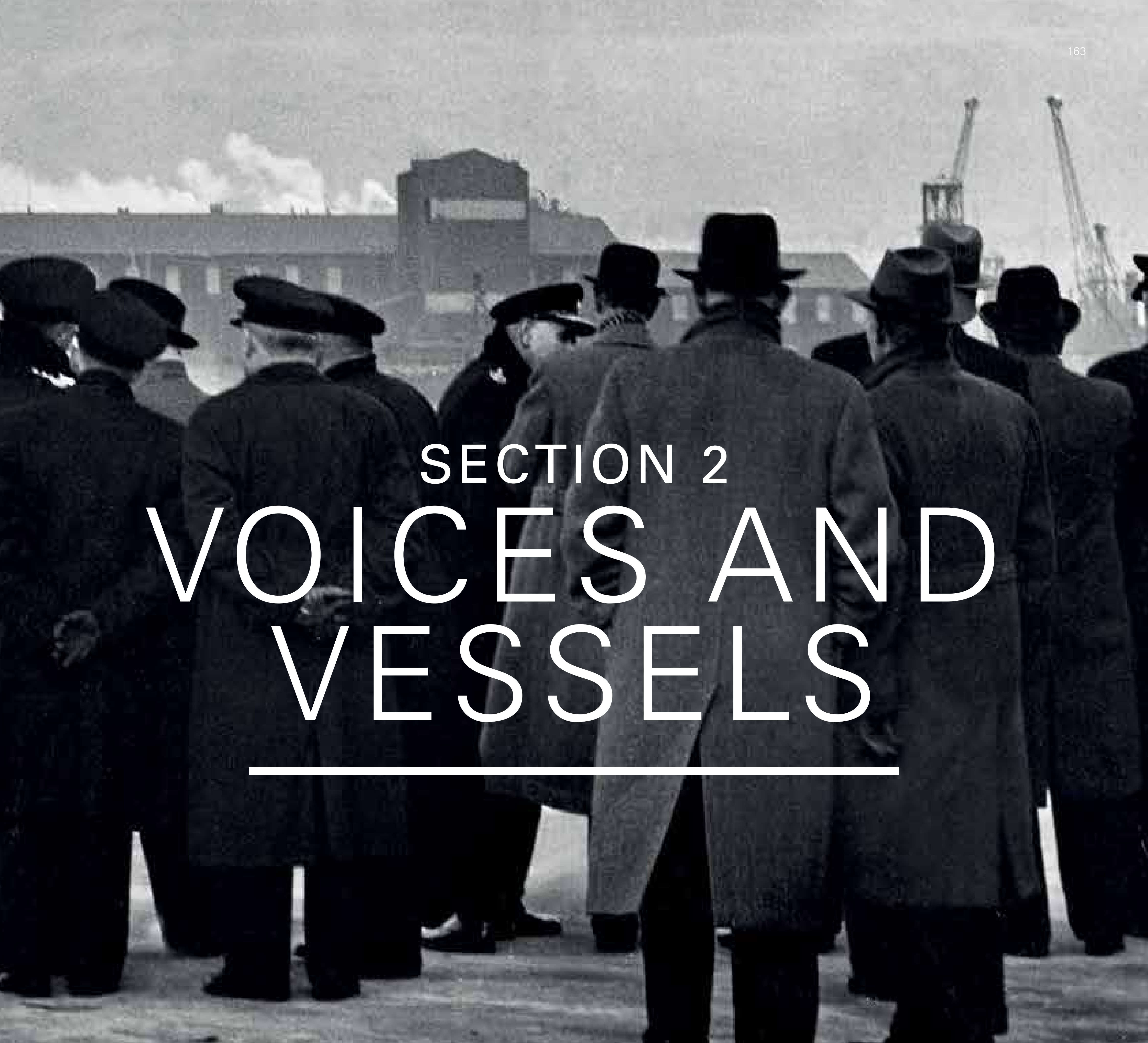
1980-2015

For the best part of 70 years, BP had successfully pursued an integrated oil company business model in which its shipping arm was a keystone – bridging and locking the upstream and downstream businesses together. Securing an outlet for the company's considerable upstream production was the principal raison d'etre for developing a downstream and shipping activity. Indeed, refineries and ships involved large sums of capital on which returns were modest by comparison with upstream opportunities. Yet, for the first time in its history, BP Shipping found it was no longer considered a vital cog in the BP machine. Deeply exposed and caught between a new BP world of 'profit centres' and the low-cost competition of 'flag of convenience' operators, its dramatic move to agency manning was a radical step in its efforts to survive.

Two events at sea and one ashore were to change matters. First, *Exxon Valdez* and *British Trent*, and then the transformation of BP by merger and acquisitions into an oil and gas 'supermajor'. The magnitude of the environmental impact and political and regulatory fallout of *Exxon Valdez* was matched by the deep, personal impact of *British Trent* on BP Shipping and its parent company. It was an important reminder that BP Shipping was actually in the business of risk management – and not simply the transporting of cargoes of oil and products for profit. It would need to lead by example in a radically changing industry in which BP – no longer the 'two-pipeline company' – was an order of magnitude larger.

The BP that entered the 21st Century presented its management with a wealth of new opportunities and faced a host of new risks. Among those was greater regulation of the transportation of oil and gas by sea and the increasingly complex marine aspects of 'frontier' oil and gas exploration in deeper waters. These changes brought an affirmation that BP Shipping's marine skills had a vital and unique role to play in both risk management and marine assurance for the BP group of companies.

BP's shipping arm had faced and successfully adapted to many great challenges across its century of activity – but none so threatening to its very existence as those it encountered as it passed its 75th anniversary. Returned to the heart of an integrated and vastly expanded, post-merger BP, it was invested with a level of funds and managerial discretion to secure its renaissance in its 10th decade. It seized the opportunity with both hands.



SECTION 2
VOICES AND VESSELS

4 COURAGE AND SERVICE

Dedication and sacrifice

While crossing the world's oceans has always involved an element of risk, the 20th century proved to be a particularly dangerous period for merchant seamen. Two world wars and a variety of regional conflicts saw merchant vessels explicitly targeted, with a growing recognition of the importance of cutting an enemy's supply lines as a sure way to win a war. Yet, throughout the past century, the crews of BP's shipping arm, have continued to move oil products around the world, despite the considerable risks they have often faced in the line of duty.

Tanker crews have encountered many different challenges, sometimes relating to global conflict and at other times to political instability and economic uncertainty. But alongside these variables, there have also been constants: the inherent perils of being at sea; the need to go to the aid of those in distress at a moment's notice; and the selfless act of putting oneself in the line of danger in order to help others who have required assistance at sea.

While the Merchant Navy is sometimes overlooked when heroism and courage at sea are mentioned, this chapter highlights the selfless behaviour of the company's seafarers, not only during wartime, but, also in routine service. It is thanks to this quiet, understated commitment to service that BP Shipping has been able to support the BP group as it has adapted to its ever-changing commercial environment, as well as playing a pivotal role in supporting the British nation and her allies during their most challenging moments.

Until World War 1, the Hague Convention, which stated that a merchant ship could only be sunk after she had been stopped and her crew removed to a place of safety, had been largely honoured. Things changed when U-boats entered the scene and there was no longer space in which to take prisoners or survivors; on top of that, merchant ships were being increasingly used to carry arms and so were considered legitimate targets. The Hague Convention was soon flouted and as attacks on the British naval blockade of Germany intensified, so the loss of life among merchant seamen increased.

The decision in 1914 not to escort British merchant ships in convoys brought Britain close to losing the war at sea, such was the loss of merchant ships, seamen and their cargoes – especially grain. The introduction of convoys – along with the effective requisitioning of the entire merchant fleet in the summer of 1917 – transformed Britain's position.

There were five torpedo attacks on the fleet of the newly-formed British Tanker Company (BTC), with two ships and 18 lives lost as a result. *British Viscount* was the first BTC loss, sunk off the Skerries on 23rd February 1918 while requisitioned to make a coastal voyage from Liverpool to Queenstown. Six of the crew lost their lives. On 4th March, *British Princess* was torpedoed off the coast of Northern Ireland. John Straughan, the Third Engineer on board, recalled the white streak of the torpedo before it struck the amidships pump room, killing a Chinese crewman. Later that same month, *British Star* was leaving the River Tyne in England on her maiden voyage when she too was struck by a torpedo. Particularly tragic was the loss of *Eupion* – sunk a matter of weeks before Armistice Day in 1918. She had already narrowly escaped a double torpedo attack earlier in the year, but on 3rd October, her luck ran out when she was sunk by U-boat *U123*, 10 miles west of Loop Head, County Clare at the mouth of the River Shannon in Ireland. Eleven crew members from England, Ireland, Canada, Spain, Mexico and the Netherlands perished. *Eupion* had not yet received the 'British' prefix, as it was on Ministry service and was due to be handed to BTC at the end of the war.

While the rapid building programme established by BP's chairman Charles Greenway, ensured that the overall fleet grew stronger in the immediate post-war years, the losses of *Eupion* and *British Viscount* were a powerful early lesson of the vulnerability of a tanker and its crew at sea.

Page 165: A Royal Navy Sea King helicopter embarks some of the 271 survivors of *HMS Sheffield* onto *British Esk* during the Falklands Campaign, May 1982.

Left: The uniform livery of the British Tanker Company. During WW1, a Captain Fryatt, Master of a railway steamer, rammed and sank a German submarine. Captured at a later date by the Germans, Fryatt was shot because he was considered to be a 'civilian', wearing a company livery and not a service uniform when he attacked a German military vessel. With the intention that in the event of another war, the merchant service should automatically become one of the services, an Order in Council was promulgated in 1918 to prescribe a standard merchant service uniform. In 1922, in recognition of the service rendered during the war by merchant seamen, King George V conferred honour and status on the merchant service by providing it with the title 'Merchant Navy'.

Courthorpe Carrington was Chief Steward on *British Petrol* in June 1940, when she was sunk and the officers and crew captured by a German raider. Carrington died of his wounds and was buried at sea with an address given at the burial service by German Naval Commander Von Henrick Huckensheill. Carrington's cousin, Edwin Ridd, was also on board as a cook and returned Carrington's possessions, including the eulogy transcribed into his war diary, to his widow after he was liberated from the prison camp. The eulogy was donated to the BP Archive at the University of Warwick by Edwin Ridd's family.

3

BURIAL SERVICE OF MR. C. CARRINGTON: CHIEF STEWARD OF M.V. BRITISH PETROL. WHO DIED OF HIS WOUNDS ON BOARD THE GERMAN RAIDER AT SEA ON JUNE 14 1940. THE SERVICE WAS CONDUCTED BY THE GERMAN COMMANDER.

English and German sailors – Comrades!

This morning we are standing in front of the mortal frame of a human being, whom death has taken from us. The fate which makes people stand up against each other nowadays, tormenting & wounding has not its cause in this ruling, and ruining ourselves, but that we should awaken by this to search & find the good sides in ourselves. Around us the open sea is stretching, intimate to us all, above us the eternal sky is vaulting, with the sun in the daytime and the stars at night, they are circling following the laws of God, giving to the waters their movement. Following the same divine laws, the souls are coming down from Heaven in order to fulfil here on Earth, their fate as human beings.

Similar to the caterpillar in its changing cover which must fade away in order to give birth to a beautifully coloured butterfly, also our mortal frame is fading away, but out of it the soul emerges, as a sun bird, freed up to its Creator, in order to collect there, new power for another coming down to Earth, until Mankind will know how to live in perfect peace under the Sun. We will escort with friendliness and loving prayer, the freed soul of our comrade and we will ask it to send us help, from over there, from the Empire of the Sun, that as peace loving human beings might learn to live in peace with each other

Yes it must be like that.

NOTE: THE ABOVE IS AN EXACT COPY IN WORDING, SPELLING, + PUNCTUATION.

World War 2

Historians often refer to the early days of the Second World War as 'the phoney war', but for the Merchant Navy, the reality was rather different. Within nine hours of Chamberlain's declaration on 3rd September 1939, the passenger vessel *SS Athenia* had been torpedoed and sunk by a German U-boat, killing 118 passengers.

In fact, for the merchant fleet, the perils of war in Europe started well before the declaration of hostilities. By the mid-1930s, passage through the Mediterranean was becoming increasingly dangerous, with war raging between Italy and Abyssinia, followed by the outbreak of the Spanish Civil War. Even as a neutral party, British ships were not guaranteed safe passage. In September 1936, *British Endeavour* was bombed and machine-gunned off the Spanish coast, thankfully with no resulting injuries, while *British Corporal* was attacked by three aircraft near Gibraltar the following year, also escaping without damage. Other oil companies did suffer, and it was the good fortune of the Anglo-American tanker *George McKnight* that *British Commodore* was nearby when it was bombed and set alight off the Tunisian coast. The BTC crew was able to salvage the stricken ship and rescue its crew.

British Influence was sunk on 14th September 1939, the first BTC loss of the war. In what would be a rare moment of gentlemanly conduct in a war where international wartime conventions were quickly discarded, the commander of *U29*, Otto Schuhart, gave Captain H. L. McMichael and his crew ample time to evacuate *British Influence* before torpedoing the vessel. Schuhart even kept his U-boat at the scene until the crew's rescue was assured. Such care for the welfare of seamen would prove increasingly rare; those from either side who may have wished to help others fleeing their stricken vessels were deterred from doing so by fear of attack or by lack of space in which to take prisoners. Few got away as lightly as the crew of *British Influence*.

And just as merchant shipping was among the first to be targeted at the start of hostilities, so it would be that at the end of war too, the final enemy action was a deadly torpedo attack against British and Norwegian commercial ships in the Firth of Forth, precisely one hour before midnight and the formal German surrender.

From the outset, the German military commanders knew that control of the seas was critical to their overall success. Pivotal to this was the ability to blockade the UK and choke the supplies of oil and other essential goods. For the British Government, the importance of maintaining a reliable supply line to the UK could not be overstated.

The convoy system of protecting ships by travelling together had not won universal favour among military tacticians when it was deployed in the latter stages of World War 1, but it was swiftly reintroduced in September 1939. On the one hand, the convoys provided the opportunity for the accompanying escort group to best defend against any enemy threats that might have become apparent. On the other hand, a large, slow-moving procession presented an easy target for a U-boat commander and the Luftwaffe.

British Cavalier was originally launched as *Empire Cavalier* in 1942 for the Ministry of War Transport. She was fitted with a dummy funnel in the middle of the vessel to disguise that she was a tanker – and a very attractive target for U-boats. She was managed by BTC for part of the war and purchased in 1945, with the dummy funnel retained for some time afterwards. Later images show her with a single funnel aft – up to her scrapping in 1959.

World War 2 tanker fleet casualties

Key to casualty chart

Vessel	Reference	Date
British Influence	1	14.09.39
British Liberty	2	06.01.40
British Councillor	3	02.02.40
British Triumph	4	12.02.40
British Endeavour	5	21.02.40
British Inventor	6	13.06.40
British Petrol	7	13.06.40
British Corporal	8	05.07.40
British Fame	9	12.08.40
British Commander	10	27.08.40
British General	11	06.10.40
British Officer	12	01.12.40
British Premier	13	24.12.40
British Union	14	18.01.41
British Advocate	15	19.02.41
British Gunner	16	24.02.41
British Strength	19	15.03.41
British Reliance	17	02.04.41
British Viscount	18	03.04.41
British Science	20	18.04.41
British Emperor	21	07.05.41
British Security	23	20.05.41
British Grenadier	22	22.05.41
British Mariner	24	20.10.41
British Fortune	25	31.10.41
British Captain	26	01.12.41
British Motorist	27	19.02.42
British Resource	28	14.03.42
British Prudence	29	23.03.42
British Splendour	30	07.04.42
British Sergeant	31	09.04.42
British Workman	32	03.05.42
British Colony	33	13.05.42
British Loyalty	34	30.05.42
British Yeoman	35	14.07.42
British Consul	36	19.08.42
British Vigilance	37	03.01.43
British Dominion	38	10.01.43
British Freedom	44	14.01.43
British Chivalry	43	22.02.43
British Ardour	39	05.04.43
British Trust	40	01.05.43
British Venture	41	24.06.43
British Progress	42	04.11.43

BTC managed vessel casualties

Vessel	Reference	Date
Empire Gem	45	24.01.42
Melpomene	46	05.03.42
Empire Corporal	47	14.08.42
Empire Metal	48	02.01.43
Oltenia	49	08.01.43
Josefina Thorden	50	06.04.43

David Ghilchik, *Daily Sketch*, 05 Feb 1943. British Cartoon Archive

The period between 1940 and 1942 became known as 'the happy time' by the German Navy, as it inflicted large losses on the Allies' merchant marine. By 1943, the tide had turned, as improved technology, intelligence and the Coastal (air) Command began to defeat the U-boats and Luftwaffe. This was depicted in the cartoons of the time, as shown above in the example by David Ghilchik, published in the UK's *Daily Sketch* newspaper in February 1943.

A US merchant ship founders under the watchful eye of the crew of a German U-boat.

Getty

Initially, convoys were used to protect merchant ships as they entered the Western Approaches to British waters; by 1941, they were expanded beyond 20 degrees west to include the trans-Atlantic route all the way to Halifax, in Nova Scotia, with American and Canadian naval forces offering support on the western side of the ocean.

Captain Stuart Allen, who served on *British Patience* in both Atlantic and Arctic Convoys, recalls how the ships would judge their relative positions within the convoy. "I remember the spacing of the convoys. It was three cables astern and five cables apart. We used to carry a little prism to judge the distance and we'd line it up with the ship mast in front. Depending on whether it was up or down, we could tell what the distance was. Originally, we had to use a sextant, but then they brought out this small prism."

Convoys were attacked on a regular basis, particularly during the early years of the war, when Allied shipping losses were at their most severe. After the invasion of France and Norway in the first part of 1940, Germany had acquired the capability to launch attacks farther into the Atlantic, both by air and by sea. The U-boats enjoyed undoubted superiority during this period, a time which the German submariners referred to as 'the happy time'. It was anything but happy for Allied shipping, with horrific losses suffered by both commercial and military vessels, especially in the area to the northwest of Ireland, where ships would leave the shelter of the British Isles and enter the open waters of the Atlantic.

While merchant ships were heavily dependent on their escorts for protection, most ships were also equipped with their own guns and crew trained in the use of these weapons, although they provided minimal protection against a determined air attack or a U-boat with an armed torpedo in its payload. By February 1940, 82 of the

BTC fleet's 89 ships had guns of some kind; 29 of these were low-angle guns that could not be used against air attacks, although these were gradually upgraded during 1940.

The introduction of 20mm automatic cannons greatly increased the defensive capability of tankers, with the Oerlikon and Bofors guns able to fire explosive shells against attacking aircraft. These guns were released by the Royal Navy from 1941 and by the end of 1942 they were fitted to most BTC ships, with some tankers having as many as six on board.

George King – then serving on a Blue Funnel tanker and having recently completed gun training on *HMS Eaglet* – recalls an exchange with a U-boat: "I knew the sight-setting drill, and for the next hour or so, I had plenty of real-life practice. Once the terror of realising that those bastards out there were serious had passed, it was surprising how quickly the gun's crew settled into exchanging fire. I felt perfectly safe on the left-hand side of the gun, both hands outstretched on the two circular sight-setting scales with 'Widd' on my right, hunched against his padded shoulder-rest, eye to telescope, hand to trigger. Even the crash of the gun became near-acceptable and I was fascinated by the swift, straight recoil of the barrel just above my knuckles as the blast and flash from the muzzle engulfed us in acrid fumes. Salomons, standing to one side with binoculars glued to his eyes, was a confident and steadying influence. Once he thought we had scored a hit, but it was probably just a close splash – enough, however, to keep the U-boat out of his gun's maximum range."

Merchant shipping losses mounted steadily throughout 1941 and 1942 and for the men serving on the North Atlantic Convoys it was a nervewracking time, not knowing at any moment whether there was an enemy vessel with its sights trained on them. The crew continued to go about their duties, maintaining a business as normal approach as much as the situation allowed. As Stuart Allen recalled: "We just assumed we were going to be unlucky if we were attacked. We couldn't let it get us down; we just accepted it happened. What could we do? If we were attacked, we'd deal with it when it came."

While the defensive capability of tankers to withstand enemy attack was limited, there were occasions when the bravery and competence of the crew did thwart enemy attacks and almost certainly saved many lives. *British Valour* under the command of Captain J. W. Ross, was attacked by a submarine while sailing in an unescorted convoy. The gunner on board *British Valour* opened fire on the submarine, which immediately dived, resurfacing a short while later only to come under fire again, with reports of a bright orange flash indicating a direct hit. The submarine was not seen again.

In a similar unrelated incident, G. R. Mackillican of *British Workman* fought bravely against an enemy aircraft that was attacking his ship. Manning the Hotchkiss machine gun, Mackillican almost certainly scored a direct hit on his attacker, which left the scene with smoke pouring from the nose of the aircraft and without having inflicted any damage to the ship.

Both Captain Ross and Mr Mackillican each received an engraved gold cigarette case at a luncheon given by the British Tanker Company in their honour on 8th September 1941. Captain Ross was commended "for his skill in organising and directing the defence of his ship as a result of which an enemy submarine attack was frustrated", and Mr Mackillican for "his bravery and devotion to duty, which resulted in the failure of an enemy bomber attack upon his ship and led to destruction of the aeroplane."

With the ever-present dangers of a U-boat attack and the slim chances of survival when a ship was destroyed by a torpedo, being captured alive and taken prisoner might have seemed like a lucky escape. Certainly, those on board *British Advocate* were fortunate to survive when their ship was captured on its way to Abadan from Swansea. The entire crew was taken prisoner on board the German battleship *Scheer* on 19th February 1941. Having spent several weeks at sea in captivity and then further time in a grim Bordeaux jail, the men were then put on a train bound for Germany and a POW camp near the city of Hamburg.

Able seaman W. J. Evans was determined to avoid spending the rest of the war in a German prison and before light on the fourth morning, he crawled out of the window in his compartment and stood on the footboard of the carriage until the train stopped four hours later. He lay on the ground between the tracks as the train pulled away above him and then somehow negotiated his way through Germany into Belgium and France without getting stopped. He was assisted by friendly locals and helped on his way to Marseille. From there, he travelled to the Spanish border, where he was apprehended and put into a series of Spanish concentration camps, before finally securing the assistance of the British Embassy in Madrid. He found his way to the safety of Gibraltar, where he was given homeward passage to Liverpool, arriving back in Britain on 11th October 1941. While his story is one of great courage in escaping capture and surviving incredible hardship, Evans reported his adventure to a BTC superintendent in an understated way, saying merely, "I took a chance and it came off."

Even more remarkable is that a month after seaman Evans's escape from captivity, another BTC able seaman, John Dawson, had a similar escape after his ship, *British Strength*, was destroyed and her surviving crew taken prisoner. Together with a prisoner from another company, they jumped from a moving train in France and got away to Spain, eventually making their way to freedom.

Atlantic and Arctic convoys

Atlantic Convoys would typically choose northerly courses, occasionally within sight of Greenland, as the pack ice at these latitudes made it difficult for U-boats to operate in these waters. Iceland was used as a base for aircraft support for the convoys from 1941 and also provided valuable refuelling capability.

Ralph Maybourn recalled his early years at sea, when he made several journeys as a senior apprentice in the Atlantic Convoys. "I spent two-and-a-half years on the North Atlantic run and probably made 15 or 20 round trips in that time. We had equipment for trailing a pipeline over the stern and escorts would come up and refuel when the weather permitted. Otherwise, you went across to the United States, loaded the oil and then joined the next convoy to bring back the fuel to the UK, where it was very desperately needed. I remember the really bad weather and how it was difficult maintaining your position in convoy. If the convoy wasn't attacked, it could be uneventful. If it was attacked it was more eventful, depending on how things developed."

Many ships did experience those 'eventful' moments to which Maybourn refers. *British Ardour* was one of many vessels sunk in the Atlantic Convoys. Her time came in what was probably the last big convoy battle of the war in April 1943, when she was torpedoed forward of the bridge. John Dahl was serving on board *British Ardour* and remembered how the ship became a mass of flames that only began to diminish after 15 minutes or so, as all the fires were put out. It was a lucky escape for the men of *British Ardour* as the corvette *HMS Snowflake* was on hand to pick up the grateful crew.

There was a gap of several thousand square miles where land-based planes couldn't reach and where submarines weren't threatened by aircraft; it was here that the convoys were most vulnerable to attack. In an innovative move designed to provide further defensive capability for the convoys, Merchant Aircraft Carriers (or MAC ships) were produced. These were tankers converted to aircraft carriers by the installation of a large steel deck. They carried up to four Swordfish aircraft (but usually three), capable of taking off and landing on the 460-foot long makeshift runway on the deck of the vessel. The ships flew the red ensign and carried their normal merchant crew along with personnel from the Fleet Air Arm, including pilots, observers, air gunners and a full complement of ground maintenance staff.

Despite having a flight commander, an air crew, a doctor and the flight service crew on board, the Captain remained completely in command as far as the ship's movements were concerned.

Maybourn served on one of the MAC ships and recalled, "We would patrol those areas where the land-based planes couldn't reach and keep the U-boats below the surface if possible. So, we carried about 10,000 tons of oil cargo, but we had three Swordfish aircraft on the flight deck that flew sorties whenever the weather permitted. I even took a flight in a Swordfish once. Before each convoy started from the UK, the aircraft would land and take off from their base a few times and another cadet and I persuaded the Captain to let us go on one of these flights. That was when I flew for the first time and it was very exciting, too, I can tell you."

The work of the pilots in completing antisubmarine duties from the MAC ships was highly successful and their operation coincided with a sharp decline in U-boat attacks. For the tanker crew, having a flight deck on top of a heavy cargo of oil posed obvious safety hazards. On one occasion on *Empire McCabe*, a pilot missed the landing wires and his aircraft came to rest on the tail of one of the other two planes. Within a few minutes, all three planes were in flames and with burning fuel flowing from the flight deck and aircraft rockets firing off in every direction, it was a nervous few moments for everyone on board. Although the aircraft were destroyed, the crewmen were uninjured but badly shaken, and only too aware that the outcome could have been far worse.

In June 1941, Germany invaded the Soviet Union and it fell to the Allied forces to maintain a supply line of oil and other essential goods to the Russians. The Arctic Convoys were established and several BTC ships were involved in the supply of oil from the US across the Arctic Ocean, north of the Norwegian coast and into Northern Russia.

If the risks taken by the men in the North Atlantic Convoys were severe, those faced by the Arctic Convoys were at an even greater level. With the Germans in full control of Norwegian air space, the convoys travelled well within the range of enemy aircraft, a further unwelcome hazard to the constant menace of U-boats. As if the enemy wasn't enough to worry about, there was the extreme weather with which to contend. In the winter, temperatures of -60 degrees Fahrenheit below freezing were recorded on the vessels. Yet ships would prefer to travel through the icy waters in a region where the long winter nights offered the cover of almost constant darkness, choosing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While U-boats were a menace to the convoys, British Tanker Company ships also came under attack from aerial bombardment.

"I remember the really bad weather and how it was difficult maintaining your position in convoy. If the convoy wasn't attacked, it could be uneventful. If it was attacked, it was more eventful, depending on how things developed."

RALPH MAYBOURN

the bitter conditions over the mild summer months, when 24-hour daylight left the convoys dangerously exposed.

The casualty figures for the Arctic Convoys are startling – from a total of 78 convoys to Russia, 85 merchant vessels and 16 Royal Navy warships were destroyed. It is no surprise that these journeys were known by the men involved as 'the suicide missions'. The bulk of casualties occurred in the 1942 convoys; in one particularly disastrous convoy, PQ17, only 14 out of 38 ships made it through an enemy onslaught to deliver their precious cargo to their destination in Russia.

If the conditions at sea were not bad enough, the situation on arrival at the Russian port of Kola was icy in more than just the weather. Commander J. P. Mosse, who was Master of *HMS Mermaid* in convoy JW59 from Loch Ewe to Kola, recalled ruefully: "We lay alongside the naval base for three days and not a single courtesy call was paid. Were we allies or just two nations fighting a common foe?"

By 1943, the Allied forces were gaining the upper hand against the German air and sea forces. With a steady supply of new ships coming on stream, the growing ability to intercept German communications and, most crucially, development in the use of radar and sonar to detect U-boats and coordinate attacks, the number of losses fell dramatically, although there were attacks on convoys reported right up to 1945. While the threat from the enemy gradually lessened, the weather remained a deadly hazard for the Arctic Convoys. It was no surprise to any of the men who had sailed to Russia when Churchill acknowledged the difficulties they had faced, referring to the Arctic Convoys as "the worst journey in the world".

Stuart Allen recalled his experiences on convoy JW60 which departed from Glasgow to Archangel on 15th September 1944.

"From Glasgow, we went round to Loch Ewe to join the convoy, which was made up of around 30 escorts and 30 merchant ships, mainly carrying military equipment, such as tanks, aircraft and munitions. Most were American vessels, with only a few British ships in the convoy. There was always a rescue ship at the rear end of the convoy, with the job of picking up survivors if a ship was torpedoed.

"We had an escort and also picked up *HMS Rodney* and two aircraft carriers: *Campania* and *Striker*. We finished up with an escort of 15 destroyers, several frigates, two corvettes, a sloop and the cruiser *Diadem*. We also had some motor torpedo boats (MTBs) accompany us as far as the Faroes. They were expecting the German battleship *Tirpitz* to come out. Although we had the upper hand by that time, ships were still getting torpedoed.

"We soon encountered a U-boat pack somewhere around the Faroes, but it was chased away by our escort. We went north, to around 76 degrees north, way above Bear Island, before coming back down towards Murmansk. Half the convoy left there and we left from Murmansk and went down

Getty

Left: Swordfish bombers were deployed on board the Merchant Aircraft Carriers (MACs) during WW2.

Opposite: Battling heavy seas in Arctic Convoy JW53 to Russia in February 1943.

to the White Sea with a Russian escort. They spent all night dropping depth charges. It was difficult to pick up submarines because of the density of the water, so they tended to drop depth charges to deter them. In the White Sea, we discharged at Molotovsk. When we were discharging, we observed what I think was a political prison camp. The men had to build up the jetty to lay the pipeline across for us and they were dressed in brown Russian uniforms.

"Then, we went across to Archangel to wait for a convoy and we were there for about three weeks. We used to go into Archangel quite a lot. Later, the Russians stopped everyone from getting off, but we were there at a slack period, when they did let us off. Archangel was a northern Russian town. People were very welcoming. We used to go to the Intourist hotel to get a bit of entertainment. There were Russians in there and I sometimes wonder if they were spies because they were quite open with us. I remember that the Captain was told he could send a message back to the UK to say that we were alright, but it had to go through the Russian authorities. It never got there.

Just before we left, they put on a big do for us; I think it was the Moscow Ballet. At around 4 o'clock in the morning, one of the women from the hotel said to me that we could go back. Of course, there was a curfew on at the time, but she knew quite a few of the Russian police and we were not bothered once. I'm sure she was in the Russian secret service! By the time we left Archangel in October, it was starting to get pretty cold. The sea hadn't iced up yet, but we were getting heavy frost. At Murmansk, we joined a convoy (RA61); there were around 15 German submarines waiting off the Kola Inlet and they got chased by one of our escort group. They did hit one of the frigates, *HMS Mounsey*, with a 'gnat' torpedo, but she managed to return to port.

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LONDON MEDAL COMPANY

The Lloyd's War Medal for Bravery at Sea was instigated in 1940 to honour merchant seafarers who performed acts of exceptional courage. Fourteen Lloyd's medals were awarded to British Tanker Company seafarers during WW2, including a Master, Chief Engineer, Donkeyman and Steward.

"There was a very strong storm around the Faroes, but it didn't scatter our convoy. As we approached the Orkneys, various sections of the escort broke off, presumably to return to Scapa Flow."

The crews of the BTC tanker fleet paid a heavy price during the war, with 657 employees losing their lives and 260 taken prisoner. Yet these numbers would have been higher had it not been for the way in which some of the company's men responded to the most extreme challenges with bravery and a steely determination to keep things moving.

Christmas 1940 was a hard time for all the men at sea, but it was particularly traumatic for the crew of *British Premier*. Torpedoed in the mid-Atlantic on Christmas Eve, with the loss of 31 men in the resulting fire, nine men under the leadership of Second Engineer E. Cottingham managed to get away in the port lifeboat. Having sea-anchored the lifeboat over night and scoured the area for survivors without success, they set sail and were picked up 10 days later and brought ashore in Freetown, Sierra Leone although one of the men had died before their rescue.

Yet an even more remarkable survival story was to emerge from the crew of *British Premier*, several days after Cottingham and his shipmates returned to England. A separate group of four men had also managed to get away from *British Premier*, with ordinary seaman Evan Griffiths swimming back and reboarding the burning vessel to single-handedly launch the port after dinghy – a heavy wooden boat. Along with Ordinary Seamen Basil Davies and Walter Russ and Able Seaman Bob Austin, they too spent a night on the water at a safe distance from the burning ship, waiting for survivors to emerge. Somehow, they never spotted the lifeboat with their nine colleagues aboard and so set out on their own bid for survival.

What followed was a 41-day ordeal that took the four men to the very brink of starvation. They chose not to summon help (and badly-needed water) from a passing enemy submarine. Rain came as a life-saver on the 11th day and frequent showers enabled them to stay hydrated, but food supplies ran out on the 31st day. Sharks circled their boat as the desperately hungry men tried, with little success, to capture seagulls and fish. They somehow remained alive for 10 further days without food, until they were picked up by a destroyer and taken, in a skeletal state and suffering with salt-water boils, to Freetown, Sierra Leone, where they received urgent medical care.

Each man received a £20 ex-gratia payment from BTC, while seaman Griffiths was awarded the Lloyd's War Medal for "courage and resource at sea", as well as the British Empire Medal. Unfortunately, the remarkable Evan Griffiths died at sea later in the war, but the other three men made it through to peacetime.

One of the most shocking incidents involving a BTC vessel in WW2 relates to *British Chivalry*, sailing unescorted near the Maldives under the command of Captain Walter Hill, when it was torpedoed by a Japanese submarine on 22nd February 1943. Most of the men were able to get away from the sinking vessel on two lifeboats, but their good fortune did not last for long. The Japanese submarine commander soon captured Captain Hill and took him on board the submarine and, as the other men pulled away in their lifeboats, the submarine gunners unleashed their fury on the tanker's crew, spraying them with bullets for more than an hour. Chief Officer Peter Payne instructed the men to float in the water and feign death, but this did not prevent the killing of more than a dozen men.

Given the severity of the attack, it is miraculous that, in the aftermath, Payne was able to round up 39 survivors onto a single lifeboat. They had to plug around 20 holes in the boat before sailing west and for a full 37 days, the men survived on their stores, until they were picked up by a British ship near Durban, South Africa. Only one man was lost during their lengthy ordeal on the lifeboat.

Captain Hill, meanwhile, was twice placed blindfolded in front of Japanese firing squads before ending the war in the notorious Changi prison camp in Singapore. He survived terrible privations but returned to serve in the BTC fleet after the war. On Captain Hill's death in 1988, his obituary appeared in *BP News*, stirring a fellow officer, Captain A.W. Richardson to record: "Forty-four years later really should be a time to forget the excesses of wartime. However, there are exceptions and, in my view, five months' stubborn refusal (by an Irishman) to reveal even the relatively small amount of classified information that he held, deserves some mention. He was a great character, a fine man and he displayed qualities that would be the envy of most of us."

Bravery and courage are not words that are readily used by the men who served on the merchant convoys of World War 2, many of whom felt they were just doing their job. As George King relates in his memoir, they were: "ordinary men, plain men, competent men. Not heroes, not conscious heroes and probably not very heroic at all. Frightened sometimes; bored sometimes; angry sometimes; competent most of the time, very competent; but not heroes; part of a nation at war."

Looking back, it is remarkable to imagine that men would voluntarily put themselves in the dangerous situations faced by the tanker crews during World War 2. Few can doubt the enormous risks taken by men who carried out their duties in the line of enemy fire on a tanker full of flammable liquid. In fact, at the time, other mariners even questioned their sanity, and there was a perception on cargo ships that "those who elected to go to sea in oil tankers were an odd breed, tending towards mental instability and the demon drink!"

The line between volunteering and 'being volunteered' for certain duties was perhaps less than clear. The standard practice was, and remains to this day, that the crew of a vessel must volunteer to go into a war zone. How much actual volunteering was involved in 1944, when the invasion of Europe was in its final stages, was another matter. When King was paid off in Liverpool in May 1944, every man was asked by the supervising shipping Master whether they were volunteering for the invasion. "Before he had time to open his mouth, each individual's Discharge Book had been stamped with a 'V'. "Good lad!" exclaimed the shipping Master, and the lad was committed."

Nearly 70 years after the end of hostilities, the bravery of those who served on the Arctic Convoys was recognised. Stuart Allen received the Arctic Medal in June 2013 and in 2014, received the Russian Government's Ushakov Medal. When asked about the bravery of the tanker crews, he said in a matter-of-fact way: "We were just trying to do a job. There was a war on and we were trying to keep things on the move. The Merchant Navy is there to transport goods and materials. In this case, it was wartime, so it was war materiel and other essentials. This was our job."

If the crews of the tankers who did so much were too modest to talk openly about the importance of their contribution to the war effort, perhaps the eloquent testimony delivered by the then Princess Elizabeth is worth remembering. She paid the following tribute to those who served in the war when she launched the tanker *British Princess* at Laing's yard in Sunderland in 1946:

"No greater heroism has ever been shown than by the men who served in our tankers. Their achievements were of vital importance but seldom spectacular, and it was not often that they received the thanks they deserved. But in their own quiet, devoted way those men endured almost greater hardships than anyone. The men who sailed in those ships knew that from the moment they left port, they would be the 'bull's eye' of every enemy attack. They had seen other tankers hit and blazing from stem to stern. They had no false illusions about the danger that lay ahead. Had they failed, our Navy might have been without fuel, our Army immobilised, and our Air Force might have been grounded."

Spotlight: Arctic Medal

Northumberland Gazette

Alan Davies

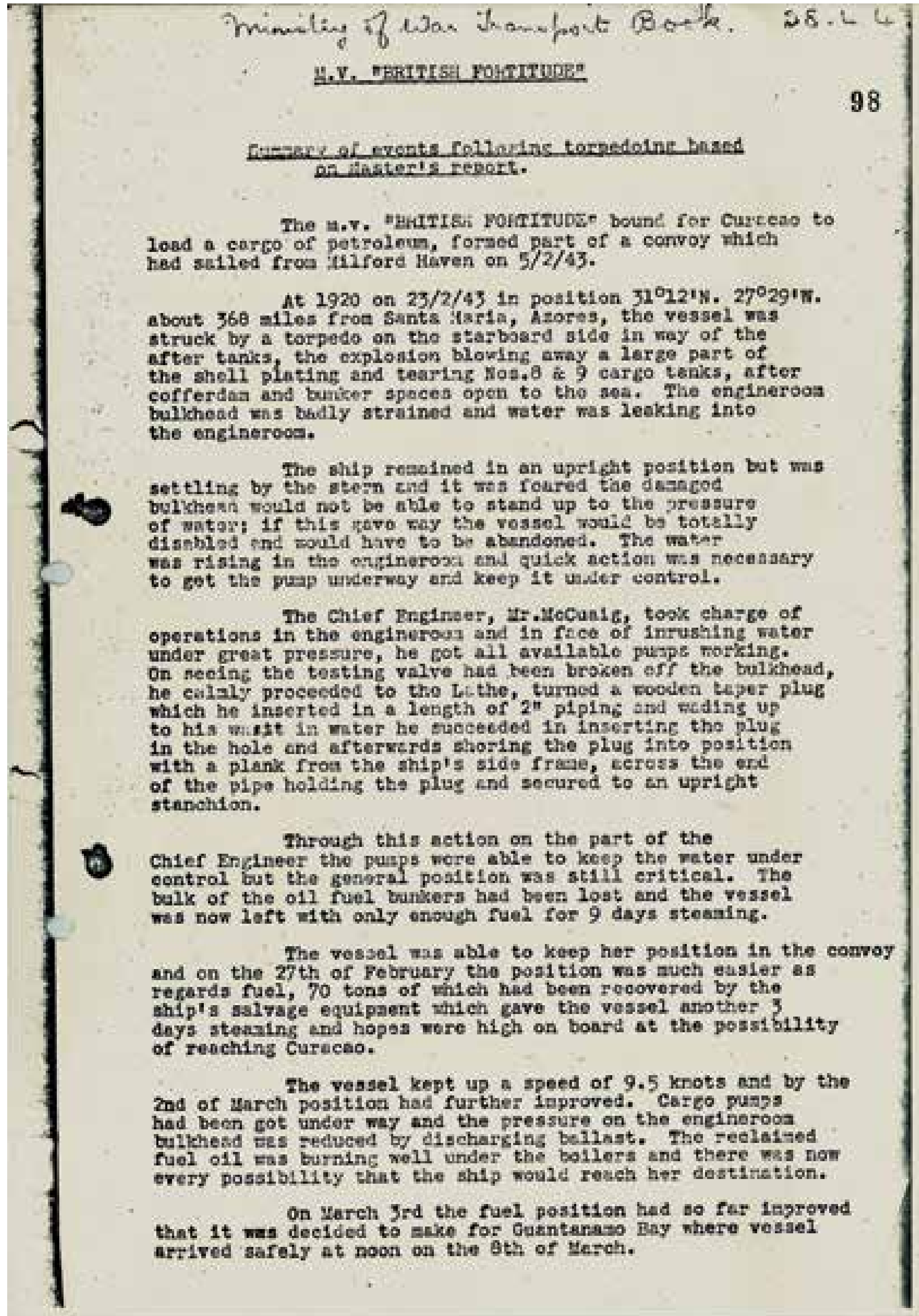
Alan Davies, was awarded an Arctic Star medal for his service in the Merchant Navy during the Second World War. Alan served on the oil tanker *British Corporal*, which was part of convoy PQ14, from Reykjavik, in Iceland, to Murmansk, in Russia, in April 1942. During the war, Alan also served on other BTC oil tankers that took part in various convoys across the Atlantic. At the time of convoy PQ14, he was a Third Officer. He subsequently went on to become Commodore of the BPTC fleet.

He spent his entire working life of more than 40 years serving with BPTC. The last ship he commanded was the supertanker *British Respect*, the largest vessel to take part in the Review of the Fleet that was held at Spithead on 28th June 1977, to commemorate the Silver Jubilee of the Queen's accession to the throne. (Chapter 2).

Left: Sailors use steam hoses to clear ice from anchor chains and winches on board *HMS Scylla* on convoy protection duty in the Atlantic in February 1943.

Right: An original BTC report to the UK Ministry of War Transport describing how *British Fortitude* was saved, by the courage of Chief Engineer T. McCuaig, after being struck by a torpedo.

Below: McCuaig in his merchant fleet uniform. The Chairman of the Anglo-Iranian Oil Company later personally awarded him a gold pocket watch inscribed with the words: "in recognition of his courage and skill which enabled his ship – substantially damaged by submarine – to reach safety, 1943." McCuaig was subsequently awarded an OBE for his actions.



Ministry of War Transport Book. 28.4.4

M.V. "BRITISH FORTITUDE"

98

Summary of events following torpedoing based on Master's report.

The m.v. "BRITISH FORTITUDE" bound for Curacao to load a cargo of petroleum, formed part of a convoy which had sailed from Milford Haven on 5/2/43.

At 1920 on 23/2/43 in position 31°12'N. 27°29'W. about 368 miles from Santa Maria, Azores, the vessel was struck by a torpedo on the starboard side in way of the after tanks, the explosion blowing away a large part of the shell plating and tearing Nos.8 & 9 cargo tanks, after cofferdam and bunker spaces open to the sea. The engineroom bulkhead was badly strained and water was leaking into the engineroom.

The ship remained in an upright position but was settling by the stern and it was feared the damaged bulkhead would not be able to stand up to the pressure of water; if this gave way the vessel would be totally disabled and would have to be abandoned. The water was rising in the engineroom and quick action was necessary to get the pump underway and keep it under control.

The Chief Engineer, Mr.McCuaig, took charge of operations in the engineroom and in face of inrushing water under great pressure, he got all available pumps working. On seeing the testing valve had been broken off the bulkhead, he calmly proceeded to the Lathe, turned a wooden taper plug which he inserted in a length of 2" piping and wading up to his waist in water he succeeded in inserting the plug in the hole and afterwards shoring the plug into position with a plank from the ship's side frame, across the end of the pipe holding the plug and secured to an upright stanchion.

Through this action on the part of the Chief Engineer the pumps were able to keep the water under control but the general position was still critical. The bulk of the oil fuel bunkers had been lost and the vessel was now left with only enough fuel for 9 days steaming.

The vessel was able to keep her position in the convoy and on the 27th of February the position was much easier as regards fuel, 70 tons of which had been recovered by the ship's salvage equipment which gave the vessel another 3 days steaming and hopes were high on board at the possibility of reaching Curacao.

The vessel kept up a speed of 9.5 knots and by the 2nd of March position had further improved. Cargo pumps had been got under way and the pressure on the engineroom bulkhead was reduced by discharging ballast. The reclaimed fuel oil was burning well under the boilers and there was now every possibility that the ship would reach her destination.

On March 3rd the fuel position had so far improved that it was decided to make for Guantanamo Bay where vessel arrived safely at noon on the 8th of March.

Getty

View from a BPS River Class tanker supporting the British Royal Navy task force during the Falklands Campaign in the South Atlantic, 1982. Far left is the aircraft carrier *HMS Hermes*, and left is *HMS Broadsword*, a type 22 frigate.

Business as usual in an uncertain world

While 1945 brought an end to hostilities between the world's major powers, regional conflicts continued to create challenges for the safe movement of the company's products across the oceans. The Middle East in particular became a highly unpredictable environment in which to operate and yet, it was from here that the bulk of the company's oil continued to flow. The Suez Crisis interrupted supplies and necessitated a fundamental rethink in company strategy, while the Arab-Israeli wars created tensions, with threats of boycotts and blacklists that risked future business in the region.

On a particularly difficult voyage to the Algerian port of Oran in 1959, *British Duke* found itself in a potentially lethal situation. The Algerian War was raging and J. F. Brown, a junior engineer on *British Duke* at the time, recalls how a search of the hull by the French Navy revealed a number of limpet mines which, thankfully, they removed. The French Marines then posted a guard on the quayside but, sadly, he was murdered during the night. The crew was understandably pleased to be leaving Algeria the next day.

While security of oil supply was a constant cause for concern during the 1960s and 1970s, thankfully, the company's tankers themselves were not normally targeted by the warring parties.

That was to change when war broke out between Iran and Iraq in the 1980s. In 1984, *British Renown* was struck by two rockets fired by an Iranian aircraft. Fire broke out, but was quickly extinguished. The following year, *British Spey* was targeted by an Iranian helicopter missile while sailing in neutral waters east of Qatar. The missile missed, thanks to evasive action taken by the crew. As the war escalated, BPTC tankers waited off Hormuz until a lull in fighting allowed them to proceed into the Persian Gulf. However, in December 1987, *British Respect* suffered a fire and damage after an attack by Iraqi aircraft near Larak Island in the Straits of Hormuz. Six former BP Shipping vessels that had been sold to the National Iranian Tanker Company were severely damaged, with three total losses.

The 1980s was also a decade in which BPS tankers would be once again called upon to serve the UK in a war zone. This time, the conflict developed with little warning and required the company's leadership to demonstrate just how quickly it could respond to a call for help from the UK Government.

When Argentina invaded the Falkland Islands on 2nd April 1982, the British Government made an almost immediate decision to send a task force to retake the islands. An essential element of this task force would be the capability of refuelling at sea and, since the BPS 'River' class fleet had already been used in NATO exercises involving refuelling at sea, the Ministry of Defence began negotiations to charter BP Shipping's entire 'River' class fleet. By the 7th April, six vessels – *British Esk*, *British Tamar*, *British Tay*, *British Dart*, *British Test* and *British Trent* – were committed to charter to the MoD. By the following weekend, *British Avon* and *British Wye* completed the complement of BP Shipping tankers to be used in the task force. After 37 years, the fleet was once again providing a vital supply line to a military campaign.

British Esk and *British Tamar* had already been fitted with the necessary gear to facilitate refuelling at sea, and the modifications required to the other tankers were quickly made in the following days, as they arrived and were prepared for their South Atlantic mission.

All crew were fully briefed by a member of head office staff that the ship would be sailing into a war

Eight tankers of BP Shipping's River Class were taken on charter by the UK Ministry of Defence for the Falklands Campaign.

"The position was made quite clear that no wives could sail into the war zone, unless they were an Officer serving on the same ship as their husband, and that if anybody wanted to be replaced on the ship; no 'black mark' would go against their name."

JOHN CARRIE

zone. John Carrie, fleet manager for BP Shipping at the time, gave the briefing on *British Trent* when she came into Portsmouth Harbour. "The position was made quite clear that no wives could sail into the war zone, unless they were an Officer serving on the same ship as their husband, and that if anybody wanted to be replaced on the ship; no 'black mark' would go against their name." Only a small number chose to come off the ships, mainly due to forthcoming weddings or impending fatherhood.

During the two months of conflict, refuelling at sea was executed successfully. The Atlantic served up its typically atrocious mix of conditions, with force 10 storms causing refuelling ships to run before the weather rather than heading into it, but never preventing operations from taking place.

While refuelling was the primary involvement of the BP Shipping tankers within the task force, *British Esk* took on a sad but important function, when Captain Gil Barber was asked to accommodate on his vessel the survivors of *HMS Sheffield*, which had been struck by an Exocet missile. Taking on an additional 271 men on a ship already holding its full allocation of 40 souls was no simple task, but the entire crew of *British Esk* accommodated the arriving seamen wherever there was space. Fourteen men slept in Captain Barber's day room; 14 more in the Chief Engineer's quarters; the Second Officer slept on the gyro room floor, and six Royal Navy ratings found a space to sleep on linen locker shelves. The catering staff of *HMS Sheffield* were put under orders of the BPS Catering Officer and together they organised a shift system that ensured that the 311 men on board received three meals a day in dining saloons that held barely 50. The bread ovens, normally used for a few hours each day, worked 24 hours a day for nine days, baking good-quality fresh bread. In fact, the main problem on board was the quick demise of the beer stocks. Even in these cramped conditions, some of the Royal Navy crew compared their accommodation on *British Esk* favourably to that on *HMS Sheffield*.

British Avon, meanwhile, returned to the UK with an unexpected extra passenger. Captain Alfredo Astiz was the Argentinian naval officer given charge of South Georgia during a temporary occupation of the island. Following his surrender, he was taken prisoner and passage to the UK was arranged on *British Avon*. In preparation for his period in custody, bars were welded to the windows of the owner's cabin, which became his secure accommodation for the journey. Five provost guards joined *British Avon* and kept a close watch on Captain Astiz, passing him his regular meals and staying with him while he was allowed out on the deck to exercise twice a day. He was removed from *British Avon* and taken onshore to a prison cell shortly before the ship docked in Portsmouth on 5th June. Attempts by French and Italian authorities to interrogate him for crimes involving the disappearance of their nationals during the 1970s military dictatorship in Argentina were unsuccessful and he was released after the conflict finished. However, in 2011, Astiz was finally tried and convicted by an Argentinian court and sentenced to life imprisonment for crimes against humanity.

The crew of *British Wye* narrowly escaped a direct hit when a bomb from an Argentinian Hercules landed on the deck of the ship, bounced and rolled off into the ocean. It had been dropped from a low height and the propeller attached to the bomb had not made enough turns to prime the explosive charge. The Second Officer and Watchman, who observed the whole episode from the bridge of the tanker, must have been terrified as the device hit the deck, knowing the certain result of an explosion. They were alert enough to note the markings on the bomb – information that proved valuable for the authorities. The Master of *British Wye*, Captain David Rundle, was awarded an OBE for his services during the Falklands Campaign.

In his gratitude for the merchant services's contribution to the task force, Britain's First Sea Lord, Admiral Sir Henry Leach, gave the following tribute: "I should like to thank the Merchant Navy on behalf of the Royal Navy for their magnificent performance in the Falkland Islands Campaign. I doubt that at any time in history an operation of this magnitude has been conducted in the onset of an Antarctic winter, from a base 8,000 miles away, without warning. The cooperation between our two navies was quite outstanding, unequalled even in the two World Wars; many feats were achieved of which the Merchant Navy may be rightly proud and Royal Navy deeply grateful.

"The operation has emphasised once again the dependence of our island nation on the sea and the overriding importance of maintaining strong and effective maritime forces, both Merchant and Royal Navy. We must continue to build on this in the future so as to ensure a balanced range of capabilities to meet any threat – which again may well be unforeseen."

This appreciation was echoed by Sir John Fieldhouse, Commander of the Falkland Islands task force, who added: "I cannot say too often or too clearly how important has been the Merchant Navy's contribution to our efforts. Without the ships taken up from trade, the operation could not have been undertaken, and I hope this message is clearly understood by the British nation."

Ship-to-ship refuelling on a relatively
calm day in the South Atlantic.

The final dramatic moments of *Maged-H* in rough Greek waters in November 1994. *British Esk* rescued nine of the 10 crew.

Beyond conflict

The involvement of BP's shipping arm during the conflicts of the 20th century led to moments of tragedy, acts of heroism and remarkable escapes. It would be wrong, however, to consider that the intervening years were absent of incidents that required the crew's experience, skill and courage to protect both themselves and others from the perils of the sea. From the early days of the British Tanker Company right through to today's complex global operations, BP Shipping crews have encountered other seafarers, from professional mariners to desperate refugees, in need of their assistance. Time and time again they have used their resourcefulness to save the lives of others, often putting themselves in great danger to do so.

British Strength was heading to Australia from Abadan in 1933 with a cargo of crude oil, when she picked up an SOS signal from *Lindenbank* – a 5,000 dwt British cargo steamer. *Lindenbank* had lost her propeller off the Carpenter Rocks on the South Australia coast and was being driven ashore in a raging gale. Captain Atkins headed at full steam for 75 miles to provide assistance in a rescue operation that posed extreme danger to both his own crew on *British Strength* and the crew of *Lindenbank*. By manoeuvring *British Strength* to within 200 metres of *Lindenbank*, the rescuers were able to get a rocket line across and then tow her for 280 miles to safe harbour in Melbourne. Much of the success of this delicate rescue operation is credited to the early use of wireless telegraphy, allowing a swift two-way exchange of information and instructions between *British Strength* and *Lindenbank*.

On the 7th April 1961, *MV Dara* – a British India motorship with more than 700 passengers and crew on board, exploded and caught fire after leaving the port of Dubai in the Persian Gulf. The majority of passengers were without life jackets and, for many, reaching a rescue craft meant a leap of faith. According to one eye witness: "Women and children were caught on deck with a choice between the waves or the flames." One of the first ships to arrive was *British Energy*, under the command of Captain R. O. Cash. Malcolm Thomas was the Second Engineer on that fateful day and he recalled how lifeboats were launched and a total of 145 people were taken on board *British Energy*. Other vessels managed to rescue hundreds more. However, the incident left 238 people dead – the worst loss of life at sea since *Titanic*.

"Johnston then leapt into the water, grabbed the now exhausted man by the lifejacket and pulled him back to the bottom of the ladder, from where he could be hauled to safety."

CAPTAIN ANDERSON

Dealing with calls for help from other vessels is a routine element of a Master's duties, but on occasion these assistance activities can pose a risk to rescuer and rescued. On the 20th November 1994, the Captain of *British Esk*, Paul Anderson, was made aware of a vessel in trouble in Greek waters. Monitoring the stricken *Maged-H* at first, the Rescue Control Centre at Piraeus soon appointed Captain Anderson as the on scene commander, *British Esk* being the nearest vessel on hand to offer support. Communication with the crew of *Maged-H* was difficult due to language differences, but it was clear that the ship was sinking and the extreme gravity of the situation was made apparent when men were seen jumping overboard.

Captain Anderson managed to manoeuvre *British Esk* close enough to one of the two men in the water who hadn't been able to get into a lifeboat, so that he could be thrown a life buoy, but by this time, he was getting increasingly exhausted. It was at this point that Chief Officer Mike Johnston volunteered to descend the pilot ladder to help the man. He soon discovered that he would not be able to help just by dangling a lifting strop to put around the man in the water. According to Captain Anderson: "Johnston then leapt into the water, grabbed the now exhausted man by the lifejacket and pulled him back to the bottom of the ladder, from where he could be hauled to safety." Attempts to save the last man remaining in the water were sadly to no avail. Thanks to the prompt action of those on *British Esk* and with the involvement of helicopter support, nine of the 10 crew of *Maged-H* were saved.

From time to time, a stricken ship is discovered by visual sighting and a rescue operation must be mounted regardless of operational schedule. In July 1970, *British Ambassador*, under the command of Captain Stuart Allen, was en route from Kharg Island to Little Aden, when an upturned vessel was spotted by the crew, with 14 survivors clinging desperately to the keel. By manoeuvring one of *British Ambassador's* lifeboats into position near the visible keel despite swirling waves, and throwing a line to the survivors, they were able to pick up all 14 and bring them to the ship, where they were provided with food, warmth and clothing until doctors were able to board at the Aden Outer Anchorage.

Attracting the attention of a passing tanker at night can prove difficult for a stricken vessel with no lights. This was the challenge faced by the crew of a tiny fibreglass skiff that was drifting helplessly in the Torres Strait off the northern coast of Australia in October 2006. With no navigational lights, one of the crew held up a cigarette lighter, while another wrapped his clothes around an oar and set them on fire in an attempt to attract the attention of *British Curlew*, which was passing nearby.

Thankfully their distress signals were spotted and although *British Curlew* was unable to initiate a rescue alone due to the hazardous reefs, it was able to summon assistance from *Titan*, a smaller freighter that had recently passed the scene. The crew of *British Curlew* were able to guide the rescuers to the exact location of the skiff using their radar, located high up on the ship's monkey island. While the crew of the skiff were extremely relieved to be rescued and avoid a disastrous collision with

British Curlew – 115,000 dwt – lays at anchor in Flying Fish Cove, Christmas Island, as it prepares to disembark 78 Sri Lankan refugees rescued after their fishing vessel was reported to be in distress in 2013.

a tanker, the police were less than impressed and issued the sailors with a penalty fine for putting themselves in such a dangerous situation.

Sometimes, a tanker may encounter refugees, crossing the seas at great risk in ill-equipped boats to get away from their home countries. *British Ranger* was involved in an incident in 1985, when a motor-driven sampan was spotted off the coast of Brunei, with a board bearing the letters SOS on it. It was established that the occupants, who included a pregnant woman, were Vietnamese refugees. Captain Phillip Johnson's first priority was to ensure that the occupants of the heavily overcrowded boat had adequate water and food. One girl from the boat sent up a piece of paper to the crew that read: "We are Vietnamese, we run away VC. We want to go to freedom your country (London) thank you very much."

They were given supplies and assisted with establishing their location and a charting for Brunei. The crew later learned that the boat had indeed arrived safely in Brunei and that the pregnant woman on board was being treated in a local hospital.

In 2013, the crew of *British Curlew* was again in action when called upon by Australian authorities to assist 78 Sri Lankan refugees after their fishing vessel was reported to be in distress. The passengers of the stricken vessel were recovered by *British Curlew* and taken to Christmas Island – an Australian territory in the Indian Ocean. As if to underline the severe hazards that refugees face on their journeys, while *British Curlew* was taking the 78 people to Christmas Island, the Captain responded to another request by Australian authorities to conduct a search and rescue operation for possible survivors of a separate vessel carrying asylum seekers that had capsized in the same area.

The ability of watchmen to spot the smallest details at sea can quite literally be life-saving. One evening in 2009, during a Caribbean voyage by *British Innovator*, Second Officer Simon Page was alerted by watchman Edwin Hitalia about a faint light in the distance. It had to be something very small as it did not present itself on the radar, but the light had sent alarm bells ringing – it was not flashing rhythmically like a buoy and not coinciding with the swell as a small boat bobbing in the water would.

On a hunch that something wasn't right, Page called the Master, who immediately manoeuvred the vessel for a closer look. In the limited moonlight, they made out the dim outline of a small boat and a man waving his arms frantically, trying to get their attention. What followed was a well-ordered rescue operation, where the Master, Chris Durman, brought the ship into position alongside the small boat and a line and lifebuoy were thrown into the sea to bring two exhausted men to safety.

The rescued men were from Trinidad and Tobago and were suffering from exposure, malnourishment and dehydration, having been drifting for 10 days and surviving on raw fish. They were extremely relieved to get a hot meal and a change of clothes.

Fellow officer Steve Williams reported, "It was a job well done. From the initial sighting to the rescue and recovery of the fishing boat, the whole operation took a little more than 90 minutes. The professionalism shown by all on board, from Messman to Master, is a credit to both the company and to the Merchant Navy. We can all take great pride in knowing that we played a part in saving two lives."

Dealing with major incidents

The Royal Humane Society is a charity founded in 1774 that grants awards for acts of bravery in the saving of human life. The Stanhope Gold Medal is the highest honour that the Society can bestow. It has been awarded to people who have put themselves in extreme personal danger, carried out a very long and arduous rescue or returned repeatedly to a highly dangerous situation. Junior Engineer Jack Easton received the award in 1966.

During the past century, BP's shipping arm has had to deal with situations that have threatened, or resulted in, major safety or environmental incidents. The repercussions of some of these incidents have changed the industry. They often featured acts of great courage or initiative by BP seafarers.

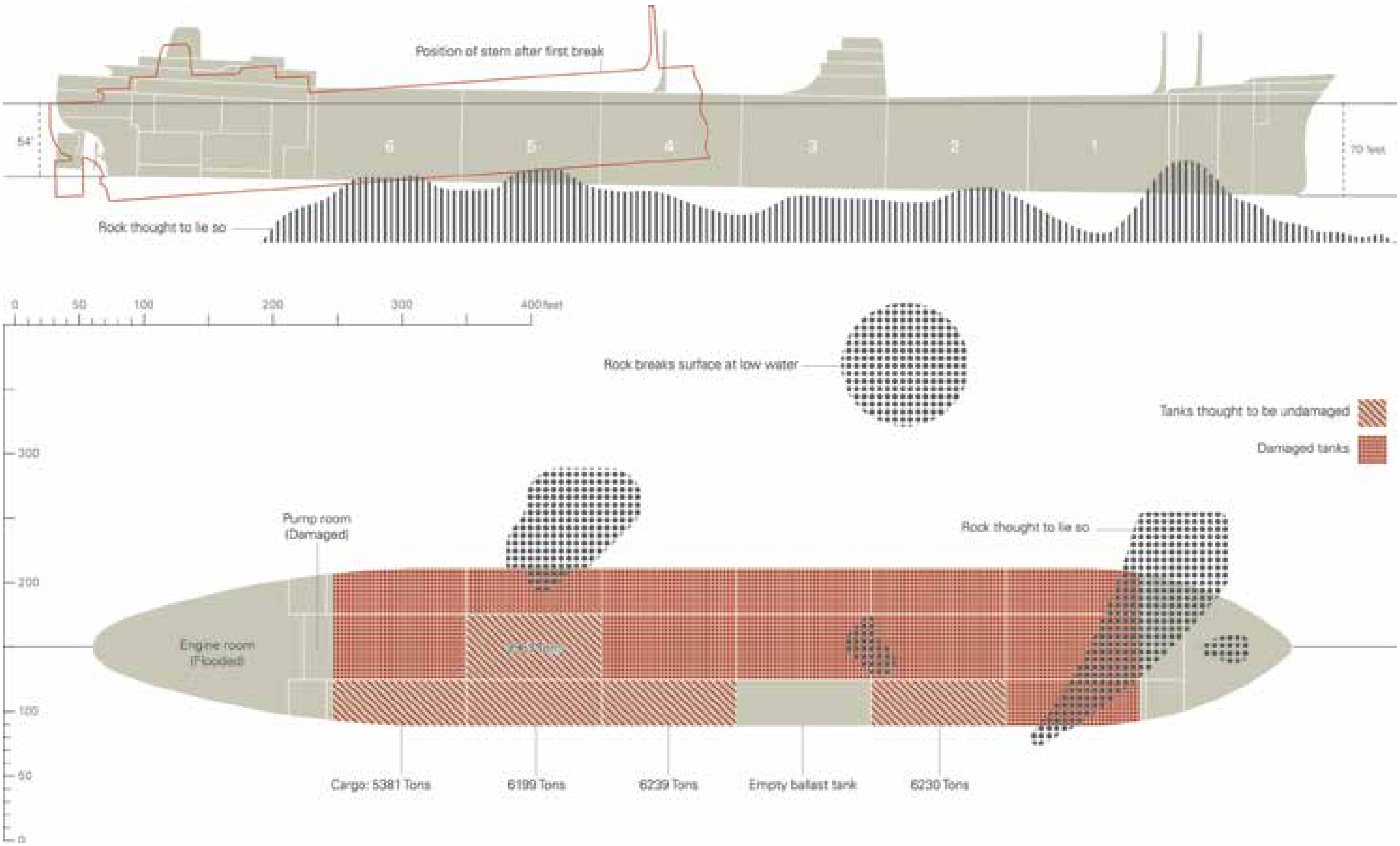
When *British Crown* exploded while completing loading at Umm Said in August 1966 (Chapter 2) with the tragic loss of 19 lives, an Indian 'donkeyman' (petty officer), Abdul Karim Dawood, 44, went up on deck from the boiler room, and saw fire everywhere and his crewmates jumping over the side. With great courage, he went back to the boiler room where he systematically shut down the machinery to prevent another explosion, which might have destroyed the boilers, and killed men already in the sea. He stood by the engines until they were safe, then he cut a path with a fire extinguisher to get back on deck where he met seaman, Abbass Nooroodeen, 55, who could not swim. Dawood helped him down a rope and supported him until Jack Easton, a Junior Engineer, swam up to help.

The young Easton – a strong swimmer – had been on watch in the engine room. He encouraged the Indian crew members to jump into the sea, following them into the water and assisting four men to reach a mooring buoy. At one stage, a blazing launch was drifting onto the buoy, threatening the survivors clinging to it. Easton swam to the launch and managed to divert it away from the buoy. According to the official record, 22 year old Easton "swam anything from 1200 yards to a mile or more. Oil was burning on the water, there was possibility of explosions and sharks". Dawood later received awards from the UK Board of Trade, the Society for the Protection of Life from Fire and the Narottam Morarjee Award for Gallantry. Easton was awarded both the Gold Stanhope Medal of the Royal Humane Society – its highest honour – as well as the Royal Life Saving Society's Mountbatten Medal. Fourth engineer Ray Bartley received the Royal Humane Society's Testimonial. In the aftermath of the tragedy, Captain Frank Broad of *British Loyalty* played a major role in devising a way in which to safely transfer 12,000 tons of cargo from the damaged tanker, once the fire from the explosion had been extinguished.

From the moment that BP was made aware of the tanker *Torrey Canyon* foundering off the Scilly Isles on its way to Swansea from the Middle East in March 1967, it was clear that they were dealing with a major incident. The ship was registered in Panama and, having been chartered to an American company Phillips Petroleum, it was rechartered for a single voyage to BP. While the company was not legally liable for the vessel and its operation, it's resources were quickly put behind the efforts to manage the spill. Detergents and pollution control materials were supplied from company stores in Falmouth, while technical advice was given as needed to the response coordinators in Plymouth. George King was operations manager at the time and was at the heart of the response, joining the naval authorities in charge of the situation. King was lowered by helicopter onto the deck of the tanker to make an assessment of the damage, but the challenging conditions for the helicopter pilot meant that he had only 40 minutes on board to gain a rapid understanding of the situation. He reported back to the Royal Navy and Ministry of Defence, drawing a diagram to help the commander understand the situation and the next day attending the Cabinet Office to explain his findings.

Despite extensive efforts to stem the leak of its cargo, *Torrey Canyon* suffered an explosion in the engine room, leading to the tragic death of a salvage master, while the vessel broke her back and gushed

SS Torrey Canyon



out her cargo, soon oiling the Cornish and French coastlines. Efforts at burning the oil on the sea surface proved largely futile and the incident had major repercussions for maritime regulations.

At the end of 1978, *Andros Patria*, a Greek vessel on charter to BPTC travelling off the Spanish coast with a full cargo of more than 200,000 tons of crude oil, suffered an explosion in a ballast tank. Fearing further explosions, the Captain and crew launched a lifeboat, while the Chief Engineer and a crew member managed to set the ship to avoid drifting onto the coastline. In a terrible tragedy, the lifeboat capsized in rough seas, with the loss of 34 lives.

The risk of another *Torrey Canyon* disaster was all too clear and perhaps with this in mind, no country wanted to take the vessel into its ports and risk a major spillage on its doorstep. *British Dragoon* was called into service and lightered the cargo, 35,000 tonnes at a time, transferring it to the larger VLCC *British Promise*, which was unable to go alongside *Andros Patria* and take the oil directly, as she was not fitted with the necessary pneumatic fendering. The transfer of the oil took four weeks and much technical skill and extraordinary diligence to complete.

1978 brought another reminder of the company's experience with *Torrey Canyon*. On 12th October, the oil tanker *Christos Bitas* was sailing from Rotterdam to Belfast, with a load of 35,000 tons of Iranian heavy crude oil, when she ran aground some eight nautical miles off the Pembrokeshire coast. Four thousand tons of oil were spilled in the incident. The commanding officer managed to refloat the vessel without external help and decided to continue his journey, as he thought there was no longer any significant leak. He nevertheless warned the coastguards of the oil spill. As the risks of environmental pollution were high, the owner of the ship (Adriatic Transports Ltd) and the owner of the cargo (BP) were immediately contacted by the coastguard. BP Shipping offered its services at once.

It soon became obvious that *Christos Bitas* was, in fact, seriously damaged and that she was still losing oil. Consequently, BPTC ordered the vessel to stop in order to avoid spreading the pollution. Response operations were rapidly organised. Three distinct operations were simultaneously set up addressing the problem of dealing with *Christos Bitas*, offshore response; and onshore cleaning operations.

Stuart Speed, BP Shipping's chief engineering superintendent, flew out in poor weather to take charge on board the vessel as she listed with her bow under water.

"As the RAF helicopter approached her, we could smell the crude oil through the open doors. It couldn't land because of the dangers of escaped gases and the position of the stricken vessel, so the crew dropped me down on a winch. She was 'down by the head', her main deck flooded and she was listing 14 degrees to starboard. Once I'd done an initial assessment, we pulled together a team from the North Sea and began ordering the equipment needed to right the vessel, modify the ship, and pump out her tanks into support vessels alongside, as well as stop further leakage. It was the greatest logistics exercise I've experienced in my long career with BP," Speed recalled.

"Remarkably, we managed to locate and quickly transfer a low-pressure, diesel pump from an oil rig off Blackpool with which to pressurise the tanks and get the ship back on an even keel as she was continuing to list farther. It had an electric starter in an uncontrolled environment, so I got the fire hoses rigged and pointed at the pump and at me and then pressed the button. Fortunately, she coughed into life without incident and continued to work for the next seven days and nights without a break. It saved the ship at that critical point."

Three tankers, *British Hazel*, *British Dragoon* and *Esso York*, sailed towards *Christos Bitas* in order to lighter her, and the Third Engineer of *British Hazel* went aboard to get power on – 26,000 tons of oil were successfully removed over the next few days. She was subsequently towed out into the Atlantic Ocean, to a very deepwater area, 270 nautical miles west of Fastnet Rocks, where she

The terrible plight of the partly-submerged *Christos Bitas* is captured from the air as she is assisted by tugs and *British Dragoon*.

would not interfere with navigation, fisheries or submarine telephone cables, and was scuttled. A major exercise was undertaken to tackle the spill with a fleet of 40 vessels, which deployed booms to contain the oil and spray dispersants on it. They also used skimmers to recover the oil. Oil reached local islands with sensitive habitats and manual cleaning was deployed.

As it did with *Torrey Canyon* and later *Andros Patria*, BP Shipping devoted its best resources and expertise to help to bring under control a leaking and foundering tanker that it did not own or operate, and to effect a clean-up without recourse to a debate on where responsibility lay.

When the Thunder Horse platform in the Gulf of Mexico was found to be listing by 20 to 30 degrees in July 2005, BP Shipping was called in to assist. It had a reputation within the group as marine experts and Adrian Howard, technical director for BP Shipping, worked with the emergency response team in Houston and with a colleague visited the platform to help work out what had caused the problem.

With the lifts on the Thunder Horse platform not working, Howard had to descend 160 feet via a spiral staircase into the bowels of the vessel. He performed a forensic inspection of the subsea structure, testing the initial assumptions made and eventually concluding that a design and construction fault rather than the effects of a recent hurricane had led to a chain of events that had resulted in the platform listing. Howard briefed the response and engineering teams in Houston and a remedial plan was rapidly put into place. When summoned to a briefing with BP Exploration's global chief executive, Andy Inglis, Howard noticed how much oily grime was still under his fingernails from his inspection deep inside Thunder Horse. Inglis was later to remark: "What I like most about BP Shipping people is that they have real dirt under their fingernails."

Inglis would again call upon BP Shipping's marine knowledge and practical expertise to assist on other major projects in his business. The Thunder Horse incident confirmed once and for all the role of BPS as an expert in marine matters across BP.

Opposite: 26,000 tonnes of oil are successfully transferred from the stricken *Christos Bitas* to BP Tanker Company's own vessel – the 53,000 dwt tanker, *British Dragoon*, October 1978.

Left: Stanley Clinton Davies, a junior government minister is winched on to BP Tanker Company's *British Dragoon* to be briefed on progress with oil recovery from *Torrey Canyon*. Clinton Davies later became European Commissioner for Environment, Transport and Consumer Protection.

Below: Cargo hoses are secured in place as a major ship-to-ship pumping operation commences between *Christos Bitas* and *British Dragoon*.

A doctor on board *SS Uganda* performed life-saving surgery at sea on a young BP Tanker Company steward in 1965. *Uganda* had an illustrious career, starting out as a cargo/passenger liner, before converting to an educational cruise ship. The Falklands Campaign saw her perform the role of troop carrier and hospital ship in concert with the logistics support provided by BPS tankers.

Extraordinary cargoes

Occasionally, vessels are joined by passengers who have no connection with the company or its operations, but who, for various reasons, require safe passage on board. In the pre-war years before air travel became established, an arrangement was in place to carry the Sultan of Muscat and his entourage (including servants and cooks) on board a BTC vessel for passage to his palace at Salala on the Arabian Sea coast, where he spent the summer months. During the two-day passage, the Captain would vacate his accommodation on the lower bridge for the use of the Sultan. His inconvenience was handsomely compensated by the gift of a Persian carpet from the Sultan at the end of the voyage.

In 1950, as BTC expanded its operations beyond the Abadan-UK route and into the South Atlantic, the crew of the T2 tanker *Red Bank* was asked to make an unscheduled stop on its way east from Argentina. The radio operator at Tristan da Cunha had contacted the ship asking if they would make a stop at the island to pick up a mother and her two children, one of whom required urgent medical attention, and take them to Cape Town in South Africa. The operation was complicated by the lack of a harbour at Tristan da Cunha, meaning that the party had to board via a small boat on the ocean swell. The mother's agility in hopping between boats made light of a potentially hazardous transfer – something that caused one of the crew of *Red Bank* to quite rightly deduce that she had once been a Wren.

Of course, medical emergencies at sea bring dramas of their own for seafarers who fall ill and, on these occasions, the support of other vessels can be crucial. In 1965, Richard Low was serving as Third Engineer on *British Diplomat*, a 60,000 dwt tanker. Outward bound from the UK to Kuwait, to load a cargo of crude oil, the vessel was in the Indian Ocean, about two days past Aden and heading for the Persian Gulf. A young steward was taken ill with severe stomach pains, which appeared to be appendicitis and a 'Mayday' was broadcast for help from any ships carrying a doctor. Fortunately, the B-I passenger liner *SS Uganda* responded. Both ships altered course to rendezvous at daylight the next morning at a distance of about one mile. Low was one of 12 volunteers to man a lifeboat to attempt the transfer of the stricken steward down the steep sides of the tanker and across swells of a shark-infested Indian Ocean. "The waves looked a lot bigger from down there than they had from the deck 40 feet above," he recalled. "We careered down into the troughs and up over the crests of wave with the lifeboat's bluff bow flinging spray in our faces as we headed towards *Uganda*."

As the lifeboat approached, *Uganda's* Master, Captain Benson, ordered it to "heave to and keep clear". To the astonishment of Low and his fellow volunteers, *Uganda's* engineroom telegraphs clanged and water boiled under her stern. Slowly at first, then with increasing speed, the big ship began to pirouette as it went full ahead on the port engine and full astern on the starboard. In a superb display of seamanship, the manoeuvre flattened out the waves as the ship's hull pivoted. With another clang of the telegraphs, she came to rest in the original position, and the Captain reappeared on the bridge-wing. "*Diplomat* lifeboat! Quickly now! Come alongside our port accommodation ladder." The comatose steward was soon on *Uganda's* operating table for emergency life-saving surgery – but Low and his colleagues faced the difficult journey back to *British Diplomat* and the long haul back up the tanker's side, swinging and crashing terrifyingly in the process.

Several years later, Low's parents were in conversation at a party in the UK where a surgeon related to them a story of how he was travelling back from India on a passenger liner and was called upon to perform an emergency operation. The ship was the *SS Uganda* – and the patient a desperately ill merchant sailor from an oil tanker called *British Diplomat*. He was happy to relate that the patient made a good recovery.

"The waves looked a lot bigger from down there than they had from the deck 40 feet above. We careered down into the troughs and up over the crests, with the lifeboat's bluff bow flinging spray in our faces as we headed towards *Uganda*".

RICHARD LOW

Generations of service

Seafarers often hail from a long line of maritime antecedents and BP Shipping is no exception, with families containing several generations who went to sea and worked for BP ashore.

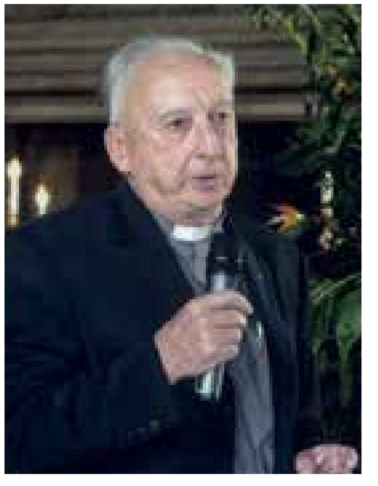
James Hay was born in Tough in Aberdeenshire on 16th September 1881 and left school barely 12 years old "to join the Navy". He achieved his Certificate of Competency as second mate of a foreign-going steamship in the merchant service in 1912, then, as first mate in 1914, and finally as Master in 1917. He subsequently became Master of the British Tanker Company's (BTC) very first ordered ship – *British Emperor* – until he was tragically killed while in Abadan in 1925, reportedly from a slip off the gangplank. He is buried at Abadan Cemetery.

James' son – George – was only six years old when his father died, but 10 years later, in 1935, he too signed up to BTC as an indentured apprentice. George finished his apprenticeship in 1939 and on 23rd June, he wrote to his mother from on board *British Grenadier* while in Port Said, Egypt: "After I've got my ticket, I have to join the Royal Naval Special Reserve. All boys in the merchant service between the ages of 20-21 have to be in this. I go up for a period of training each year and get paid for it, but in time of war I am to be kept in the merchant service". Two months later, Britain was at war and George joined *British Resource*, sailing the dangerous waters of the Atlantic. Entitled to 10 days leave for every 12 months of continuous service at sea, George began his second shore leave on 6th March 1942. Eight days into his shore leave, *British Resource* was attacked and sunk by a torpedo in the Atlantic, with 46 of the 52 crew killed. George Hay continued to serve on BTC ships throughout the war, rising to the rank of Master like his father before him. He came ashore in 1948 to become mooring master in Bandar Mashur, near Abadan, where members of his wife's family were engineers at BP's refinery. His daughter, Elizabeth Hay, later worked for Britoil and BP. In the spirit of the Hay family, she was among the very first women to successfully complete the North Sea safety and survival course started by the Robert Gordon's Institute of Technology in 1977.

The Rutherford family can trace a connection back to marine engineers of the early 19th century who worked on steam-powered vessels, which transformed the world of shipping. In 2014, Jean Rutherford recalled how her late husband, David, and his brother, Nicholas, had long careers with the BP Tanker Company (BPTC) fleet and both achieved the rank of Master in the 1960s. It was little surprise. Their father, Leslie, had served as an engineer for the Glen Line and their uncle, Nicholas, was a Chief Engineer with BTC in the 1920s and 1930s. Nicholas (Sr) had died in Port Said, Egypt, while serving on board *British Motorist*.

The story doesn't end there. The father of Leslie and Nicholas (Sr) was Lesslie John Rutherford – born in 1873 and a Chief Engineer on tankers involved with the very first shipments of Anglo-Iranian oil from Abadan. Lesslie (whose name was misspelt in the Birth Register) achieved fame in 1901, when a ship he was on was officially declared 'lost at sea' after going missing for three weeks. *SS Allegheny* had been crippled by a hurricane and blown far from shipping lanes without radio while en route to Buenos Aires. The young Lesslie – a Chief Engineer by the age of 25 – showed the remarkable 'make do and mend' of maritime tradition by effecting a temporary repair of the thrust shaft of the single-screw steamer, such that she could limp into Trinidad more than three weeks later to general acclaim and surprise. Lesslie received the Mercantile Marine Medal and War Medal for his service on tankers in WW1 and the Defence Medal in WW2. But the Rutherford seafaring tradition didn't begin with him. It was no surprise to find that both his grandfathers had been engineers in the earliest days of steamships during the 1800s. The engineering skills and seamanship had passed down through two centuries of the Rutherford family and contributed to the evolution of the shipping company known today as BP Shipping.

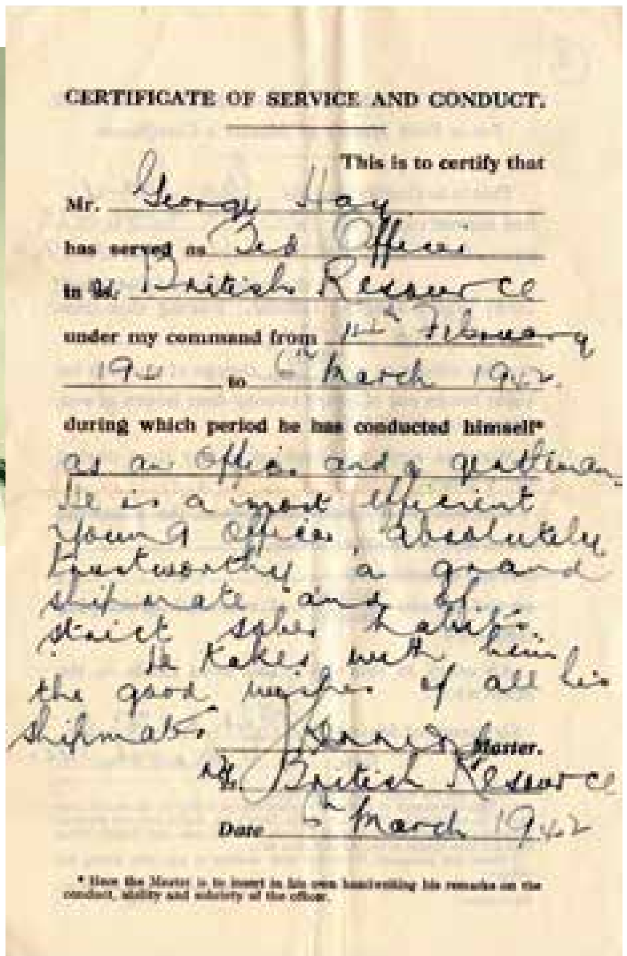
Captain David Rutherford, who took holy orders after retiring from BPTC – seen below saying grace before the dinner celebrating the 90th anniversary of BP Shipping in 2005.



Left: James Hay – Master of *British Emperor* – pictured here with his wife and baby son, George.

Below: George Hay (back right) on board *British Destiny* 1937.

Above: George Hay, who, in 1935, followed his father in joining BTC and also rising to the rank of Master.



CERTIFICATE OF SERVICE AND CONDUCT.

This is to certify that

Mr. George Hay

has served as 3rd Officer

in M.V. British Resource

under my command from 1st February 1941 to 6th March 1942.

during which period he has conducted himself*

as an Officer and a gentleman. He is a most efficient young Officer, absolutely trustworthy, a grand shipmate and of strict sober habits. He takes with him the good wishes of all his shipmates.

J Hay Master.

M.V. British Resource

Date 6th March 1942

* Here the Master is to insert in his own handwriting his remarks on the conduct, ability and sobriety of the officer.

Right: The 23-year-old George's reference from the Master on taking leave from *British Resource* in March 1942. Eight days later, *British Resource* was attacked and sunk.

5 LIVING AND WORKING AT SEA AND ASHORE

Page 201: A navigating apprentice operates a cargo valve on *British Duchess* – 44,000 dwt – built in 1958 by John Brown, Clydebank, Scotland.

Below: Cadets join 75,000 dwt tanker *British Ensign*, June 1964. *British Ensign* was launched the previous year from the Cammell Laird yard in Birkenhead, England. She was sent for demolition in 1976.

Going to sea

'Life at sea'. Does that phrase refer to the spending of a lifetime at sea? Does it suggest the experiences one could expect to encounter while on board a ship? Or does it allude to something of the richness of the 'life', the characters, the excitement and the adventure, alongside the working tasks, to be found on ships and in the mariner's world?

'Life at sea' suggests all of these, as to work at sea is to spend a good deal of one's life at sea, over long periods and, at times, not knowing when one would next be home. Indeed, 'home' for seafarers is as equally the ship on which they are serving at any one time as it is the bricks and mortar back on dry land in their home country. Floating communities, small towns even, which, until the arrival of modern technology, were connected to the rest of the world only by radio, mail or when in port. The ship has always had to carry, along with its cargo, the basic needs to provide for the crew on board, refuelling and restocking when possible. The phrase 'gone away to sea' carries a heavy meaning to both seafarer and to loved ones back on dry land.

Simply growing up by the sea, watching boats and ships coming in and out all the time, and maybe a dock or a port to watch the sailors coming off their vessels for a bit of shoreside respite, has, for many, been enough of a reason to join the Merchant Navy. Others cite long traditions of seafaring in their families; or reasons for wanting to 'escape' from difficult home circumstances; or a strong desire to travel the world; or simply because they didn't know what else to do.

For George King, writing in his memoir, it was a simple love of ships: "Long ago, when every summer was golden, I fell in love with ships. In 1935, that was not difficult for a boy of 10 in the town of Ayr. The sun had not then set upon the British Empire strung along trade routes over which the red ensign ubiquitously fluttered. The Royal Navy flourished and the white ensign was carried proudly to every corner of the globe... In these islands vast fishing fleets sailed from Aberdeen and Hull, from Grimsby and Lowestoft, from Fleetwood and the west of Scotland... and every summer the Firth of Clyde was speckled with the sails of a thousand yachts. In any case, it took only 10 minutes, on a second-hand bicycle, from Newton Park School to Ayr Harbour. It was there that the fever entered the blood, at first for the artefacts, for the craft, and not for the sea."

For many, the place to begin was as an apprentice or cadet, but this wasn't always easy. "Next to a jelly fish, the lowest form of marine life is an apprentice," goes a saying that is oft-quoted and has greeted the ear of many a green newcomer .

In the 1920s, more than 60% of deck boys going to sea had no induction course of any kind and were often used as 'sweated labour', particularly during the years of the Great Depression. They were sometimes as young as 14 years old. For others, there were opportunities to join shipping companies that ran their own training schemes or supported boys in a three- or four-year programme at sea and ashore. Later, the Shipping Federation provided a route to identifying and obtaining apprenticeships with companies such as BTC.

In 1928, British Tanker Company introduced its first formal scheme for training deck apprentices. George Radford was among the very first intake, joining *British Progress* in 1929 and living "aft in the poop space in the same alleyway as the refrigerator and engine room access, where the incessant main

Above: A navigating apprentice hoisting the ship's signal letters on board *British Duchess*.

engine clatter was punctured from time to time by thuds and bangs from chunks of meat flung out of the refrigerator." Radford recalled being helped in his studies on board by an encouraging Second Officer "a real character who was a tubby, jovial snuff addict and whose sneezes could be heard all over the ship." He was taught by a Third Officer "to sew canvas properly, rope awnings, and other skills not found in our text books... despite the tobacco juice he squirted around much to our disgust."

Schools such as *HMS Conway*, *HMS Worcester* and the Nautical College, Pangbourne, were pre-eminent in preparing students for a career at sea as ships' officers. The static training ships of the Marine Society prepared students for a life at sea as an Ordinary Seaman – a good number of whom would go on to become ships' officers. School ships set up as a result of the Reformatory and Industrial Schools Acts aimed to help boys in difficult circumstances, while other institutions, such as the King Edward VII Nautical School, helped candidates pass the examinations prerequisite for their appointment as Mates or Masters.

The standard minimum age was 16 for apprentice Deck Officers, Stewards, and Seamen, while Firemen and Greasers had to be 18. In practice, however, some individuals managed to join the industry before reaching the required age and, in some cases, even to go to sea. In particular, the onset of war in 1939 and the need for seamen did mean that some of the apprentices were sent to sea with only six months' basic training under their belts. Some young boys who probably wanted to escape the bombing, lied about their age and went to college at the age of 14, finding themselves in action a mere six months later, if not immediately.

After the war, BTC reinstated its deck apprentice scheme, but, like other shipping operators, experienced something of a crisis in recruitment. Many of the men who had joined up from shore-based industries during the war now wanted a life at home with their families, while others who had served in the army were no keener on going away again. This did not change until 1968, when the introduction of 'regular reliefs' guaranteed home leave to any sailor who had been at sea for six months. This proved a very popular move, one that increased the attraction of a life at sea and aided recruitment of quality staff.

Engineers, meanwhile, were recruited from shipyards or other professions and learned on the job, until, in 1952, the Board of Trade established a four-and-a-half year training course comprising two years studying engineering at a technical college, 18 months sea training, and 12 months practical training in an engineering works. The cost was imposed on the shipping companies, whereas before 1952, the engineers paid their own way – the cost in 1952 to the British Tanker Company was £800 per apprentice.

The first 60 apprentice engineers began their courses in September 1952, along withe more than 200 deck apprentices. Mike Williams recalls the work of BTC's training department in the 1950s.

"I see from my indentures that hang on my office wall that I got £110 for my first year as an apprentice in 1958 with BP Tankers. They had a fantastic apprentice training department run by Captain Ronnie Marsh, or Uncle Ron as he was known. Also, most of the Masters and mates were keen on training. The first Master I sailed with was Captain 'Winkie' R G Mott. Winkie had gone to sea in sailing ships and thought every apprentice should know how to do a long splice in wire, and insisted that you mastered at least one. We worked hard during loading and tank cleaning, but every day, one hour was set aside for study. After your second year, the apprentice spent four hours a day on bridge watch. There were examinations set every year by BP and all apprentices had to keep a journal," Williams says.

However, economic growth on land meant that the demand for engineers undercut the attempt to recruit trained/trainee engineers for the fleet and this was a perennial problem for BPTC until the early-1970s, when the shipping industry went into crisis. In 1976, cadet entry was reduced by one-third and by the 1980s, had ceased altogether, as crewing was outsourced to agencies. The training of officer cadets only resumed in 1988.

Cadets studying the marine diploma course at Poplar Technical College in London.

Above: Prince of Wales Sea Training School, Dover, Kent, England. Russell Purdy's class of 1972.

Right: On board *British Confidence* – Neptune, his queen and guard oversee the 'Crossing of the Line' ceremony for Russell Purdey and his fellow cadets.

Below: 'Crossing the Line' is an initiation rite for seafarers crossing the Equator for the first time. Russell Purdy, who went from school to train as an engineer with the BP Tanker Company, recalled how his initiation involved eggs, flour, fire hoses and finally the application of oil, paint and grease, before a dunking in the ship's pool. By a 'royal decree', he earned the Freedom of the High Seas from the Master of *British Commerce* in November 1973.

By Royal Decree

This is to certify that Russell W. Purdy was charged with trespassing on the high seas and duly appeared before: King Neptunes Court,
Once found guilty Russell W. Purdy was taken outside on the poop [illegible]
doctored by the vet then washed in gas oil when seen again
has the freedom of the High Seas Signed this the 12th day of November
1973.
By Order, Neptune

Witnesses,
(Master)
(Barber)

SPOTLIGHT
J H STOCKMAN – APPRENTICE

"It was during the summer of 1918 that I joined my first ship, *British Star*, as an apprentice of the British Tanker Company. With me went my bedding, pint mug, tin plate, knife, fork and spoon. The First World War was entering its final stages, but even so, the U-boats were still very active and *British Star* had just completed repairs after being torpedoed on her maiden voyage, two hours out of the Tyne.

As soon as we got to sea, en route to Port Arthur, Texas, in the US, we apprentices were placed on bridge outlook, a windy business at the best of times, with only a canvas dodger for protection. We were on a 'four on, four off' watch – but this didn't last long, for the Second Steward was put ashore as a hospital case and I assumed his duties. Though this brought no financial gain, there were other benefits! Money could play little part in our lives in those days, for we earned only 16 shillings and eight pence per month (about 80 pence) as a basic salary.

My next ship was *British Maple* – a coalburner – carrying as much as 500 tons of coal on deck. Two apprentices were employed as coal trimmers and we soon became expert at wheeling barrow-loads of coal along the deck to the boiler room hatchway. Her cargo holds were fitted with cylindrical oil tanks and cleaning these was a nightmare. It was easy to get lost in the holds when outside the tanks. She proved to be a wonderful ship for stowaways and once we found eight of them when discharging at Spezia in Greece. Some of them, I remember, signed on as crew, though we lost them in the US, immigration laws not being what they are today. It was quite common in those days for whole crews to go ashore and then fail to return. America was a land of promise and many took the opportunity of trying their luck.

We young apprentices had some exciting moments on *British Maple*. On one occasion, there was suspicion of a mutiny and the Captain had to carry a loaded revolver while the Second Officer covered him! We arrived at Tampico, in Mexico, shortly after the 1920 revolution. The rebels had extinguished the warning light and three ships were left stranded on the breakwater. Some of our crew went ashore only to return soon after, looking sorry for themselves, as they had been robbed and stripped of all their clothes!

It was during my time as an apprentice that we were caught in the grip of the influenza epidemic that raged around the world between 1918 and 1920, with occasions when more than half the crew were laid up ill. [The epidemic killed an estimated 50 million people worldwide.] I completed my indentures, receiving by that time the splendid sum of £20 per year. There had never been a dull moment and though we were always hungry and hard up, it had been a lot of fun!"

Corbis

Left: *British Maple* – 11,000 dwt – and perhaps the oddest ship to ever join the fleet. Launched as a cargo vessel in 1898, she was requisitioned by the Admiralty in 1914 and turned into a dummy battleship, acting as a decoy for the battleship *HMS Marlborough*. Mid-war she was converted into a Royal Fleet Auxiliary tanker by fitting cylindrical tanks in her cargo hold. She was purchased by BTC in 1919 and later served as a bunker depot ship in Southampton Water. She was scrapped in 1932 at the grand old age of 34 years.

Above: How the port of New York and the city skyline looked in 1923 – tempting some crew members to go ashore and never return.

SPOTLIGHT

GARY RICHARDSON – MARINE ENGINEER

Gary Richardson, former Chief Engineer, then engineering superintendent, and later engineering manager of offshore operations, recalls: "I grew up in Northern Ireland by the sea. My uncle had been a radio officer during the war, and I knew I wanted to go to sea myself. My uncle recommended that I go in as an engineer so that, in the event that I wanted to leave, I would be able to get a different kind of engineering job. I thought oil tankers looked like 'nice' ships so, aged 15 in 1961, I went to an exhibition in Belfast and then applied to a number of oil companies, including BP and Shell. BP invited me to an interview, so I got the ferry by myself and then the train to London, where I stayed in a hostel on the Cromwell Road. The following morning, I made my way to BP's headquarters at Britannic House. I was interviewed and then told I should go to Poplar Technical College in the East End, so I got on the bus and made my way there. I remember the interviewer asking me if I had a car. I was 15... I replied 'no'. He asked me if I had a motorbike... I replied 'no'. Then, he asked me if I had a bike... I did have a bike, and he asked me a few questions about bikes and ball-bearings. I think he was asking out of desperation. The rest is history, and I think it's called supply and demand. I was one of few who had found their way there, after all.

"For me, being an engineer on a ship is the best engineering job there is, because it covers every aspect of engineering you could think of; electrical, instrumentation, pneumatic, hydraulics, you name it, it's in there somewhere."

Gary Richardson, pictured with his wife, Linda, kept a journal of life at sea.

Opposite: Semaphore practice at Plymouth School of Navigation, England. The system of communicating by flag began on land in France in the 18th century. Handheld flags were further developed during the early-1800s when the maritime industry found that they were a fast and easy method of communicating between ships. It is still an accepted form of communication during an emergency, using flags in the daytime and torches at night.

SPOTLIGHT

DAVID BAILEY – NAVIGATING CADET

David Bailey started at the Plymouth School of Navigation in 1948, before, he says, the same school developed into a major pre-sea training establishment 'with hundreds of young men going through the process'. Through the connections of one Captain Johnson, Bailey joined BTC after the company sent a letter addressed not to him, but to his father, dated five days before Christmas 1948 and reading:

"Unless advised to the contrary in the meantime, we shall be pleased if you shall arrange for your son to take up duty as apprentice on the above named ship on Monday morning, 27th instant, at Newcastle-on-Tyne'. Bailey was given an agent's address, where he then received a letter from the chief marine superintendent, saying:

"It is the company's policy to give you every possible assistance during your apprenticeship to enable you to become an efficient deck officer. The Master of your ship, with the cooperation of his officers, will give you such duties to perform as will provide the best opportunity for you to become competent in your profession. Show courtesy and respect to your officers and obey all orders promptly, cheerfully and efficiently."

Rather ominously, the letter warned: "Nothing you are told to do should be regarded as beneath your dignity." The breadth of learning available to a young cadet was made clear: "For a successful career, your knowledge should embrace as wide a field as possible. And you should thus take every opportunity to learn all you can about the running and maintenance of the ship, her personnel, the main engines and auxiliaries, and the safe carriage of her cargo." BTC set out in its letter the various ways in which study and hands-on experience would be combined as part of the cadetship.

And so, for the 16-year-old Bailey, began an experience typical of many a young seafarer in the 1940s and early-1950s. The breadth of the exposure to different parts and workings of the ship was key to the future career development of every apprentice, and meant that becoming an officer was a very real aspiration – one the company expected to come to fruition. "Work hard and learn, and the company will reward you," was the clear message.

> "Nothing you are told to do should be regarded as beneath your dignity."

SPOTLIGHT

NINA BAKER – BP SHIPPING'S FIRST FEMALE ENGINEERING CADET

"I was born in the 1950s and brought up in central London, with no seafaring background in the family, but the housing shortage meant I was at least born on a Thames barge! I always loved ships and boats and cannot remember a time when the sea wasn't an obsession. My father used to take me down to the Port of London to look at the ships and, in my early teens, I decided I was going to be a sailor.

I thought I was going to have to go into the Wrens [The Women's Royal Naval Service], but the Wrens didn't go to sea then. In my teens, I wrote away to lots of shipping companies, receiving replies of 'We don't take women,' or 'We only take women as pursers or matrons.' I went to the Shipping Federation and a chap there thought there was a remote possibility that I could obtain a cadetship. He started wheeling me around different companies and talking to them behind the scenes.

At this point in the early-1970s, the Suez Canal had shut and the shipping sector was desperate for more staff to fill the extra ships that were going round the Cape of Good Hope. I came along at that juncture and companies were getting more open-minded. I had several interviews with BP. I don't know how many times I went to Britannic House. They told me to stay on at school and take my A-levels, which I did, albeit badly, with a view to joining after that.

I went to the appointed outfitters, with whom BPTC had agreed I would wear a Wren uniform. When I went for my first fitting, it was three sizes too big and had to go back because the fitters were all male and had taken my measurements very gingerly!

I went down to Plymouth in July 1972, aged 18-and-a-half and very excited. I knew I could do it. I had joined the Sea Rangers at 14, and what I had learnt in those four years meant I could do anything with a boat – I could row, sail, start a motor, tie a knot, and splice a rope, while the guys generally knew nothing. I was diligent, and got better marks than a lot of the class, and also won a couple of prizes.

Some perhaps found that hard to deal with because I was female, and I did have mixed experiences at college, many of them not at all positive. There was a lot of sexual banter, and it was never toned down just because I was there. I did pack my bags and go home once. But I went back after, I suspect, BPTC got on the phone and gave the college a good talking to, and I toughed it out.

I think BPTC, and other companies, realised later that they should have sent more than one female cadet to college that first time, but I never had any problems once at sea. My first ship was *British Willow* and, while with BPTC, I went on to serve on seven other BPTC ships.

We cadets were always hungry, because we worked so hard. I would eat around 4,000 calories a day – an American or British breakfast, 'tab-nabs' (between-meal snacks) at 11 o'clock, a three- or four-course meal at lunchtime, tab-nabs at three, a four- or five-course meal at 6, and sandwiches at bedtime. The food in BP was 'to die for', and I had my 'Four Bells' ration of naval rum like everyone else, especially welcome after the loathed task of tank washing. I sometimes had a slug in a cup of tea if I was particularly cold and wet.

My father and stepmother were assiduous at writing, and I always got the most mail on every ship I was on. My father was an architect and travelled a lot, but he always wrote every Sunday, wherever he was, and it was not uncommon for my weekly letter, when it turned up, to be written on a paper tablecloth or a napkin.

I was at sea for seven years and, in that time, I served with another female just once. BP was very good to me and when I left, in 1977, I was just looking for a change. I served with another company for a short time, before leaving the sea in 1979. I then did a Ph.D and had a family, and later worked at both Glasgow and Strathclyde universities as a research administrator, before changing career to become a Green Party councillor in Glasgow.

Forty years ago, I felt that I was blazing a trail for women in engineering, but I think women in the industry still have it tough. When I left the sea at the end of the Seventies', I think no more than 5-10% of the sector's intake was female and I believe it has hardly moved since. BP has had its problems, but, all these years later, I still have something of a soft spot for the company, because it took a chance, and did something that was, at the time, exceptional in the equality field."

After leaving the sea, Nina Baker went on to complete a technology-related Ph.D and worked in environmental management and academia. In retirement, she is a Glasgow city councillor for the Green Party and is active in promoting science, technology, engineering and mathematics for young people.

Below: *British Willow* – 21,000 dwt – launched in 1965 from James Laing yard in Sunderland, England.

"I went down to Plymouth in July 1972, aged 18-and-a-half and very excited. I knew I could do it. I had joined the Sea Rangers at 14, and what I had learnt in those four years meant I could do anything with a boat – I could row, sail, start a motor, tie a knot, and splice a rope, while the guys generally knew nothing."

Early conditions on board

Occupied by tasks and with constant assessment, seafarers from cadet to Master had little time to pontificate on the conditions on board. As if the challenges of being at sea for long periods, often not knowing much, or anything, about the timing of a return trip or when one might expect to be home, were not bad enough, conditions on board were certainly tough in the earlier part of the last century. Until the 1930s, when Board of Trade regulations changed, BTC's ships were typical of others of the period, with the deck and engine crew housed in accommodation in the fo'c'sle (the forward part of the ship) – primitive and cramped, but not as restricted as the conditions endured by the catering staff, who were packed into the poop.

Housed in multioccupancy spaces, some crew members were expected to provide their own bedding, consisting of a straw mattress, pillows, and towels, known at the time as a 'donkey's breakfast'. These were made of a sturdy canvas cover, stuffed with straw, and would have been an ideal breeding ground for parasites and other undesirables, probably not helped by the need to 'hotbunk' on occasion, when men would share the same mattress, one on one watch and the other on the next. Mattresses could be aired on deck in an attempt to freshen them up and the straw was generally emptied out at the end of a voyage. Whether the canvas cover would, or could, be used again, would depend on its overall condition. These were still being used into the war, but had, by all accounts, largely been phased out not long after.

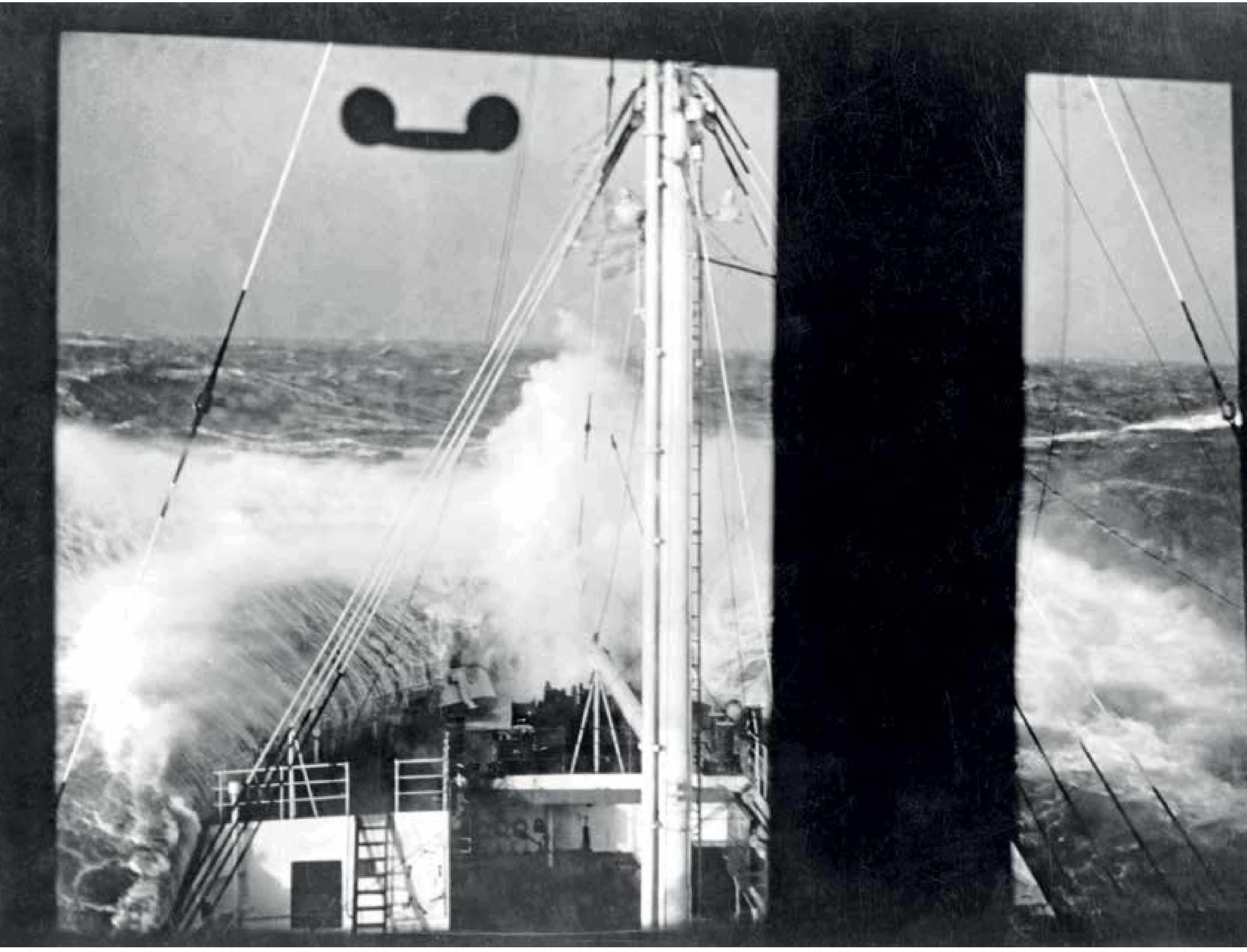
With just a bunk bed and a metal locker to call one's own, personal space was in as short supply as company bedding. Space would, no doubt, have been at a premium if it could have been exchanged for money, as would fresh water. Ships generally carried around 40 tons of fresh water in their tanks, to last any length of voyage, and one ton of water meant one ton fewer of cargo. Ralph Maybourn signed on as a navigating cadet in 1942, progressing to become head of marine division, and ultimately, director and general manager of BPS. He recalls:

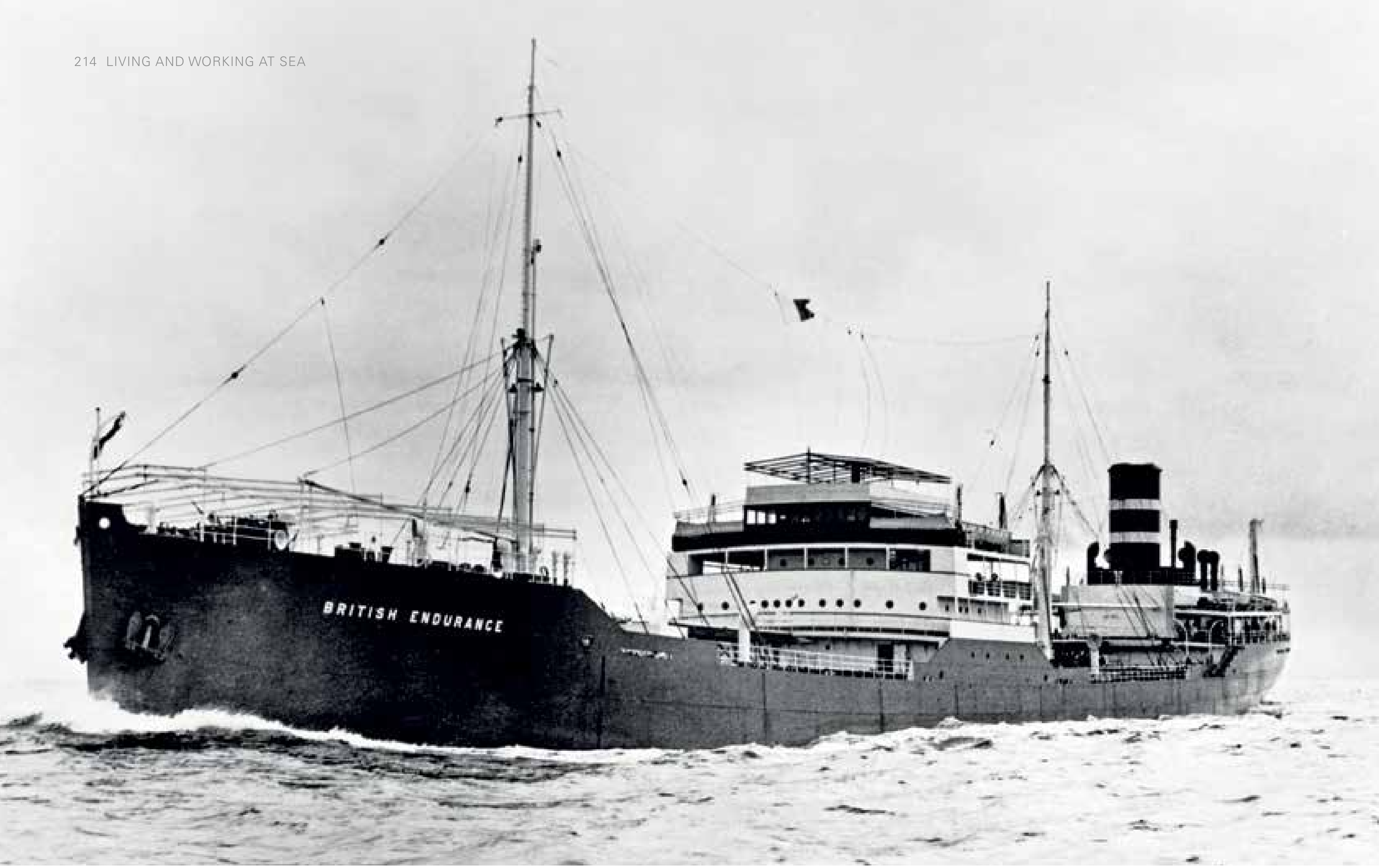
"Life was very different in those days. It was very difficult I guess by modern standards – much harder – but that's the way it was and the people just accepted it because when you were on an ocean passage, the crew and officers operate using a three-watch system so they were on watch eight hours a day, seven days a week. In bad weather, life was unbearable in the fo'c'sle, and going on and off watch could be hazardous, as waves swept over the decks. Meals were carried from the galley aft. Fresh water was rationed for all personnel on long voyages, when the hand pumps would be locked and the crew allowed one bucket of water twice a day. The navigation at sea was all done by taking sights from the sun or stars. Again, the conditions were quite different from today, as all the calculations were done by hand using pencil and paper, and this used to take anything up to an hour to get four stars calculated and put on the chart. If you'd got them positioned, fixed within an hour, a line or two of accuracy, then you were doing quite well. Coastal navigation was all done visually. If the visibility was bad, it was very difficult to do. Often, you didn't know where you were!"

Although most vessels had fan systems blowing in air, the temperatures below decks could be unbearable, not helped if the fans were actually blowing in hot air, as they sometimes did. In the tropics, the ships relied on awnings to protect sailors from the heat, which was especially severe in the Persian Gulf, but the ships could become like vast storage heaters that would take days to cool down once out at sea again. From the 1930s, until air-conditioning began to be introduced in the 1950s, sailors who had been at sea for six months and whose voyages were extended to Middle Eastern ports received what was known as a the 'Eastern bonus' to compensate for the sweltering conditions.

Above: *British Duchess* – 9,000 dwt – was one of more than sixty tankers built for BTC in the 1920s. Her fairly rudimentary layout included all aft accommodation for the crew. She served in the fleet for 28 years.

Opposite: *British Lady* – 9,000 dwt – was part of the drive to rebuild the fleet after WW2. She was one of 10 vessels of this smaller size built to enter ports in the developing world. Here, she encounters a 50-mile-per-hour gale in the Atlantic.





MP Colonel Allen enjoyed his passage on *British Endurance* – one of the new 'Three Twelves' tankers built in the 1930s and so known because they were 12,000 dwt, had a top speed of 12 knots, and consumed 12 tons of fuel a day. She had a crew of 45.

"Off Aden, we encountered an Arab dhow, flying distress signals owing to a shortage of water. Two men came alongside in a fragile canoe and got the water. We also gave them some ship's biscuits. By kind arrangement of the Chief, the engines were stopped for half an hour one day, which gave me time to throw a line for sharks. But the only shark I caught was the Captain, who tried to beat me at crib."

SPOTLIGHT

COLONEL ALLEN, MP – A PASSENGER'S VIEW

"I'd rather it was you than I," said the man sitting opposite me on the train. "The Persian Gulf sounds very romantic and all that, but you'll have a good deal of discomfort, won't you? What about the smell of oil in that tanker and the food? And you won't be allowed to smoke, will you? An empty tanker can bucket about, but I'll give you one tip: drink sherry. It tastes as good coming up as it does going down."

The depressing part of a railway carriage conversation is that there is so little chance of self-justification afterwards. I'd like to answer all that gloomy fellow's questions just the same. My journey to the Anglo-Iranian oilfields was romantic from the moment I found myself in the motor boat, *Susie*, my suitcase resting on a heap of root vegetables and a direct descendant of Daniel Peggotty (from Dickens's *David Copperfield*) steering us towards *MV British Endurance*, as she lay at her moorings.

Dusk was falling and the last day of the old year was going out in a sleety drizzle. We were alongside in no time and shown into our very comfortable cabins. The first thing I noticed was an ashtray on the chest of drawers and then a voice said: "There's a cup of tea in the smoking room, sir." Mr Jeremiad's public error No 1 exposed! Most of the ship's company had gone ashore to see in the New Year, but with the aid of a splendid wireless set, those of us left behind danced the New Year in.

On 1st January 1938, we slipped our moorings. I could not help comparing the cleanliness and comfort with the last time I had signed on. Then, I had sailed on a tramp. She was coaling when I joined her and everything was filthy, not excluding the language! At dinner time, I again wished to see my train acquaintance. Soup, choice of roast chicken, duck, pork or beef, peas, potatoes, plum pudding, cheese, fruit and coffee. No sir – you are wrong again – Hoppy could cook!

The third day out, I did smell petrol. But it didn't last more than half the day unless, of course, you went and poked your nose into the hold. I must admit we poked our noses almost everywhere. We were included in all the fun and games, such as the Board of Trade sports and the football pools. Near Gibraltar, one of General Franco's 'men o war' asked us by lamp: 'Who? Whence? Whither?' He was quite satisfied after we had repeated 'Sheerness' twice. I suppose he thought the answer was a dotty one (apologies to Morse experts).

Off Aden, we encountered an Arab dhow, flying distress signals owing to a shortage of water. Two men came alongside in a fragile canoe and got the water. We also gave them some ship's biscuits. By kind arrangement of the Chief, the engines were stopped for half an hour one day, which gave me time to throw a line for sharks. But the only shark I caught was the Captain, who tried to beat me at crib.

Nothing could have been more restful than that voyage and nobody could have been more kindly treated than the supernumeraries.

• *An extract from an article submitted to Anglo-Iranian's staff newsletter* Naft *(Oil), in 1938 – by Colonel J. Sandeman Allen, MC, TD, MP and entitled 'A Little Oil in a Cruise'. Colonel Allen was a passenger on board* British Endurance.

Clockwise from top left: BP Tanker Company staff at sea 1958-65. Apprentices taking oil and sea water densities on *British Adventure*; an apprentice signalling – one of the duties of a watchkeeper apprentice; Chief, Second and Third Officers taking noon sight on board *British Duchess*; lifeboat drill on *British Duchess*; newly qualified certificated engineer; and measuring the main engine cylinder liner for wear.

As conditions improved, only BTC/BPTC officers were provided with bed linen and towels, which were changed on a weekly basis. Later, crew were each supplied with two sheets, two pillows and pillowslips and rough grey woollen blankets. Soiled linen was eventually landed ashore in huge bags to be cleaned.

When crew members completed their term aboard, their linen quota was carefully checked before they disembarked. Any shortfalls had to be paid for and were deducted from their wages. This became necessary due to the fact that in certain foreign ports, blankets could be exchanged for other goods and services. Indian crews serving in colder climes were each provided with serge trousers, jackets, balaclavas and two pairs of heavy woollen socks.

The daily scrubbing and cleaning of alleyways and public room decks proved a laborious and time-consuming task for Assistant Stewards, with poor-quality floor coverings rapidly deteriorating in well-trodden alleyways. A series of replacements was installed during drydocking, using improved, hardwearing vinyl coverings, which were then coated with clear polyurethane paint. This quickly eradicated the need for prolonged cleaning and floors required only a quick wipe over with a squeegee mop. Later, these areas were overlaid with a new breed of durable carpet runners, which needed only a periodic light vacuuming.

A good many of BPTC's retired seafarers remember the days of the communal bathroom, housing up to three space-saving hip baths. Only the Master and Chief Engineer enjoyed the luxury of a full-length bath within their accommodation. Likewise, the introduction of air-conditioning units was confined to the same two senior ranks and the officers' saloon. Catering staff were known, on occasions, to bed down in the latter to get a reasonable night's sleep and relief from the prevailing heat, until discovered by the Chief Steward or Master!

The evolution of ship design led to one of the biggest changes – the move of accommodation aft and the provision of single cabins for many. The new ships coming into the fleet from the late-1950s onwards meant the end of old styling and décor, with new fittings and other delights retro-fitted in some of the older ships, too.

"The crew quickly took to the new ships and welcomed the innovations, not least in accommodation and amenities," according to Edward Platt, BPTC technical director. "The air-cooling units introduced in the British Industry class were soon fitted in the earlier supertankers and some product tankers, while the fully-centralised air-conditioning systems of the 35,000 tonners became standard. Also popular were the permanent swimming pools to replace canvas baths, and in 1956, 'talkie films' were provided on a hire basis.

"Extensive improvements brought officers' accommodation to good passenger standards, with light panelling, vinyl wallpaper and fitted carpets, contrasting both the dark mahogany 'old ships' look of the prewar period, and the austerity of the all-metal furniture of the T2s," noted Platt.

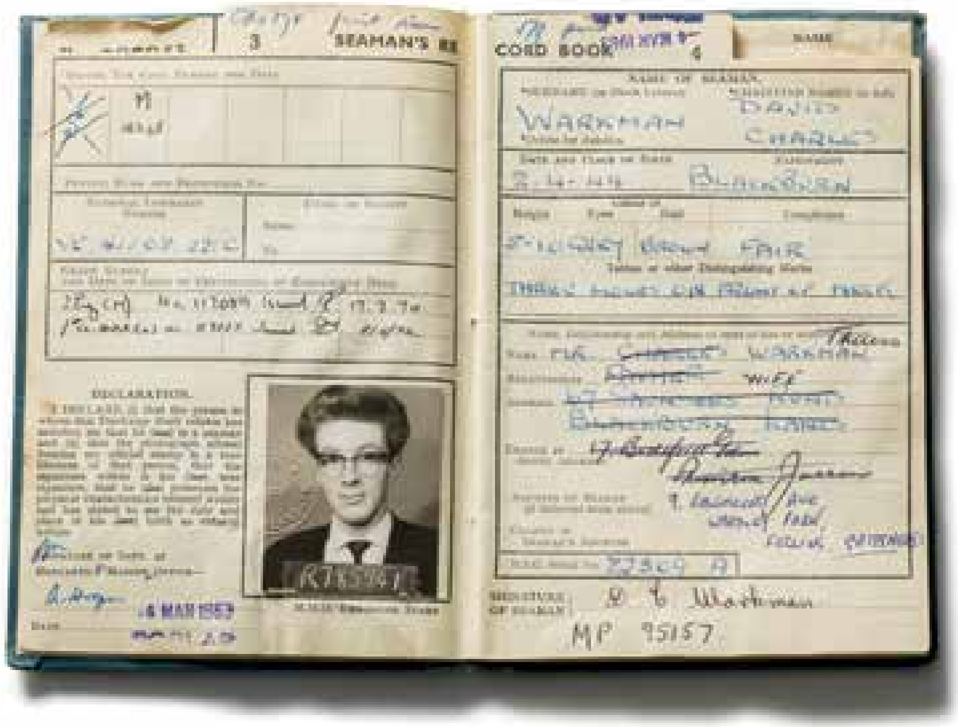
Eventually, all officers had single cabins with a shower and toilet, and on some ships, even the crew had cabins to themselves, albeit with shared facilities remaining.

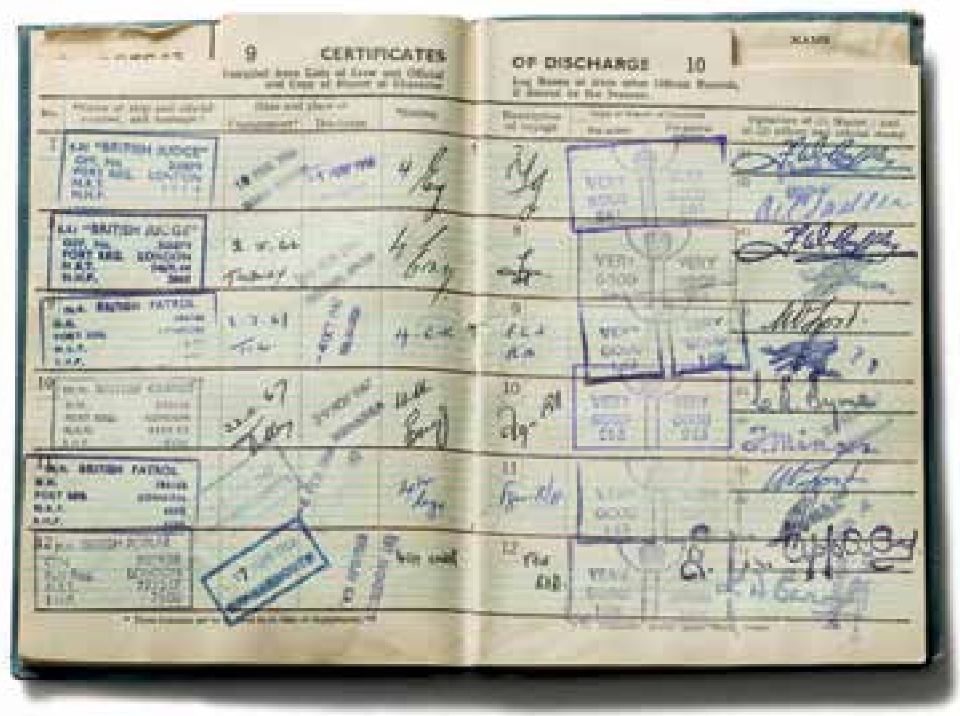
David Heaslip, one of the engineer apprentices in the first intake of the 'alternative training scheme' established by the company in 1952, eventually became head of engineering training in BPS. He contrasts the conditions then with those of the present day.

"For crews operating in tropical and semitropical conditions without air-conditioned accommodation in which to recover, life and times were stressful. Add to that the engine room atmosphere contaminated by asbestos lagging dust caused by vibration and an ambient temperature of more than 100 degrees Fahrenheit for much of the time, together with the noise from the turbo blowers – none of this encouraged the contemplative life."

Mike Hind, engineer apprentice at the time, recalls similarly uncomfortable experiences on

Navigating apprentices on board *British Duchess* – 44,000 dwt – launched in 1958 enjoyed more stylish accommodation and amenities.





British Duchess, the second ship on which he served and which was undertaking a 'shuttle service' in the Persian Gulf, transporting fuel from various ports to BP's bunkering station in Aden, a voyage pattern known as the 'Greyhound Run'. "My time on the Greyhound Run was undoubtedly one of the worst periods of my seagoing career as far as living conditions on board were concerned," Hind recalls. "The engine room temperatures were unbearable and boiler suits were dripping with perspiration within minutes. Salt tablets had to be taken regularly, along with copious quantities of water to prevent dehydration. Both physical and heat exhaustion were commonplace.

"To make matters worse, the accommodation air-conditioning system had failed and the delivery of the necessary spare parts had not materialised. It was impossible to gain a good night's sleep within one's cabin, so most of the engineers, in particular, carried their bunk mattresses up to the boat deck and slept in the open air, cooled by the regular nightly desert breeze. Subsequent fully air-conditioned ships were a joy to serve on after the *British Duchess* experience."

Of course, when trade routes for many of BP's ships later shifted to the Atlantic, harsh winters, huge waves and the biting wind brought a different problem, that of the cold.

Dave Warkman, who later became BPS technical director, recalls serving on a ship that had previously suffered at least one severe storm. "I've seen tablecloths slide off the table, and you've got to be at a pretty steep angle for that to happen on a big ship. I know a lot of people who would suffer constant headaches because of the tiring nature of keeping upright while the ship was at a 30-degree angle one way, before lurching the other way. Bad weather can also have tragic consequences. On joining one ship, Walkman was surprised to see the Indian ratings very deliberately avoiding walking over one particular spot in the engine room. On a previous voyage, a main engine cylinder liner had fallen off and had tragically killed an Indian rating. The story had stayed with the ship."

Opposite: *British Ensign* – 75,000 dwt. As tankers grew bigger in the 1950s and 1960s, the facilities improved, with permanent swimming pools replacing earlier 'canvas baths'.

Above: David Warkman's 'Seaman's Record Book', showing his certificates of discharge from duty on board BPTC tankers in the 1960s and 1970s.

At leisure

In the middle of the last century, work tasks, together with the 'Daily Dozen' exercises designed to help keep the crew fit and healthy, meant there was limited time aboard when individuals might have worried about occupying themselves. However, there were 'social distractions', such as deck golf and table tennis; darts and cards; 'yarning', 'tolerable' music that was made with combs and paper and the odd real instrument, such as a harmonica to listen to; letters home to write; diaries to keep (for apprentices, a requirement of the company, in fact), and library books to read, changed for a new set of reading matter when back in port, or exchanged with other ships.

Some learnt photography, and David Bailey recalls being taught to samba, along with half his fellow crew, by the Fourth Engineer on *British Duke*, so they "could all make a good impression at the next Mission dance". No doubt the sight of a group of 'seadogs' sashaying and prancing around the deck would have been startling for the occupants of any passing ships with a good telescope. And, until washing machines were installed on ships, there was always the 'dhobying' to get through.

"Saturday afternoons were 'dhoby days,'" writes David Stevenson. "All our smalls and other clothing had to be washed in a bucket. It was enjoyable to sit on a corner of the deck in the sunshine slopping one's washing up and down in a bucket of suds, 'blueing', and hanging them out on a stretch of old signal halyard, to flutter briskly in the southeast trade wind. They were dry by tea-time and Saturday's dog watches were given over to ironing sessions. Some of the results were not up to much. For instance, shirts were ironed according to the rhyme:

"First the cuffs and then the chest,
Damn and blast all the rest!"

"We rarely starched our laundry, although I remember one AB who could do a beautiful job, using the water left when the cook had been boiling rice," noted Edward Platt. "Of course, some of the old guard complained; one was indignant at the introduction of a washing machine, saying that if he could dhoby his overalls in a bucket, so should today's engineers."

Mike Hind recalls an important recreational activity enjoyed by the *British Navigator* crew; horse racing nights, usually at the weekend.

"This consisted of a length of green-coloured canvas being rolled out on a long table in the officers' saloon or bar, which had white lines painted on it to represent lanes and divisions in each, advancing up the length. Model horses with jockeys, manufactured on board, were then moved according to the throw of a dice to determine the winner. Monetary bets were placed by the players on their chosen horse; these being collated in Tote fashion to determine the odds on each horse, with the number of punters influencing its odds. A couple of fences introduced now and then, and the means of traversing them, could heighten the excitement. Although the value of permitted stakes was limited, these events proved hugely popular with both officers and crew alike and were sometimes combined, creating a coherent sense of comradeship between them. Often, sumptuous snacks were served to enhance the event."

Above: 'Dhoby day' on board *British Adventure* – 30,000 dwt.

Opposite: Horseracing and Harp in the dining saloon of *British Admiral* – 111,000 dwt.


HARP

Left: Crewmen high dive from *British Duchess* – 45,000 dwt – in Suez Bay in the 1960s.

Right: Enjoying a game of deck quoits on board *British Duchess*.

Dirty jobs

Even those who hanker after a life at sea from a young age are not automatically immune to the 'ups and downs' of the waves, at least not at first. Seasickness, if it was suffered, was something to be ignored until the body's equilibrium became so accustomed, it was no longer an issue, and tasks and duties needed to be carried out regardless. In any case, it was not possible simply to 'go home sick'.

"No one was allowed to be ill," says Gary Richardson. "Not at all, unless there was blood literally pouring down your face. If you felt ill for whatever reason, or had flu or something, or felt depressed, it was not even considered, because there was no back-up. If you were a cadet and you were on watch and you felt ill, someone would have to do extra time to take over from you, so it didn't go down well. I think the general view was that much of seasickness is in the mind, where it gets worse if you start thinking about it. The times anyone feels sick are when the ship is light and high out of the water and rolling more. I remember continually having to balance, particularly when going round the South African coast on the Indian Ocean side, especially in the dark, which certainly concentrated the adrenalin."

Sick or not, one of the most loathed tasks was undoubtedly tank cleaning. Up until the 1950s, this had to be undertaken with handheld hoses, and required individuals to enter the cargo space wearing a smoke helmet into which fresh air was pumped from above. Although the tank space was ventilated

Tank inspection and cleaning represented one of the most dangerous duties on board tankers. Here, an apprentice receives instruction on the use of the gas helmet from the Third Officer on board *British Adventure*.

with the aid of large canvas wind sails, the job was hot, unpleasant and dirty. Upon completion of this most hated of tasks, the tank cleaner was customarily rewarded with a peg of rum.

"Portable tank-washing machines and power-driven ventilating fans did not come into use until about 1950," says Ralph Maybourn. "It was still the practice to clean tanks for days, 100 miles off Land's End, for several years after WW2, then pumping the oil residues into the sea."

Another tiresome task is highlighted by Mike Hind, when serving aboard *British Courage* just before drydocking.

"She and her sister ship, *British Valour*, were unique in the BTC fleet in that they were fitted with special machinery and equipment known as 'emergency steaming gear', which enabled the ships to operate at 21 knots, considerably faster than their normal service speed of 15 knots. The appalling state of the machinery indicated to me that it had not been properly maintained nor tested as required, for some considerable time! In fact, I was horrified to learn, when I studied the repairs list, that there were more than 800 items to be dealt with even though the ship was only 13 years old; I had never expected or seen such an abundance of repairs.

"The soot-blowing operation in the two main water tube boilers is designed to remove the products of combustion within the furnace, gas spaces and uptakes. This maximises the transfer of furnace heat through the boiler tubes to the water within, in order to generate steam efficiently and optimise fuel consumption.

"The sequential air control system seemed to have failed, such that most blowers had to be operated by hand, using a crank handle similar to that used in early motor cars! The four long traversing blowers situated in the economisers and uptakes in each boiler required 230 turns in and 230 out, necessitating considerable and prolonged physical effort by the Junior Engineer on watch!

"Shortly afterwards I met with an irate Chief Steward, who had been innocently taking a shower when a geyser of rather nasty waste pipe water erupted from the plug hole, splattering him, his shower cubicle and the deckhead. Must have been the only time anyone came out of a shower dirtier than when they went in!"

"Such exertion had to be undertaken in appalling conditions of extreme heat and almost darkness, particularly around the boiler tops. Even the high temperature of the access ladder steel handrails required the use of thick asbestos gloves. To ease the burden, the engineers had developed a cooling system comprising a full welding helmet, to the top of which a compressed air hose was attached. This arrangement gave the operator the added problem of dragging the heavy air hose up the ladders after him.

"As I witnessed this apparition, similar to that of an astronaut floating out of the gloom in space, the term 'The Black Hole of Calcutta' came to mind. It proved to be the worst ship that I ever sailed on. When we eventually resolved the issue, the Junior Engineer responsible for soot blowing was ecstatic that he no longer had to don his 'space suit' and could simply press a button on the control panel!"

One seafarer recalled on Ship's Nostalgia website the compressed air gun device that was intended for clearing blockages in the ship's plumbing.

"You pumped them up by hand, fitted the outlet into the blocked orifice, and then pulled the trigger. Dangerous articles. On the first ship I was on that received one, one of the mates used it to try to clear a blocked toilet, and it cracked the pan into two halves. Later, on one of the VLCCs, I got a blockage in my shower drain, so I duly laid hands on 'the gun', followed the instructions, and cleared the blockage most effectively. Shortly afterwards, I met with an irate Chief Steward, who had been innocently taking a shower when a geyser of rather nasty waste pipe water erupted from the plug hole, splattering him, his shower cubicle and the deckhead. Must have been the only time anyone came out of a shower dirtier than when they went in!"

'Oily Bob' recalled a similar incident when he was a first trip junior on the *British Resolution* in 1996, when it was discovered that the galley sink had a bit of a blockage in it, which the mate decided to clear. He deployed the 'At will' fire hose and used a few rags to pack the hose firmly into place in the drain hole. The high-pressure water was turned on and successfully pushed the greasy blockage down the pipe until it found an easy way out. Unfortunately, the easy way out turned out to be the officers' bar sink!

"There was a hell of a mess with what could only be described as slugs of watery grease lying all around the place. The rest of the day was spent cleaning up the bar, including removing the entire carpet to clean it and then hanging it up in the engine room to dry for a day or so. Everything cleaned up well and the only remaining sign that something was up was the slight gap around the edges of the carpet where it had shrunk a bit. A lesson was learned for all that day: study the drawings of where stuff might go before forcing it to go that way."

Food and drink

Top and above: The main galley and dining saloon on board *British Sailor* – 33,000 dwt.

Food at sea has sometimes been less predictable than the weather, and at others, nothing but predictable. Merchant Navy internet discussion sites are awash with memories, good and bad, of the catering. There is particular nostalgia for rissoles, bubble and squeak and Welsh rarebit, apparently favourites on BPTC ships' menus. Also getting a mention are kidneys on toast, crayfish tails and the 'cheese beano' – a concoction of toast, spam and baked beans topped with melted cheese. Of course, a whole range of favourite 'tab-nabs', the afternoon trays of treats, such as buns and rolls, that could keep a hundred men happy, is fondly remembered.

With stores and space at a premium, few things went to waste, even the most unpromising-looking leftovers. "Redundant lifeboat biscuits, formerly known as 'Liverpool pantiles' in the sailing ship days, were mashed up with salt beef, known as 'salt junk' by our predecessors, and made into a sort of hash served up for high tea at 1700 hours," reminisces one online contributor. 'Oxford sausage' also seems to be a highlight.

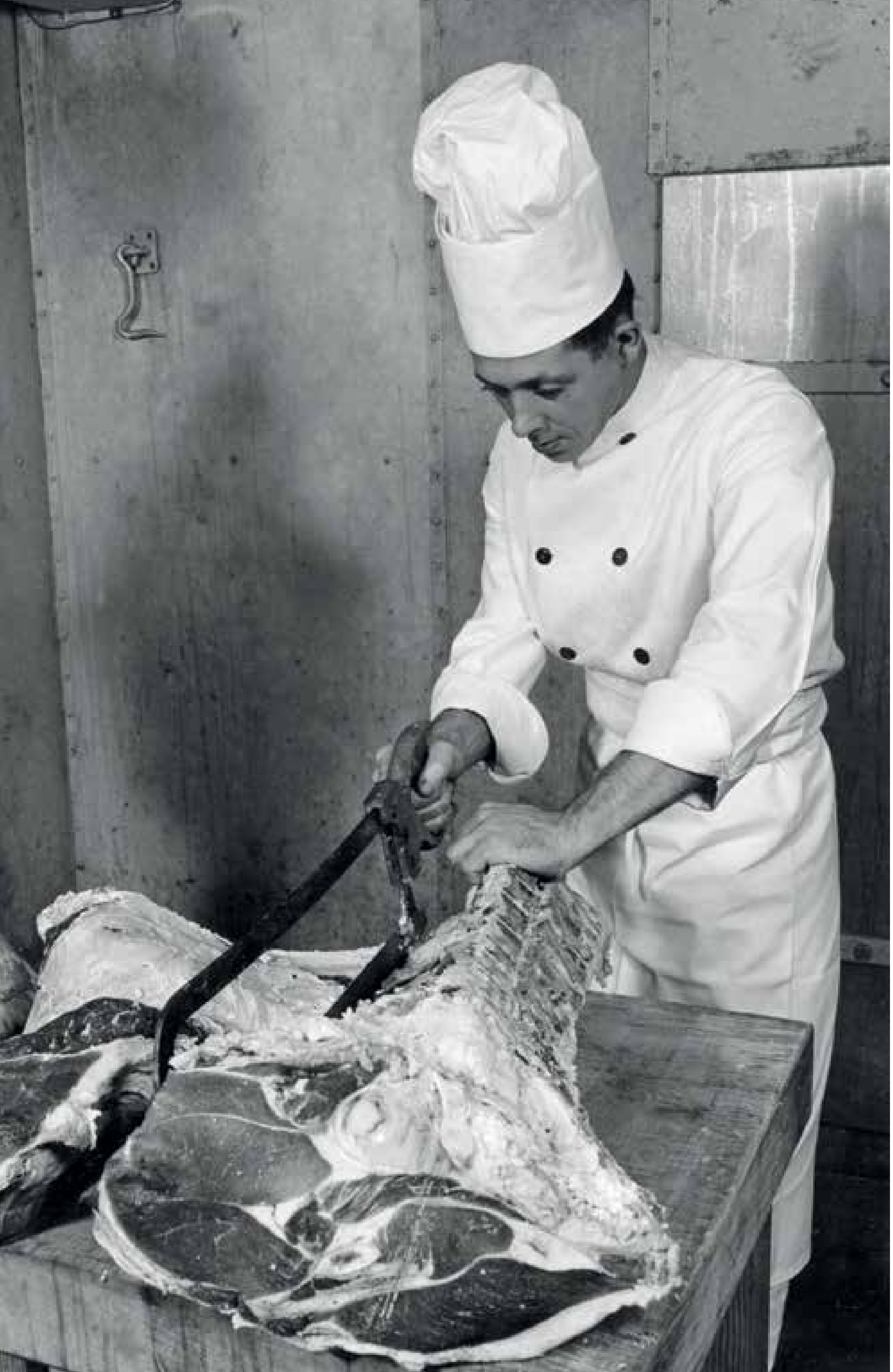
"The catering pack of tinned sausage beloved by BP Tanker Chief Stewards," recalls a sailor once on *British Sergeant*. "The sausage meat was 'injected' into the tins through a cross of wire mesh so when they were extracted they came out triangular shape. Weird and distinctive but a nice taste. The finished Oxford Sausage à la BP Tankers was simply one coated in batter with a dollop of tomato sauce. Well, I liked them anyway."

A subjective view maybe, but one dish that is claimed to have been 'unfailingly good, no matter how indifferent the rest of the catering', was pea and ham soup, complete with 'sippets', small pieces of toast or bread swimming in the hot broth. Evidently, though, however good some catering personnel were at conjuring up one hearty meal after another, for some, it just wasn't enough. Tales abound of engineers on *British Admiral* stocking up on eggs, bacon and black pudding during the day and then having a midnight fry-up on the steam pipes.

"They would then put a large offering into the lift and send it up to the bar deck. In return, we would send back ice-cold cans of Coke or 7-Up!" reads one memoir. "As somebody said, we were not starved of food, it was just that it tasted so much better cooked and served this way."

Kenneth Pickering, a BPTC Catering Officer recalls in his memoir, *25 Years – A Lifetime at Sea*, the sheer scale and physical effort involved in maintaining stocks to feed a tanker's complement of men and women for a long voyage: "As Australia was a good place to stock up, the ship was to store for 26 weeks. Unfortunately, it all had to be carried up the gangway as, when the ship started discharging the cargo, the cranes weren't allowed to be used. So, it was an all-day job, mainly done by the catering department because, apart from the deck hands on watch, the rest of the crew had been given time off."

The availability and quality of fresh milk was somewhat lacking, though. 'Shaky milk' no doubt refers to the watered-down condensed milk that crew often had on their cereal, shaken to disperse the milk into the water, while at least one 'Old Man' (the Master) enjoyed unwatered-down Carnation®. Condensed milk, or 'connie-onnie" did make a good cup of coffee, however, at least until Coffeemate® came along. Frozen meat and poultry delivered to vessels by contracted suppliers had to be butchered on board, requiring much time and skill to



The Chief Cook at work on board the *British Admiral*. Long periods at sea required butchery skills, as well the ability to prepare a meal.

minimise wastage. Incredibly, many ex-seafarers remember that labels on tins of condensed milk carried a rider which read 'Fit for consumption in HM Prisons and Merchant Navy only'! Nevertheless, although it radically changed the taste of tea and coffee, it was better than nothing!

It is worth reflecting on the facilities available to the cooks in those early days. The galley was somewhat ill-equipped by modern standards, the main component being the twin oven and hotplates. In the first instance, these units were heated by coal, carried aboard in sacks and stored in a bunker on the poop deck. Eventually, diesel oil-fired units replaced coal, these being gravity-fed from a header tank and using wicks in an oil bath, similar to a modern Aga® cooker. However, when the ship rolled from side to side in a sea swell, the heat transfer to ovens and hotplates was erratic and difficult to control.

Other equipment in the galley was sparse and very basic. The daily bread dough had to be prepared by hand in a huge bin, a time-consuming task requiring much effort and which had to be achieved in the early morning in order that the bread could be baked in the main ovens before food preparation began. Ice cream had to be hand churned and potatoes hand peeled in a similar way. Work surfaces were difficult to keep clean and, therefore, often unhygienic. The washing and drying of cooking utensils, crockery and cutlery was also done by hand. There was little space to store consumables in controlled temperature zones, although there was a deep freeze room available for meat and poultry.

While the quality of foodstuffs supplied to BPTC tankers in UK, European, South African and Australasian ports was adequate, this was not the case in other parts of the world. One BPS Assistant

The logistics of serving thousands of meals to a ship's complement away at sea for weeks and months at a time were considerable. Improvements in the standards of catering during the 1950s and 1960s, instigated by John Nicholson, were greatly welcomed by all.

Cook recalled that, in the late-1950s, the ship received locally-supplied meat and poultry in Abadan, the central storing port for all BP ships trading on the Indian coast. He witnessed a supposedly frozen full side of beef being carried up the gangway by four sweaty, blood-stained individuals – signs that defrosting was already well under way! In his view, such sub-standard product ought to have been rejected, but his lowly protests were ignored.

As Christmas was approaching, the Chief Steward had ordered turkeys', thus several crates of live birds soon followed the meat carcass up the gangway. These turned out to be the size of small chickens and were temporarily housed in the ship's sanatorium and fed scraps from the galley for a few weeks before the event, in an attempt to fatten them up! However, though they had grown somewhat, they still did not resemble a turkey as we know it. When it came to slaughtering the scrawny birds, no-one in the catering staff was prepared to do it and it cost the miserly Chief Steward half a bottle of rum to persuade one of the Firemen to do it. In the end, having cooked the poor specimens, the meat was like leather, and all the birds had to be dumped over board!

On the many Indian-crewed ships in the fleet in those early days, the staple diet consisted of rice, mackerel, halal mutton, spices and two eggs per week. Rice was supplied in hundredweight bags, making up a three-ton consignment, and had to be rationed out on a weekly basis from a storeroom in the centre castle. The same applied to the multitude of bagged spices, creating an unpleasant and choking dust cloud that had to be endured by the Chief Steward, who had eventually replaced the Indian butler on many ships.

The on board catering quality "improved enormously since the early days", Mike Hind recalls, "when supplies were ordered by BPTC's storing division and the Chief Steward had to make the best of what he got." Hind and many others note the changes following John Nicholson's appointment as catering manager in the mid-1950s and how the standard and variety of food on offer increased dramatically. He rightly became a key figure in the company's history and the seafarer's best friend!

"Nicholson instigated the regular Sunday buffet lunch, served in the officers' smoke room, as a change from the routine daily meals in the saloon. These were highly popular, particularly on the VLCCs rounding the Cape, where supplies of local delicacies such as fresh prawns, crayfish tails and occasionally lobster, as well as fresh exotic fruit, soon adorned the buffet tables and were washed down with vast quantities of South African wine, which, again, was unknown in the UK. I recall the angst on a ship when the cargo net from the helicopter was landed too hard on the deck, causing a loud crash and releasing a flood of wine down the deck. Grown men cried! While alcohol and 'lamp-swinging' have a long history in the Royal and Merchant Navies, BTC took the issue seriously. Apprentices were warned about the potential dangers of alcohol, to their minds and bodies, as well as to their careers. The letter that David Bailey received when joining BTC, stated:

"Do not form the habit of taking alcohol. Apart from its bad effect on your health, it can easily become a bad habit, which may ruin your whole career. You will be exposed to every kind of temptation in the seaports of the world, and your future health and happiness, as well as your self-respect, depend on your willpower and strength to resist them."

When a 'larger than life American' gave each crew member of *British Duke* a case of beer following the successful completion of a pipeline-towing operation in Umm Said, Bailey recalls the Master saying that as no one was allowed to drink, he would be buying the cases from each individual for 10 shillings each and "...would that be alright?" That polite question at the end, together with the suspicion that 10 shillings may not have been entirely representative of the value of a case of beer that could "be exchanged for tins of sweets or fruit", led Bailey to object, albeit mildly.

"I was admonished by the other apprentices; they were shocked at my even mild protest. But I did not have to wait for their chides. Captain McMichael was not asking me, he was telling me. One look at the Captain's face was enough to stop me in my tracks. It was a lesson. Never question the word of the Master."

SPOTLIGHT
JOHN NICHOLSON, CATERING MANAGER

In the mid-1950s, John Nicholson transferred from the fleet to take up the post of catering manager for BPTC. John was a Hebridean Islander, who had joined the company as an assistant steward in 1942. During his considerable years as catering superintendent, and eventually the company's catering manager, he was to have a huge influence on improvements in catering and hotel standards, not just in the BPTC fleet, but in the merchant marine industry as a whole.

Having spent time attending several London colleges to gain professional catering qualifications, he quickly determined that such formal education would be essential in training seagoing catering staff to better serve, as he put it, the 'creature comforts of all on board'.

In fulfilling his objectives, Nicholson designed and established suitable City & Guilds training courses in a number of marine colleges around the UK and encouraged other shipping companies, through the Association of Marine Catering Superintendents, to participate in the programme. Elements included such aspects as the proper storage and preparation of foodstuffs, variations in menu selections to meet sensible dietary and nutritional values, and basic hygiene standards.

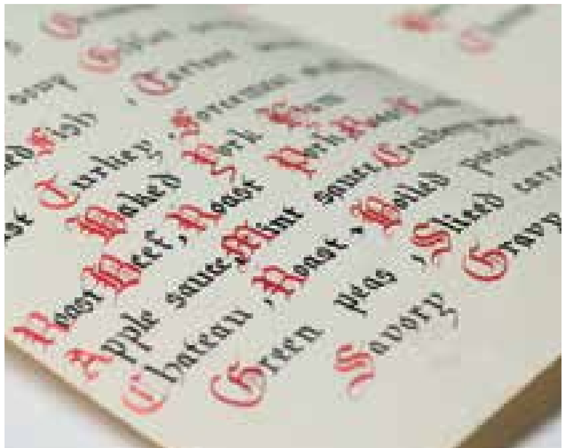
Nicholson also swiftly eradicated the differences in officer and crew meal standards, for which he concluded that there was no practical or financial reason. From then on, the menus provided were the same for both. To achieve this, the scale and variety of provisions and the budgetary allowance per person were increased at the same time. Incidentals such as tea, coffee, sugar, butter and table sauces, were no longer rationed and were free to use by all. Pantry fridges were stocked with an array of cold meats, cheese and salad stuffs, so that both officers and crew could have snacks outside normal mealtimes. He quickly became known as the seafarer's best friend!

As well as increasing the fleet's overall catering budget, he devised a dedicated 'bookkeeping' system for the monitoring and control of feeding standards, regularly compiled by the Chief Steward, countersigned by the Master and submitted to head office at the end of each voyage.

Nicholson also paid much attention to the design layout of, and the equipment fitted within, the galley and associated food storage areas. Low-maintenance stainless-steel work surfaces were introduced, along with all-electric appliances, such as ovens, hotplates, dough mixing, potato peeling and slicing machines, ice cream makers, and so on. Separate bread ovens were fitted so that baking work was independent of normal cooking requirements. Automatic dishwashing machines improved the quality of cleaning and reduced the burden on the galley staff.

Meat and poultry were now supplied, under contract, already deboned and in prepared portions, eradicating time-consuming butchering activity on board. Ships arriving at near-continental ports received these supplies transported from the UK. Other ports worldwide also had contracted suppliers, with the quality, price and level of service regularly checked. Inevitably, these inspired improvements took considerable time to organise and implement, though the professional training of junior catering staff was paramount in achieving the desired goals. Gradually, these professionally qualified individuals were able to influence fundamental changes in the attitudes of those older Chief Stewards who had hitherto stuck rigidly to 'the old ways'.

Currying flavour



Indian crews had long served the BTC fleet and the loyalty and mutual respect for which they were renowned was further enhanced by the culinary and cultural contribution, that they made. They often brought with them their own cooks who, invariably, hailed from Goa and knew how to keep people happy with authentic cuisine. In the 1970s, crews could be greeted with curries for more than one meal a day, including kedgeree for breakfast, chicken pilau for lunch, lamb dhal for dinner and, on at least one occasion, shark.

Those in head office who valued a decent curry rarely missed an opportunity- (probably owing to a sudden pressing 'business need') to visit an Indian-manned ship that called at the Isle of Grain. One Captain is said to have been so fed up with curries, however, that upon his arrival on a new ship, he threw every last gram of curry powder and chilli over the side. The Indian crews brought other interesting developments, too. Roy Fox, third mate on *British Engineer* in 1951, recalled:

"We had no freezer and carried live sheep as deck cargo for fresh meat that had to be slaughtered in conformance with the religious requirements of the Indian crew. The electrician took it upon himself to supervise care of the flock."

David Stevenson was employed first by Eagle Line, before joining the British Tanker Company in 1949. In his book *Ship and Shore, Life in the Merchant Navy*, he recalls the first time he was party, as an apprentice, to the effects of a degree of inebriation on his fellow seamen.

"It seemed to me that the whole business of signing off the old crew and engaging the new was conducted in a kind of alcoholic haze. At least, on the part of the crew. The officers were sober, but with few exceptions, the ratings didn't seem to care whether they were on or off the ship. Apprentices did not sign articles of agreement, but were indentured to the ship owner. These indentures I had signed some weeks before said that I was not to frequent "taverns, ale-houses, or houses of ill-repute".

The 'rules' were there, but, clearly, not always adhered to. A task that was often assigned to a ship's Third Mate was locating 'missing' crew before a ship was due to leave port. This task usually involved doing the rounds of all the drinking establishments in and around a port, even occasionally requiring a taxi if someone was suspected of going farther afield. Unlike the Navy, there was no Naval Patrol to round up errant seaman to take them back to the ship.

"With the British crew, you had to watch them in port because they went ashore and got drunk and were a bloody nuisance," George King, BPTC managing director, recalls. "But with an Indian crew, it was different, because they didn't get drunk and were always available, so we liked Indian crews. We liked British crews, too, but some of them were scallywags in port when they got tanked. Another of those dear old British habits."

There are no jammy kippers or curly butties for today's seafarers. Writing in *The Flag*, the company's employee newsletter, in October 2008, Paul Cromie could not be more complimentary about the conditions, catering and facilities on board.

"Living accommodation is ample with private cabin and shower room, not forgetting the constantly-changing sea view. When your own four walls become tiresome, you can always head to one of the best offices in the world. An office with a 360-degree panoramic view through huge windows must be something that most city slickers can only dream about.

"Every meal on board is almost a banquet, with a wide variety of good food, all prepared by the chef, giving a hotel-like feeling. The ships all have a bar fitted out with modern entertainment equipment and a good selection of DVDs and books to keep everyone happy. Gym membership ashore often costs a fortune and regularly goes unused after a few weeks of intense training. On board a ship, the time is there and the distractions aren't, so making use of the modern gym equipment is easy.

"At sea, the working day never really ends. There is no chance to leave the troubles at the office or just switch off and go home. An occasional false fire alarm in the middle of the night, or a berthing at 'silly o'clock' in the morning, is a regular occurrence. On the positive side, not many jobs give such a variety of work – from navigating a ship around the world right through to donning fire suits and breathing apparatus sets in the middle of the night for a false alarm. Realistically, how many people get the chance to do all these fun jobs?"

"We had no freezer and carried live sheep as deck cargo for fresh meat that had to be slaughtered in conformance with the religious requirements of the Indian crew. The electrician took it upon himself to supervise care of the flock."

ROY FOX

Above: Antonio Feliciano Luis, Chief Cook at work on *British Kestrel* – 115,000 dwt oil tanker – which came into service in 2006.

Left: Chief Cook Feliciano Escabarte and Second Cook Reynold Zubiaga serve the evening meals prepared from a list of crew requests in the galley on board *British Trader* LNG carrier, which joined the fleet in 2008.

Opposite: 1968 Christmas menu from *British Chivalry*, handwritten in calligraphy by Dave Warkman.

Staying connected

The question of connectivity is a thread that runs through almost any memoir of life at sea. And the irony is that, for some seafarers it is connectivity that they want to escape, while for others, the pangs of missing home have always been, and continue to be, the very worst aspect of life at sea. Through extensive use of the international postal service and yearned-for telephone calls from far-flung jetties, to the ability to telephone from the ship, and later to send an email, generations of seafarers have stayed connected to home through whatever means, and at whatever regularity possible.

Ralph Maybourn recalls from the 1940s and '50s: "As far as the ship was concerned, in those days, all communications were by Morse code and if you were on a voyage say out in the Indian Ocean, it could quite often be very difficult to get the messages. You depended upon your mail arriving and families soon learned to number all letters consecutively from the beginning of the voyage, so when you got to somewhere like Bombay where six letters came on board at one time, you knew in which order to read them."

For Gary and Linda Richardson sailing together, the main means of communication home was by letter. "To try to telephone was very difficult. First of all, it was very expensive in those days, and to telephone you had to book a call through the radio officer, who then contacted Portishead in the UK, and then they connected you to the land telephone system. So, for example, when Linda wanted to phone her mother, we would go up and book a call and we would sit in the radio shack and the radio operator would connect through to her mother, and I would explain to her that the system was called duplex, where you had to speak and then say 'over' and release the key. Trying to explain to your mother-in-law to say a sentence and then say 'over' and then you speak, well, I'm afraid it didn't seem to work."

The other option was to send a telegram, but that could be open to problems. Gary recalls a voyage when his wife did not accompany him: "I was due home on leave but the ship was unexpectedly diverted to the Gulf. Linda received a mistranslated telegram from BPTC saying: 'Gary unexpectedly going to golf.' My mother-in-law wasn't impressed, complaining to her daughter: 'Here you are at home waiting for him to come back and he's going off to play golf!'"

The long periods away, of course, meant that relationships, whether good or bad, on the ships were that much more acute. Gary remembers: "One of the things you had to do, without thinking about it necessarily, was to adapt to everybody's way of thinking and working, particularly, I think, where you would be on watch with another two people and, say, a Senior Engineer, a Junior Engineer and a Fireman, and you lived and worked with those people for literally months on end. And that applied to everyone on the ship with whom you came into contact. And the number of people that you didn't get on with, they were very, very few and far between."

Above: A radio officer transmitting in the wireless room on board the 45,000 dwt *British Duchess*.

Left: BPTC ships mailroom ashore at Britannic House in London.

Opposite: BP's first helicopter mail service to a BPTC tanker took place off Cape Town, South Africa, in September 1968, when the 37,000 dwt *British Comet* received a 1,000-pound load of stores, mail and films about 12 miles out to sea. The helicopter, a Sikorsky S55, took off from a special launch pad outside the Cape Town docks. Three slings of provisions were lowered by winch onto the for'ard poop deck, while the vessel kept moving at an estimated speed of 12 nautical knots. The operation was completed in 20 minutes.

SPOTLIGHT
RALPH MAYBOURN – DIRECTOR, BP TANKER COMPANY

"Marriage is an interesting area when you're seafaring. I didn't get married till I was 30, so I was known as a bit of a bachelor for a while. But, of course, the trouble with being married was fitting in a married life with the domestic side of it, because when you went away to sea, you never knew when you were coming home again. It could be as much as a year or more and, in my case, my first daughter was nine months old before I saw her and my second was five months old before I saw her.

In fact, I nearly didn't get married at first. We were hoping to arrive in the UK, so I could take leave and get married, but the ship got sent to Rotterdam instead and went back out to the Persian Gulf. The wedding was cancelled. We came back six weeks later, because we were due for drydocking, and I was then relieved just in time to get married before the end of August. My wife was a schoolteacher and she started school in September. This was the way life was, and you accepted it. You didn't necessarily enjoy it, but that's how it was and you just had to take things as they came," says Ralph Maybourn, who served BTC and BPTC as a cadet, Master and finally as director of the company.

Communicating with its crews, and helping them to communicate with and stay in contact with each other, is something the shipping arm has always tried to do, through staff publications such as *The Naft*, and *The Apprentices' News Letter*, which allowed apprentices to keep track of former classmates from their nautical schools, and, in later years, *BP Shipping Review*, *Fleet News* and, since 2005, *The Flag*. Not everyone appreciated these efforts at improved communication, with some wags dubbing the staff newsletters 'Shipping's Pravda'; yet great value was ascribed to the lists of crew movements, allowing personnel to keep an eye not only on former colleagues' whereabouts, but also on colleagues' promotions perceived to be ahead of their 'place in the line'!

BPTC's establishment in February 1959 of the Personal Services Scheme was recognition that the company realised the issue of prolonged separation from home, family and friends, as well as isolation from domestic developments and financial issues. It started working with the Mission to Seafarers and the British and International Sailors' Society to help alleviate some of the problems that were, at times, inevitable for those away at sea.

Some things never change. As Paul Cromie recalls in 2008:

"Life on board is very different to life on land. A reasonably small number of people almost become your family for three months at a time, changing every so often to bring a new face to the party. The opportunity to pop to the shop for a paper is not there. However, with the number of bad things that happen in the world, it is often nice not to know what is going on elsewhere.

"Living on a ship is almost like living in a private little world where the only real things that affect one are the destination to load, or discharge, and the quantity of food on board. Floods in far-off lands and the price of petrol at the pumps don't really matter out here."

> "We were hoping to arrive in the UK, so I could take leave and get married, but we got sent to Rotterdam instead and went back out to the Persian Gulf. The wedding was cancelled."

Left: *The Apprentices' News Letter* was a part-news and part-educational publication introduced as the intake of apprentices grew rapidly after WW2. It provided a means of connecting cadets at college and at sea.

Below: Ralph Maybourn, started as a BTC Navigating Cadet at 16 in 1942 and sailed in the Atlantic convoys of WW2. He attained the rank of Master and later came ashore, rising to director of BPTC. Seen here in 2014 on board a modern-day tanker – *British Robin* – as part of filming for the BP Shipping centenary celebrations.

Husbands and wives at sea

The option for officers to be accompanied by their wives on voyages was extended in the 1960s.

The improved conditions on board, and particularly those in the accommodation, opened the way for more spouses to accompany their husbands on overseas voyages. Until 1960, this privilege was open only to Masters and Chief Engineers, and it was extended to Chief Officers and Second Engineers with five years' seniority in the rank, followed by all Chief Officers and Second Engineers by the end of 1963. In addition, those at the rank of Second Officer, Third Engineer and Chief Steward could have their wives aboard for one voyage per year.

Linda Richardson joined her husband Gary on voyages after their marriage in 1969.

"I really wanted to go, just so that we could be together. We were joining *British Sovereign* at Portland, Maine, in the US, so we first got the ferry from Belfast to Liverpool, then on to Heathrow, from where we flew to Boston and then went on to Portland. The boat to Liverpool was so rough, I did wonder how I was going to do it for six months! We went everywhere on that first ship. We went down to Venezuela, up to Gothenburg, in Sweden, for drydock in Piraeus, in Greece, then round the Cape to the Gulf, and on to Sri Lanka and Japan, twice, and in all that time, I was the only wife on board.

"We had a cabin with a wash-hand basin, and the bed was a single bed with an add-on. As the single bed part had been worn over the years, the bed was on two different levels! I was able to use the ensuite bathroom in the owner's room, two decks up. On the second ship, by which time Gary was Second Engineer, we had a much bigger cabin with a proper double bed, wardrobes and a dressing table, a bathroom and there was a day room we could use. I loved the whole experience. I used to keep myself busy, I helped out in the bar, and I ironed uniforms. I clearly remember the challenge of ironing on a sloping ironing board!"

For some, the sea was even where they would meet their spouses-to-be. In December 1948, Jean Rutherford travelled to Abadan aged 15 with her mother and two younger brothers to join their father, who was an engineer with the Anglo-Iranian Oil Company. The family sailed on *British Swordfish*, and it was on the vessel that Jean met her husband-to-be, David Rutherford, then aged 19 and later to become BPTC's fleet safety manager. "I first met him when he came down to collect our passports on the day we embarked at Falmouth. It was 11th December. We didn't know how long we would be in Abadan for, and I thought it was a real adventure. David didn't say anything to me, but he put a note through the porthole later that day, asking me to meet him on deck. He was a terrible writer and I was trying to decide whether his name was David or Daniel. I wrongly went for Daniel, so his writing was evidently really terrible! I met him, and the rest is history. I had my first kiss on the Suez.

We got married in March 1951, just after I turned 18, and I sailed with David on a number of voyages, including when he was Captain. There were a few rough trips, and I soon learned never to wear silk or nylon nightdresses on the ships as you slid out of bed as the ship rolled. We had three children, and I was 40 and not very well when David came ashore. His move was a bit delayed, though, as he was in Nigeria at that point, and the Nigerians were not letting any relief in. I was getting so cross and I remember telling the company, when they rang me to say he wasn't coming home as expected, that they could tell him from me that I wasn't writing him any more letters and I wouldn't be here when he got back! He was home the following week, and he didn't go back to sea."

"We got married in March 1951, just after I turned 18, and I sailed with David on a number of voyages, including when he was Captain. There were a few rough trips, and I soon learned never to wear silk or nylon nightdresses on the ships as you slid out of bed as the ship rolled."

JEAN RUTHERFORD

5789

THE INCORPORATED
Thames Nautical Training College.
H.M.S. WORCESTER,
OFF GREENHITHE,
PORT OF LONDON.

Presented to David Leslie ... Rutherford

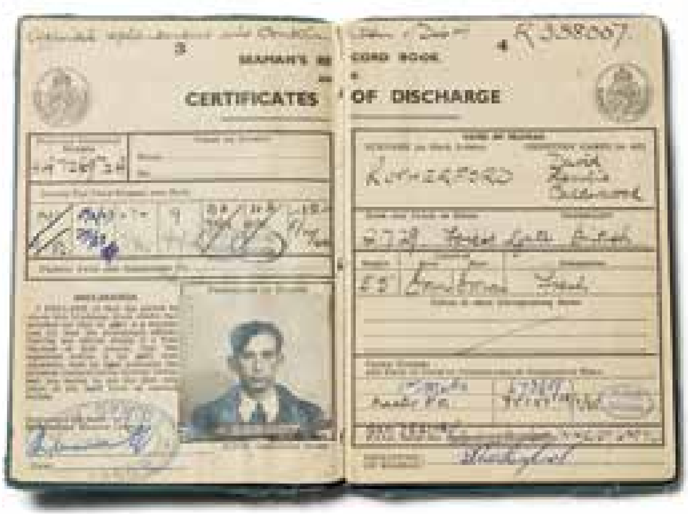
Date 19th December 1945

Certificate

Scholastic: First Class

Seamanship: First Class

Captain



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SEAMAN'S RECORD BOOK

CERTIFICATES OF DISCHARGE

RUTHERFORD

Top: David and Jean Rutherford on their wedding day in March 1951.

Above: David trained at the nautical college HMS Worcester in London. Both he and his brother, Nicholas, rose to become Masters in BP Tanker Company.

Left: David Rutherford's 'Certificates of Discharge'.

At sea today

The hierarchy of a ship is as important as it has always been. In the interests of maintaining discipline and good order, a clear path to decision-making and a military-like precision is required. It's not called the Merchant 'Navy' for nothing. With a few exceptions, the key factors on board necessary to keep a vessel at sea so it can fulfil its voyage requirements safely and efficiently are little changed. The Master is in charge. Officers still choose either the deck or the engineering path, and senior deck officers lead a small group of junior officers and ratings. Today's deck (navigation) officers still retain a huge responsibility for the ship, watch-keeping and making crucial decisions about navigation, steering and manoeuvring the ship.

The Rating's tale

Ratings have always formed a critical part of a ship's crew – skilled, competent seafarers carrying out essential tasks in the day-to-day running of the ship. Over the years, the roles undertaken by ratings have changed although the fundamental tasks remain. Today, three departments of the ship – deck, engineering and catering – distinguish the types of role that ratings play.

Like most industries, the numbers in each of these departments have shrunk with the advance of technology so that fewer people now keep larger ships operating. This means ships adopt a flexible approach to crewing such that when the weather is too bad for deck work, deck crews will be used in the engine room, but only when all else indoors on deck has been achieved. Likewise engine room ratings are trained these days to assist in mooring operations. What every rating has in common with all seafarers is training in fire prevention and sea survival skills so that the entire crew can help deal with hazardous incidents in an emergency.

While the role of Chief Petty Officer has gone from BP's fleet, the Master today can rely upon four petty officers in the shape of the Bosun and Pumpman on deck, the Fitter in the engineering department and the Chief Cook. On deck, Bosuns, Able-Bodied seafarers (ABs), and Ordinary Seamen (OS) undertake a host of tasks that may include watch-keeping support, steering and security patrols, as well as assisting with mooring and unmooring, and of course deck maintenance. Pumpmen operate and maintain the equipment used during the critical phases of cargo loading and discharging when in port.

Cyril Villarubia joined his first ship, *British Merchant* in 2013 and then served on *British Emerald* as an Ordinary Seaman in 2014.

"Our usual trading route on *British Merchant* was Trinidad and Tobago to Argentina, delivering liquefied natural gas. There is a lot of practical seamanship work, daily maintenance of the ship, watch-keeping and mooring work and we all look out for each other to stay safe. A normal working day is eight hours, plus overtime and later, after the work is done we spend time bonding at the bar."

Cyril was born and raised in Cotabato City in the Philippines and it is still his home when he is on shore leave. "I recall joining my first ship with mixed emotions, of nervousness but also happiness, and I am keen to improve my knowledge and skills in order to work my way up to become an able seaman. This is a professional job that makes me proud."

On the engineering side, ratings have often been known by a range of intriguing job titles including donkeyman, fireman, greaser, fitter, motorman, oiler and wiper. Some ships would also carry a carpenter or chippie. All played their part in keeping the ship's engines running smoothly, monitoring the boilers for water levels and steam pressures, and cleaning and oiling the multiple moving parts, under the direction of the engineer officers. Today a small team of ratings including a skilled fitter carry out fabrication and repairs in the engine room and provide support to the entire ship.

For a ship's catering department, the requirement for the skills of cooks and stewards is little changed and they comprise experienced teams that play a vital role in the functioning and good order of a successful ship under the guidance of the chief cook.

Ships are ships, and 'chipping and painting' remain an essential and very frequent part of the work day for most deck ratings when the weather is suitable. As every Master is quick to remind – 'rust never sleeps' – and it is a constant battle to keep big ships painted and rust free!

Right: Ordinary Seaman Cyril Villarubia raises the BPS house flag on board *British Emerald* carrying LNG across the Atlantic, November 2014.

The Cadet's tale

Officer trainees, or Cadets, whether deck or engineering, learn fast through a rigorous training programme. Many of today's cadets, like countless others before them, quickly find the sea is where they were always going to be. BPS sponsors around 100 new cadets each year. John Rafferty started with BPMS in February 2012, serving on *British Osprey* and *British Trader* as his two first ships.

"I was interested in aeronautical engineering, but, as a teenager, I used to watch the boats coming in and out of Greenore bulk port, on Carlingford Lough, Ireland, near where I lived. One evening, aged about 15, some friends and I were fishing and were lucky to be invited onto a bulk carrier in port. The crew was Irish and Eastern European and gave us a tour of the ship. I saw the set-up on board and realised there and then that marine engineering as a career seemed to fit for me. There is only one nautical college in Ireland, in Cork. I started there in September 2010, putting myself through the first two years and supporting myself by working in a quarry in the holidays. I visited the BPS stand at the open day and they had a lot to say and were clear about the direction I could go in. They took me on in February 2012. I completed my college exams that summer and joined *British Osprey* in the September.

"I was picked up in Rotterdam by an agent and left at the bottom of the gangway. I went up and ran straight into a massive argument that was going on about the cargo being too warm or too cold, I can't remember which. I went to find my cabin, looked around the accommodation and just kept out of the way for a bit! I got familiarised on the first day and then that was it, straight into it. I've found the more interest you show in what's going on and who's doing what, the more people will show you, the more they ask you to do and the more you learn. The objective is to be doing the Junior, or Fourth, Engineer's jobs by the time you leave that first ship. You work seven days a week from 8am until 5pm, with a half day on Saturday when everyone takes a nap! In addition, we are on duty once every three days, so we do a walk around about 9pm and again at 6am. We've all experienced fire alarms and other things we're not expecting.

Everything is really well run and when you go on board, it's a real family. People know that if they start an argument, it makes things a misery for everyone. The hierarchy is necessary to get the work done, but when work finishes at five o'clock, everyone is on the same level. Arguments do happen, but word travels fast at sea – it's in everyone's interests to work hard and get on with everyone else. We've got a state-of-the-art gym, Wifi – it's not fast but it works – a satellite phone in the cabins, which we can use for 20 minutes a day, we get four units a week, and magazines and new DVD releases are sent to the ship. It's always a bit like Christmas morning when the box comes aboard every month or whenever we get to port, and everyone rushes to get the film they want.

"I was on *British Osprey* for four-and-a-half months, and then on *British Trader*. I then spent a year back at college before joining *Northwest Shearwater* as additional Fourth Engineer in 2014. There is a fleet of new ships coming in and I want to work towards becoming Chief Engineer on those one day."

The Master's tale

One of BPS's longest-serving current Masters, Captain Patrick St. Lawrence, has spent his entire career at sea. Having joined BPS in 1970 as a 17-year-old Deck Cadet from Dublin, Captain St. Lawrence swiftly climbed through the ranks and received his Master's ticket in 1981. In May 2014, he was commanding his sixth voyage as Master of *British Merlin* (Aframax), trading in Australasia.

"My first trip as Master came about at rather short notice in September 1986, as the company had just come out of its restructuring nine months previously, had let a lot of people go and was looking for someone in a hurry. I was available, so I got the Master's job. It was *British Esk* and we were

Top: Former cadet promoted to additional Fourth Engineer, John Rafferty on duty on the LNG carrier *Northwest Shearwater*.

Above: Master of *British Merlin* Patrick St. Lawrence and his crew in 2014.

Opposite: The Master of the 115,000 dwt *British Merlin*, Patrick St Lawrence communicates from the bridge with the mooring station and the wheelhouse as his vessel arrives at the Port of Augusta, Sicily, with a full cargo of crude oil, November 2014. Behind the Master is the local harbour pilot.

"I've had some great teams and, as Master, you are only as good as the team you have supporting you."

CAPTAIN PATRICK ST. LAWRENCE

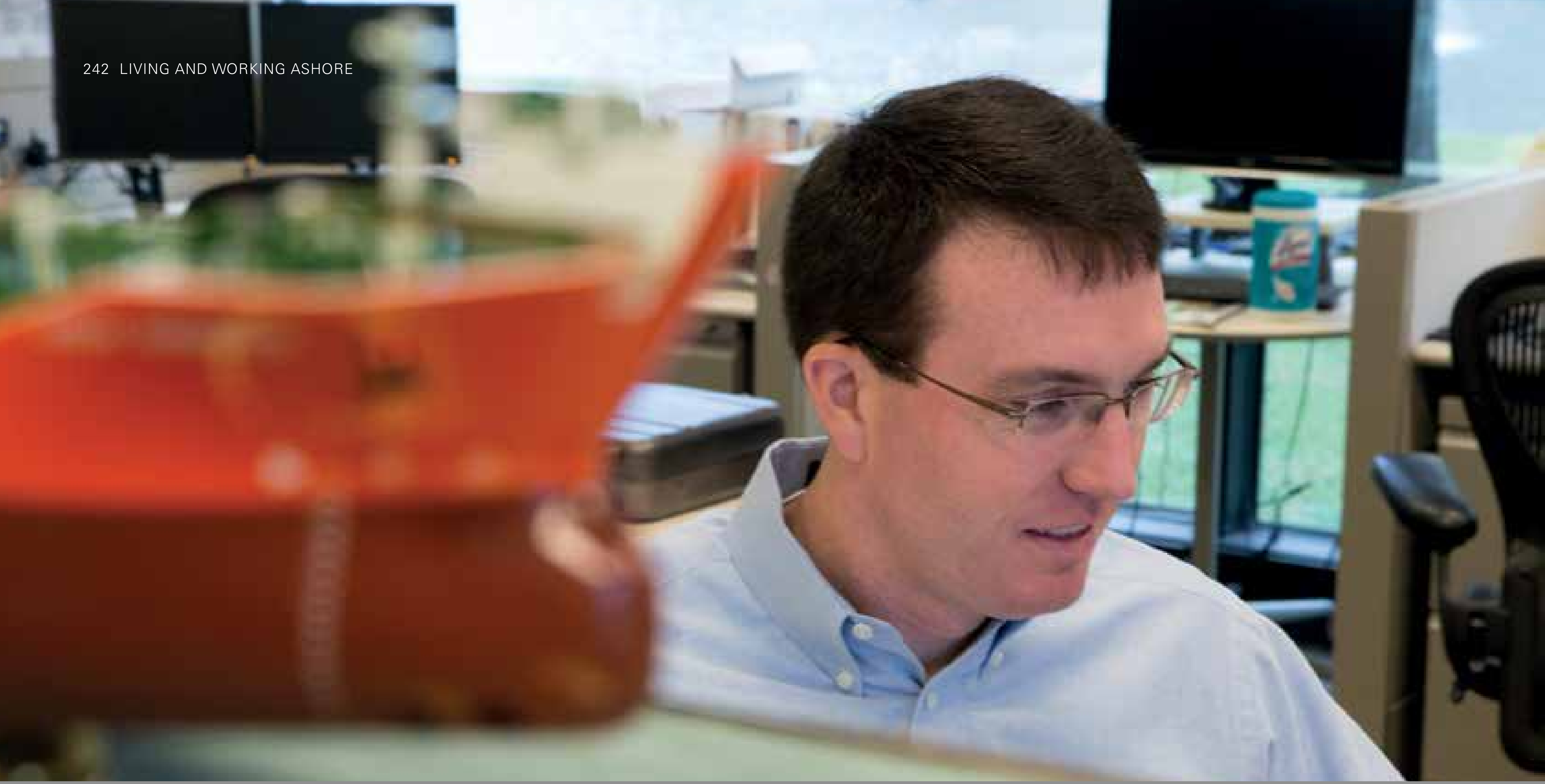
in the Med. One of the first conversations I had on board was pretty memorable. It was with the Chief Engineer, who knocked on my cabin door to say; 'Hello Captain. Your engine is broken.'

"Life on the ships has gone through some changes, of course. When DVDs first came in, and later WiFi, people disappeared to their cabins after dinner. By 9pm, it was like a ghost ship. But I would say that has started to change again in recent years – we have 'barbeques' of a sort, by cooking all the food in the galley and bringing it up to the deck for a picnic; we have race nights and karaoke nights, particularly popular with some of our Filipino crews!

One of the biggest changes of course is VSAT and the internet. Whereas ships would once receive a simple telegram stating 'L.E.F.O' – 'Land's End for Orders' – now voyage instructions mean reams of emails, which, if printed off, would amount to pages and pages and pages... and even more pages. Everything is managed to the 'nth degree, but that is the way it has to be today. All the procedures, processes and training help to keep everyone safe, and come into their own if ever there is an incident or unexpected challenge.

We spent 24 hours on a search and rescue once, in the 1990s, somewhere mid-Atlantic and in terrible weather, looking for a yacht that had capsized. We found the yacht's life raft and steamed up, sounding horns and making all sorts of noise, but, as we got no response from any occupants, we put our lifeboat out with a crew. The raft's occupants, we later learned, had been picked up by another vessel several hours previously, only no one had thought to tell us and the other vessels also searching. So, there we were, battling in a huge swell to get our lifeboat and crew back to the ship, but everyone pulled together and everyone stayed safe. That sort of thing makes you very proud.

"I have been serving at sea for more than four decades now. It's a job I love and it's testament to my wife and family that I am still here, doing this. I've had some great teams and, as Master, you are only as good as the team you have supporting you. I like to think I am fair but firm, and try to be approachable to all on board, though I am sure that there is many a cadet over the years who has thought differently! Anyway, I am not the most important person on board. That's the Cook."



In 2015, BP Shipping operates four principal offices in London, Houston, Chicago and Singapore, with a number of smaller offices located in other countries around the globe.

The view from shore

Sea and shore may be two very distinct areas, but they have always had to work in harmony if the whole operation is to run smoothly. Whether the requirements are a one-day voyage for a prompt cargo in northwest Europe, or a trip of several weeks for Middle East crude, support from the shore is as vital as it ever was if BPS is to get the best out of its own ships and those it charters.

A high number of shore staff are former seafarers themselves and have an encyclopaedic knowledge of the ships' workings. But those supporting the fleet from the shoreside have not all necessarily served at sea – it is their experience and expertise in ship design or construction, logistics, trading, procurement, human resources, communications, finance, law, security, or project management that lends itself to the task of running a safe, efficient and commercial BPS organisation.

Before a ship leaves port with a cargo loaded, a route planned, a crew on board and stores procured, the network onshore has already undertaken a myriad of checks to ensure a smooth voyage. In 2015, BP Shipping works closely with BP's integrated supply and trading division to meet trading requirements and match up the right cargo with the right ship each time.

BP Shipping's voyage operators work to devise the best route and plan the terms of the voyage, while the technical management team ensures that the ship is safe and well maintained. Procurement is responsible for furnishing the ship and crew with everything they need and facilitating the supply and delivery of all items en route, whether that's 30 chickens for roasting by the galley staff, an annual three million litres of lube oil for maintaining equipment, or a dozen blue ballpoint pens for the officers.

Bunkering teams arrange the ships' fuelling needs, while the port agency coordinators liaise with agents in ports-of-call to make sure that the ships are serviced efficiently.

In a time of heightened regulation, analysing and meeting stringent environmental, safety and security requirements is growing ever more complex. In addition to its own fleet, the BPS system holds details of more than 7,500 third-party vessels, any one of which it might seek to charter at any time. When BPS charters a ship to carry a cargo or charters one of its own ships to a third party, its legal and reputational risk is managed by its account opening analysts, while the ship vetting and clearance team carries out regular audits of each ship to verify its compatibility with BPS procedures and policies, as detailed in the group's operating management system.

The development and deployment of staff – whether arranging postings to vessels, recruiting cadets, or training in new skills and technologies – falls to the shoreside teams. This is no mean undertaking considering so many seafarers are located on dozens of vessels moving at varying speeds in very different parts of the world at any one time.

SPOTLIGHT

DON SHEARWOOD – RANK OPERATOR

"In the 1960s and 1970s, rank operators were part of BPTC's Personnel Department and were tasked with ensuring the people were on the right ships around the world. There were about nine or 10 of us in fleet personnel, originally marine staff, charged with contacting seafaring staff to take up their next appointments to join a ship, usually in the UK or at nearby continental ports. Ideally, this would be the day after the seafarer's leave expired, but, in times of shortage, staff were often prevailed upon to return to duty before the expiry of their leave. In time, we became known as rank operators, and it became common to send seafaring staff all over the world to join ships, with the introduction of the six months tour of duty practice. In earlier times, of course, tours of duty could last 12 or 18 months.

Rank operators were required to contact staff by any means available. We had the home address of every officer and petty officer/crew rating who was on contract. But we did not always have a telephone number. In these days of mobile phones and emails, it may be difficult to comprehend that contact with staff was less than instantaneous. There were many occasions when it was possible to write to staff, giving them sufficient notice of where and when to join the ship, plus such necessary information as the ship's agent. In those days, many places in the UK had two postal deliveries a day, no first class/second class system, and it was extremely reliable.

However, there were many occasions when it was necessary to contact an officer urgently, possibly because the ship had been diverted to another port, was sailing earlier than expected, or a member of the ship's staff had to be paid off at short notice, as in the case of illness or injury. And very few members of staff had telephones at home – or would own up to having such an instrument. Many officers withheld this information from head office as they felt it worked against them. Their reasoning was that, in an emergency, the company would first try an officer who had a telephone.

In such circumstances, we could use the British Shipping Federation, who would send someone round by taxi to make contact with the seafarer, but this could be costly. More commonly, we had to rely on the inland telegram service, requesting the recipient to phone the rank operator's number, reversing the charges. Before telephone area codes were introduced, which allowed the direct dialling of numbers over long distance, seafarers were given our switchboard number, NATional 1200, plus the extension, and the switchboard operator had to be advised in advance so that she would know to accept the call. The seafarer could choose to ring much later, even after the office closed, saying they were out when the telegram was delivered, but most of them were straightforward and honest, loyal company staff who responded in a positive manner.

But trying to get withheld numbers presented a bit of a challenge. I remember one staff member who we will call Mr Smith, whose father rang me one day to ask about his son's movements. I answered his question, but before ending the conversation I asked him what number he was calling from. 'Oh, Dominion 3476,' he said, or something like that, so I noted the number, in pencil, on Mr Smith Jr's record card. Many months later, I needed to contact Mr Smith Jr quickly, so I rang

the number shown on his card. Eventually, a man answered, and I said: 'Mr Smith?' 'No,' said the man. 'Oh,' I said, 'who's that then?' The man answered: 'I'm just a passer-by. This is a public phone box and it was ringing as I passed so I picked it up.'

On another occasion, I needed to contact a Chief Engineer, but when I rang his home, I was told he was away on holiday. I asked where he had gone and was told it was a caravan park in Oban, Scotland. I asked for the name, held on a few minutes, and was given the information, but they had no way of contacting the park. But I did not hesitate to ask the police to go and knock on his caravan door and deliver the message.

The Falklands War caused a few problems, too, as we had a number of ships that were chartered to the MOD and called to sail to the South Atlantic. One of them was *British Wye*, and when she received orders to go to the South Atlantic, the permanent Master of the ship was on leave. His rank operator (me) had the task of trying to contact him to rejoin the ship at fairly short notice. I rang his home, and a neighbour who had come in to look after the place answered. She informed me that he was caravanning on the Isle of Anglesey, Wales. I asked when he was due back. She thought he was leaving that day, but wasn't sure they were coming directly back home (East Yorkshire). So, I decided to try to intercept them en route. By various initiatives, I managed to get through to the police on Anglesey, and asked if it would be possible to put up a notice on the bridge connecting the island to the mainland, all in the interests of national security. I was told they would be happy to cooperate, and asked what I required. I asked if they could put a blackboard near the toll booths or departure point, asking the Captain to contact head office as soon as possible. I was told, yes, they could do that, but there was just one problem. I asked what that was. 'Well', I was told, 'there are two exits from the island and we only have one blackboard!'

On another occasion, I had to try to get a Captain to join a ship heading for the Falklands area, but was told by a member of his family that he was at Lord's for the cricket match. I did get hold of Lord's on the phone, and asked for a cryptic message to be put over the loudspeaker for the BP Shipping Captain to contact his employer, 'in the interests of national security,' but I don't think they took me seriously. There were matters like sudden illness or injury, death or tragedy in the family that occasioned the relief of a seafarer at very short notice, and, in my experience, seafarers invariably responded positively in such crises. It should, perhaps, be mentioned that there was a certain 'them and us' spirit that prevailed between seafarers and head office staff, though many of us, on both sides, worked continuously to break down this barrier. But seafarers rarely believed what they were told by their rank operators. I remember an occasion when I asked a certain Chief Engineer to return to duty a few days before the expiry of his leave in order that the Chief on *British Ivy* could be home to attend the imminent arrival of his first child. The Chief reluctantly agreed to fly to Lagos to join the ship, and it was later reported to me that when he met the Chief he was relieving, he asked 'Is your wife having a baby soon?' , 'Yes, next week.' 'Well,' said the relieving Chief: 'that bugger in the office was telling me the truth!'"

Port to outport

Accurate charting, measuring and knowledge of port facilities are three fundamental elements for the safe and efficient transport and delivery of both cargo and passengers by sea. Through close co-operation between ship and shore over the years, BP's shipping arm has been able to provide details of the ports with which tankers trade and has made important contributions to the accuracy of charts used by the industry to navigate the world's seas.

After World War 2, British Tanker Company not only had to replenish its fleet, but the remaining ships and their equipment also required considerable refurbishment. A key part of the navigation equipment was the folios of charts which were supplied to allow a ship to trade on a world-wide basis. It was, therefore, of importance to have the chart outfits properly vetted to ensure safe navigation and a unit was created in 1947, headed up by ex-Chief Officer, John Lamb, who set about rationalising the situation.

The first task was to establish a standard outfit, which comprised 1,450 charts, and then, as ships became accessible, chart outfits were removed, taken ashore and replaced with a fresh new standard outfit, plus both a company and Admiralty chart catalogue. The retrieved outfits were cleaned up, updated with corrections, and reorganised to match the new standard outfit, then held in the office and eventually sent out to replace the next ship's equipment to be serviced. This system persisted throughout the life of the unit, according to Peter Denly, marine superintendent, who took charge of the unit in the 1960s. "In the post-war years, a hard look was taken at the work entailed in correcting charts at sea. With navigation marks being re-established, lighthouses being relit, wrecks to be marked, and a host of other information to be included, the burden on the Second Mate was awesome, involving many hours of work simply chart correcting each week. It was, therefore, decided to ease the load by cutting out corrections on charts where the information was not relevant to the navigational needs. Lists of corrections to be applied accompanied each notice to mariners posted out from the office, and by this means, the corrections load was frequently halved compared to the list published by the Admiralty."

The overall benefits of the chart-correcting service were quickly apparent, with the standard of accuracy of corrections improving and the charts being in generally better usable condition, and it was concluded that the service should be maintained as an essential safety device. The chart section of the marine department comprised two mariners and four shore staff and was initially housed on the ground floor of River Plate House in London. "In 1970, after many trials, a set of tracings was supplied to match each correction to be applied, which further significantly reduced the amount of time needed to maintain a chart outfit and, more importantly, enhanced the accuracy of the correction applied and, hence, the reliability of the chart," recalled Denly. "BPTC was the only shipping company to provide its ships with a chart-correcting service, but within a year of the tracing service being provided, the idea was adopted by the commercial chart agencies and the British merchant fleet was able to benefit from this labour-saving and safety-enhancing procedure."

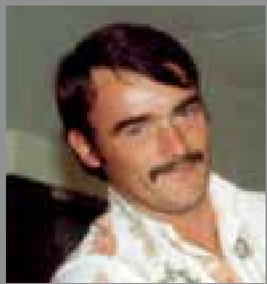
Across the 100 years of BP Shipping, company employees have found themselves posted to locations around the world where their maritime skills were needed to support the fleet and the development of BP group operations. The period of secondment was sometimes as long as 20 years, although shorter assignments became common in later years. 'Out-port superintendents' – as these positions became known – fell into two main categories: BP refineries and ship repair ports.

At the refineries, expertise is required in the design, operation and maintenance of loading/discharge jetties and associated equipment, appropriate mooring facilities, as well as managing the operation of company-owned marine craft, such as tugs and mooring boats.

In ship repair ports, engineer superintendents would be deployed to ports with major shipyard facilities that are used frequently by BPS to undertake periodical dry docking events and incidental/emergency repairs. Prior to 1970, it was a statutory requirement for the vast BPTC fleet of crude and product tankers to be drydocked on a yearly cycle, requiring the technical and commercial management of a multitude of such events on a worldwide basis.

Of course, across the years, BP Shipping's naval design and engineering staff has been instrumental in the many ship-ordering and construction programmes for the fleet – working closely with yards on ship specifications and supervising builds with personnel living and working in proximity to yards around the world. In yards where multiple ship orders were placed, residency periods could be significant, in which case reliefs were arranged.

Teams often consisted of a shipbuilding manager, supported by a naval architect, steel inspector, engine inspector, electrical and instrumentation engineers, and a paint inspector, all of whom were resident for a considerable time during the building programmes. Today, BP Shipping has many highly experienced staff seconded out to BP group businesses in support of its role of providing marine assurance around the world.



SPOTLIGHT
JOHN TAYLOR – OUTPORT SUPERINTENDENT

Above: BP's Little Aden refinery in Yemen, located adjacent to the eastern approaches to the Red Sea.

Below: John Taylor's 'company car' during his time as marine superintendent engineer in Aden, Yemen during the early 1980s.

In September 1979, when John Taylor was told he would be appointed to the post of marine superintendent engineer for the port of Aden he could have been forgiven for having mixed feelings. "Central postings had told my wife Jayne and I that Aden was a 'hardship posting' – no formal schooling facilities, occasional difficulties with food supplies; poor communications. I had called in to Aden during my sea days in the 1960s and 1970s, and I could recall the oppressive heat and the desire to get the hell out as soon as possible!"

BP built a refinery at Little Aden in the 1950s primarily to produce bunker fuel for the strategically placed port of Aden to supply the myriad of vessels that were plying from Europe and the Far East via the Suez Canal. The closure of Suez in 1967 had led to the port's waning influence and in 1977 BP decided to pull out. Now a marine superintendent engineer was required to oversee a two year hand over to the local Yemeni owners.

With two children, it was not an easy decision but the attraction of a short term secondment convinced the family to take the plunge with the Taylors' older daughter Samantha staying on to continue her schooling in the UK.

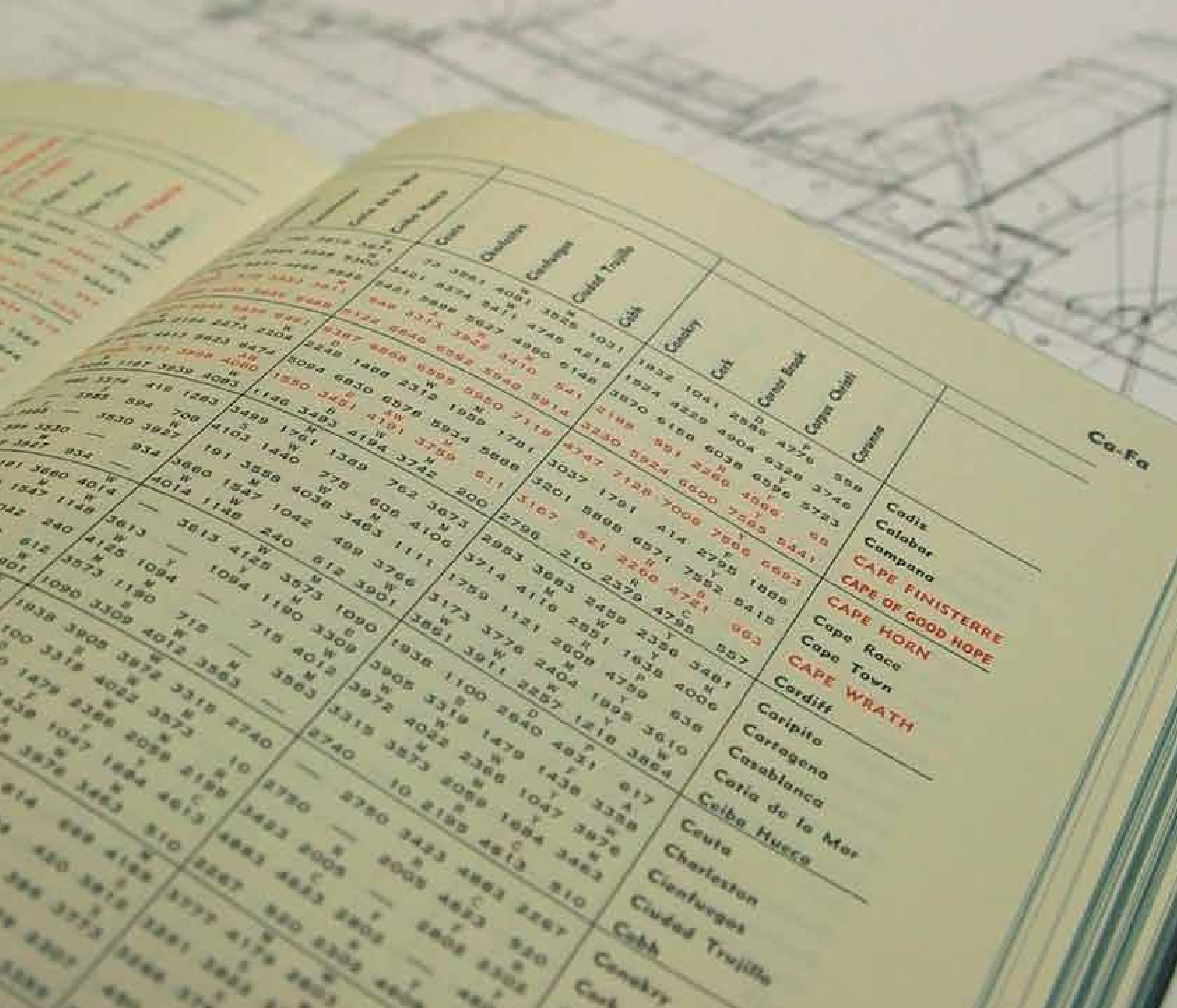
John's primary role was to provide a safe and efficient service for berthing and unberthing of all tankers using the oil terminal and to operate in close coordination with the Port of Aden Authority. "We had two berthing/firefighting tugs, three mooring boats, an executive passenger launch and a workboat. The refinery also had a 3,000 ton product carrier. The nuts and bolts of my job was the day to day operation of the craft and their maintenance and repair. BPS and Lloyd's Register also entered into an arrangement whereby I carried out the duties of acting surveyor for the port which proved an extremely interesting experience in seeing how other ship owners operated their vessels."

Although the expatriate staff had dwindled from the peak years, the Taylors quickly adapted to their new circumstances with Jayne taking on running the local school with daughter Belinda enrolled. Belinda later began to travel 25 miles to Aden and back each day to the International School. As a hardship posting, superintendents and their families were granted two leaves home per annum, being replaced by temporary stand-ins from head office during their absence.

"The work experience was tremendous and it was equalled by the social experiences too," recalled John. "We lived in a style similar to ship board life as the community was so small and integrated. We took full advantage of the legacy of sports and social club facilities that BP had bequeathed."

The posting was extended by a further year, and John looks back on his time as an 'outport super' with great fondness. "The indelible memories for us will be the closeness of the lifestyle, the learning, the language and the wonderful friendliness of the local people as well as the marvellous sun rises and sun sets over the barren rocks of Aden."

"Central postings had told my wife Jayne and I that Aden was a 'hardship posting' – no formal schooling facilities, occasional difficulties with food supplies; poor communications."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CAPE OF GOOD HOPE
CAPE HORN
Cape Race
Cape Town
CAPE WRATH
Cardiff
Caripito
Cartagena
Casablanca
Catia de la Mar
Ceiba Hueca
Ceuta
Charleston
Cienfuegos
Ciudad Trujillo
Cobh
Conakry

The BP Tanker Company Worldwide Marine Distance Tables published in 1958 is held in the BP Archive, University of Warwick.

The BP shipping marine distance tables

The port information branch, staffed by four marine superintendents and three technical assistants was an important element of BPTC's marine division in its role in support of the safe operation of the owned and chartered fleet. Its remit included acquiring a mass of information related to the safe navigation of BPTC's tankers, including routeing, water depths of ports and their approaches, port-to-port distances, terminal facilities, etc. It also retained a master set of the charts used in ships. Elsewhere, the branch worked closely with inhouse marine civil engineers, whose expertise and knowledge were used on the design and development of new ports and terminals, such as Hound Point, BP Refinery Rotterdam, Kwinana, Valdez, LNG Export facilities Das Island, Isle of Grain, and Sullom Voe, among others.

In 1958, the BP Tanker Company published its first set of *World-Wide Marine Distance Tables* which provided highly accurate distances for routes plotted from port to port – taking account of the knowledge built up by the thousands of voyages completed by BTC and BPTC vessels. The tables recorded 'real' distances which took account of deviations from a more direct route caused by the many diverse navigational hazards and established traffic separation schemes. They were compiled by a large team of Master Mariners led by Captain W. M. Hutchison, using Admiralty charts and the company's chart information, which had been brought up to a very high standard by the chart correction unit. By employing traditional navigational formulae and by physical measurements on charts, the team calculated all the distances between around 100 ports worldwide used by the oil tanker industry. This edition was reprinted and a second edition issued in 1976, which was expanded to two large volumes containing distances relating to more than 1,300 ports. With the expansion of the book, other shipping sectors in dry cargoes and containers began to use the tables and they became a standard order when equipping newly-launched vessels.

In the 1980s, BP Shipping produced a Windows-based computerised version of the distance tables called 'Port to Port'. With input now from BP Marine, the sales arm for BP's marine fuels, the tables began to incorporate information about the availability of fuels and lubricants. This enabled BP Marine to list its presence worldwide, port by port. In 2000, with computing power and sophistication advancing rapidly, a group of retired BP Shipping employees who had been involved with the distance tables for a number of years addressed the problem of producing up-to-date tables using computers and electronic charts. Discussions between the United Kingdom Hydrographic Office and other software houses resulted in a contractual agreement with BP Shipping to produce a new version of the tables. A new company, AtoBviaC plc, was formed to undertake the task and, following extensive testing and verification of data, a new version of the BP Shipping Marine Distance Tables was launched in 2004.

The tables are still calculated using routes plotted by experienced master mariners incorporating recognised industry voyage-planning methods rather than computer algorithms. The tables cover more than 3,000 of the world's most frequently visited ports and continue to increase as further ports, terminals and berths are commissioned. What is remarkable is that 50 years on from their first publication, the BP Shipping Marine Distance Tables have become the de facto industry standard not just for voyage calculations, but, also as a key determinant of the Worldscale Freight Rate Schedules which underpin commercial chartering arrangements across the shipping industry.

Chartering, vetting and supplying

All in all, shore-based support is much more than support – it is a vital part of the whole business of keeping BP Shipping's owned and operated fleet transporting cargoes safely and efficiently and in a manner that maximises earnings while minimising the impact on the environment.

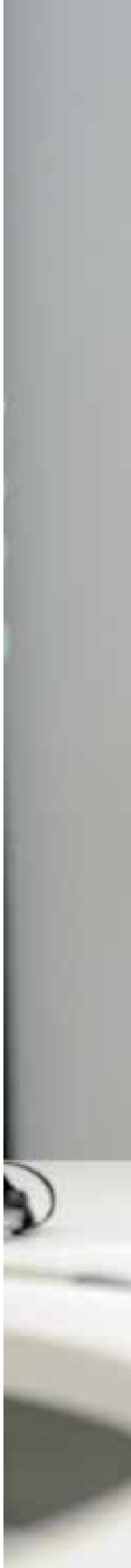
In 2015, the job of BP Shipping's commercial analyst is to maximise the amount of money that BP's ships earn from each voyage they undertake. The commercial team takes all the claims from a voyage, from freight and demurrage to all 'extra expense' claims such as route deviations, additional bunker fuel, or an inport service that was more expensive than expected. Against the agreed terms and conditions for that voyage, they calculate what BPS can and cannot claim under the charter party. This applies to BPS owned and time-chartered ships, so that it can track the dollar-per-day earnings of the vessels it uses longer-term and look for opportunities to add value, and earnings to future voyages. The commercial analysts also keep track of payments received and chase claims if required. Ships' earnings are entered into a monthly report, which goes to the company's finance team.

Vetting and clearance activities provide critical assurance to the business that the chartered vessels that carry BP's cargoes comply with international regulations, whether at sea or coming into a particular port, and that they compare to BPS's high standards observed for the owned/operated fleet. Vetting and clearance employees form a diverse and far-flung team that travels the world assessing ship owners and potential BPS partners and charterers.

One of the most visible shore roles, and a key line of support and communication with the ship, is the ship operator. Split between 'clean' (products) and 'dirty' (crude oil) ships, each operator looks after a certain number of vessels within his or her region, until a ship passes into a different region and a colleague takes over. From notification until the voyage begins can be anything between two hours and a few weeks, depending on the type and location of the cargo and date of discharge, and the fast-moving world of oil trading means the duration and route of a voyage can still change overnight. The operator answers questions about the ship, whether concerning the draft or minimum manning needs, and informs the ship of the fixture through the BP Open Shipping System (BPOSS), detailing load and discharge ports, voyage start and end times, and the exact cargo grades and quantities.

Post-voyage, the ship operator records actual arrival and departure times, bunkers, bill of lading and cargo remaining on board, as well as anything that may have positively or negatively impacted the profit and loss of the voyage, whether the procurement of cheaper bunkers, or weather delays.

Ensuring the ships and crew have everything they need, from spares and technical equipment to food and stationery, and supplying it all on time and at the right location, is the role of procurement. The team is instrumental in supporting the safe operation of the fleet, and managing suppliers and contracts to secure the most commercial deals. In 2014, BPS had more than 1,000 suppliers, identified as either strategic, core, managed or transactional, based on their level of criticality to the safety and operational performance of the fleet, and the level of spend. With 3,251 parts listed against a typical main engine and 2,150 parts listed against a typical generator engine, the procurement team can be asked to source and supply any of this equipment across the world. Around 20,000 orders are placed for the fleet annually – 15% of which are classed as urgent.



SPOTLIGHT
JUNKO MIKANO – CHARTERING SUCCESS

"I am based in Singapore and have responsibility for the company's East of Suez chartering activities for both spot and time charter. It was a university course trading module that first sparked my interest in the fast-moving commercial world. My first role, with the Japanese company Mitsui, had a rather long-term focus, calculating the return on investment and value of shipping and shipping-related business. When I moved into day-to-day chartering, I quickly found it a very exciting job, with all its opportunities, discussions and negotiations every day, and I have remained in chartering ever since.

After a long time working for ship owners, I wanted to complete the picture by working on the other side of the table for a charterer, an owner of oil, and I joined BPS in mid-2011. I work to provide optimum shipping solutions to BPS and the group, and to maximise our income. One of the ways we do this these days is by 'slow steaming', where we slow the vessel down to 10 to 12 knots from the 14 to 14.5 knots that we were used to when I first joined the company. Slow steaming brings us the benefits of bunker saving so we can maximise our income, but it also means lower emissions and a better environmental performance, so it is a 'win-win'. It is of huge benefit that we have the flexibility to sail the vessel at anything from 10 knots to 16 knots, depending on the need at the time, perhaps a cargo that has to meet a particular date window, or when the vessels go through the Horn of Africa piracy risk zone. We always calculate and estimate the speed at which to run the vessel to optimise the best return."

SPOTLIGHT
ANNA EVANGELIDIS – SHIP SUPPLY

"In addition to the technical supply, ships are self-contained hotels, restaurants and offices – the list of items with which to equip them and their crews is long and, sometimes, surprising," according to Anna Evangelidis, procurement and operations performance manager at the BPS office in Sunbury, UK.

"We produce three meals a day for every officer and crew member serving on board the BPS fleet, and, over 365 days, that equates to 1,500,000 meals. In that period, the fleet will have consumed approximately 40,000 whole chickens; 250,000 eggs, 30,000 apples, and 150,000 kilograms of rice, not to mention 200 very important jars of Marmite. In a year, the fleet will also have got through approximately 16,000 tubes of toothpaste, nearly 150,000 toilet rolls, more than 11,000 bars of toilet soap, 7,500 black ballpoint pens, and 6,500 AA batteries."

BPS vessels use more than 2,700 packs of A4 paper and approximately 18,000 coveralls a year. Crews evidently also like watching programmes about other large machines, illustrated by the 330 *Top Gear* DVDs supplied to the fleet in 2013. Curiously, figures from the procurement team also show that leather gloves to the very odd number of 3,441 were supplied to the BP fleet in 2012.

"We produce three meals a day for every officer and crew member serving on board the BPS fleet, and, over 365 days, that equates to 1,500,000 meals."

SPOTLIGHT

ARUN RAMPAL – VETTING THE REMOTE AND INVISIBLE

Arun Rampal is a vetting and clearance superintendent for BPS.

"After many years of operations in the southwest Pacific, BP sold its interest to the French Polynesian-based Pacific Petroleum Company in 2010. However, BP Shipping's time-chartered tanker was servicing the southwest Pacific Islands (Melanesia, Micronesia, and Polynesia) until late-2013. Some of these locations were on an atoll or on a reef island. When I first joined the V&C team, even I was amazed to hear the names of these remote islands and surprised that such locations even existed in our system.

"Without the resources or the tools that BPS had, we would have had to rely on Google maps. Trust me – even if you zoomed in 100%, it would be extremely onerous to pinpoint some of the locations on a map. Due to their landscape most of them required unconventional mooring arrangements, such as using two anchors and then other lines on buoys or shore bollards. Even Captain Cook would be proud, or maybe a bit lost, when tying up his ship at these islands in the good old days!

"One of the responsibilities of the vetting team is to ensure that owned and chartered vessels used by the BP group and presented for port clearance can be safely accommodated and comply with known requirements at nominated berths, mooring terminals and/or ports. To fulfil this responsibility for location clearance in the Southwest Pacific, it was paramount that our integrated marine assurance database – known as iMAS and the best in the world, I understand – was kept up to date. But the remoteness of these locations present a constant challenge for the team to get updated data in a timely manner. It was critical that we received detailed information about these island's infrastructure, port depths and so on, especially following adverse weather or a cyclone in the region. The internet as an information tool was a constant challenge, as some of these ports didn't even have a website, and with others, it was hit and miss. Working phones lines were a rarity and, if we got through, language barriers created their own hurdles. Just to get the message across as to why the vetting team was requesting information relating to a specific location, I often had to seek the help of BP's inhouse talent, multilingual and versed in the various languages spoken on these islands and so able to translate the local documents into English.

"It is this type of systematic approach, utilising the vast resources within the BP group and with the support from our external partners, that BPS is able obtain the required information to uphold its values of clean seas, safe ships and commercial success."

"When I first joined the V&C team, even I was amazed to hear the names of these remote islands and surprised that such locations even existed in our system."

Gazing out to sea

While many characteristics of an early BTC mariner's life have changed, other things remain constant. From inherited ships used for short-haul voyages, to custom-built vessels traversing all the waters of the globe and with all manner of cargo; from manual handling to full automation; from crews largely recruited from other lines and cruise ships who were trained on the job to professionally-trained college graduates; from operating according to maritime traditions to following company policy and industry best practice; from intermittent or non-existent communication with shore and home to instant messaging, the shape of a life at sea has, in many ways, changed almost beyond recognition.

The routes undertaken by the vessels of BP's shipping arm have also evolved hugely over the years. Initially, crude oil products were shipped mainly from the Persian Gulf and the Gulf of Mexico to BP's markets and refineries in the UK.

As BP's refining and market interests grew, so the fleet expanded its routes particularly around Europe and the Pacific. Today, BP ships serve ports all over the world and carry crude, crude oil products, chemicals and gases, including liquefied natural gas (LNG) and liquefied petroleum gas (LPG).

But some things never change. The Captain is master of the ship, and his orders must be obeyed. The hierarchy that is at the core of ship operations remains, as does the distinction between bridge and engine room and that between officers and ratings. The safety of the cargo, always valuable and very often combustible, directly affects the safety of the ship, its crew and the company's reputation. Above all, the International Law of the Sea prevails.

6 THE FLEET

Blazing a trail

More than 500 oil and gas tankers have sailed under the flag of the BP Shipping fleet over the past 100 years. They came in a dazzling array of shapes, sizes and specifications – big ships, small ships, fast ships and slow ships; steam ships and motor ships; some 'ships' that didn't move at all; ships that have been wholly owned, managed, or supplied by subsidiary and associate companies; many of them ships that seafarers loved, as well as a few that were roundly despised.

In addition to the large tanker fleet was a flotilla of smaller vessels of every kind. These brought much-needed fuel to local markets via coastal waters, rivers and canals, or were the workhorse in the form of tugs providing support to large vessels manoeuvring in port. Their story has proven beyond the scope of this account.

That said, the common denominator is that all of these vessels played some part in the history of BP. They were the hardware that transported the company's oil and gas around the globe, and, with it, BP's reputation. They served in times of peace and war. They opened up exciting new opportunities for the business. And they often pioneered innovations which were taken up by the industry as examples of best practice.

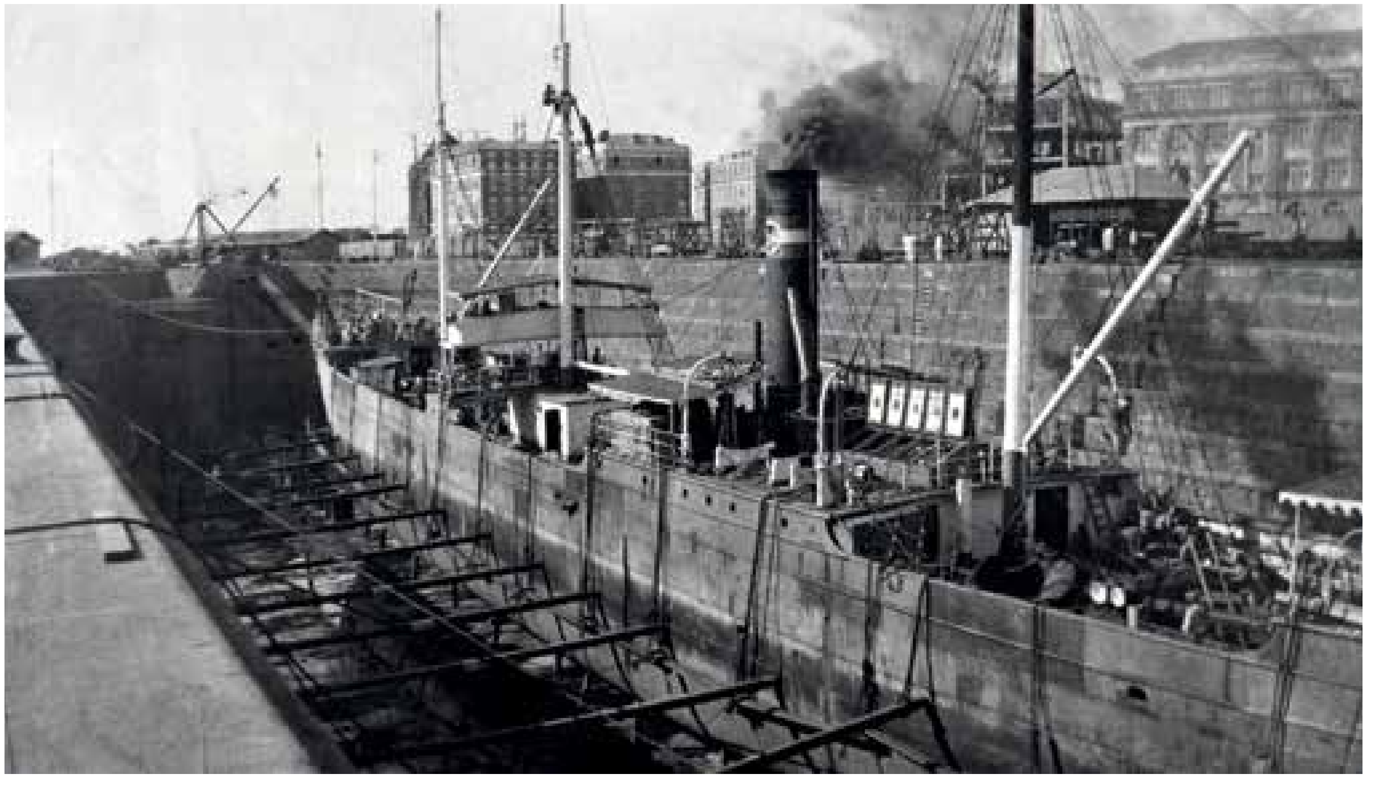
No single volume of history can do justice to them all – but a number stand out for various reasons – a first of their kind to join the fleet; a major advance in technology, safety or environmental performance; or a special role fulfilled, for example.

SS FERRARA
A CASE FOR OIL

The *SS Ferrara* bore the distinction of being the first ocean-going vessel to be owned by the Anglo-Persian Oil Company (APOC), when she was purchased in 1912 for the princely sum of £6,390. *Ferrara* wasn't an oil tanker at all. She was a two-deck general cargo ship, 280 feet long and 1,650 dwt, and already 37 years old! What distinguished her from the fleet that followed was that she carried oil products – benzene and kerosene – contained in cases from the refinery, for distribution to ports in the Gulf, India and Ceylon (Sri Lanka).

Casks and, later, cases had been used to carry water, vegetable oil, wine and other liquid cargoes for centuries. But it soon became clear that they were not suitable for crude oil or petroleum products, which varied in volume and contracted or expanded depending on changes in sea temperature. There had been experiments with large 'transversal' tanks within the hull, most successfully with the German-owned *Glückauf*, but it was not until Sir Joseph Isherwood, the renowned ship designer, introduced a revolutionary 'longitudinal' framing system that the blueprint for future tanker design was laid. Isherwood became widely acknowledged as the 'father' of the modern tanker seen today.

SS Ferrara – "the most terrible thing on God's earth" – sailed on for six years with the British Tanker Company fleet, before being sold. She met a sad end after she caught fire in the Straits of Malacca, when carrying a cargo of opium, and was declared a total loss.



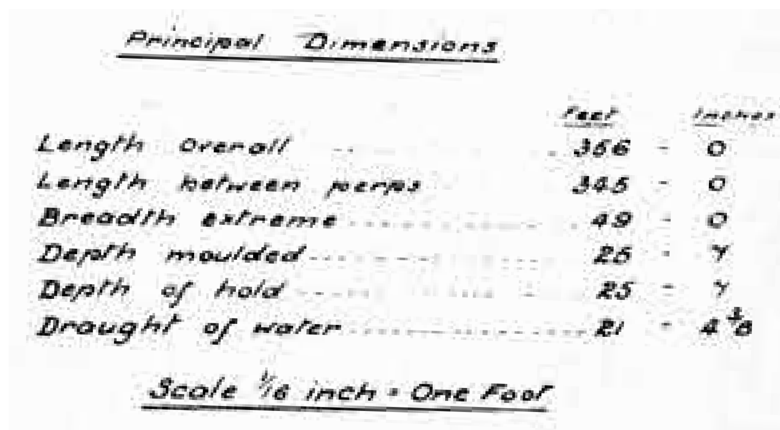
BRITISH EMPEROR
THE FIRST NEW-BUILD SHIP

The Isherwood System of Construction created stronger ships and an increased carrying capacity within the same dimensions. This was achieved by reducing the number of transversal frames within each tank and introducing far stronger web plates spaced around 15 feet apart and reinforced with strong corner brackets. The design, comprising a single, double-riveted, oil-tight centre line longitudinal bulkhead, was an instant success. It was, therefore, the obvious model of choice when, in 1916, the British Tanker Company commissioned its first ships.

British Emperor carried the distinction of becoming BTC's very first ordered and constructed ship. Built by Armstrong Whitworth of Newcastle-upon-Tyne, England, and with a carrying capacity of 5,500 dwt, she made her maiden voyage in September 1916. She began a tradition of every vessel of the fleet adopting the prefix 'British' that continues today.

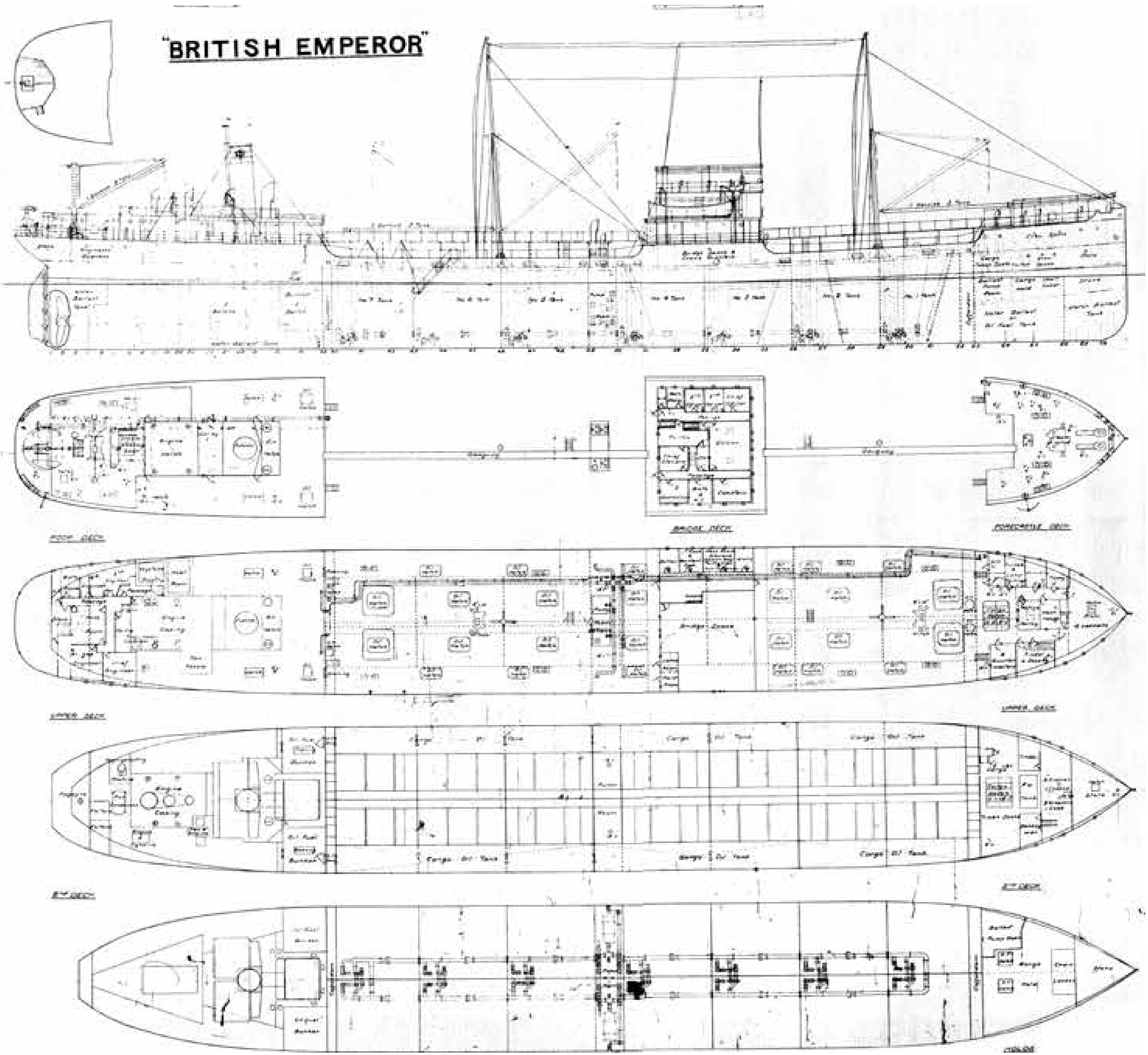
British Emperor featured simple steam, triple-expansion engines, with Scotch boilers that were designed for dual-firing with oil or coal. Seven main port and starboard cargo tanks were divided into two sections by a single, longitudinal bulkhead. They extended up into a central trunk so that, when pressed full, the free surface of liquid was reduced in width to improve stability.

The early BTC ships, such as *British Emperor*, were ahead of their time in one key respect. They had 'summer tanks' fitted across the central trunks – three each side in the smaller vessels, five each side in the larger – so that carrying capacity was increased when operating in summer zones. *British Emperor's* design had been contracted out to a third party and despite her solid Isherwood underpinnings, John Straughan of BTC later described the fleet's first class of ship as "a poor class, nothing like those we designed for ourselves a few years later".


Principal Dimensions

	Feet	Inches
Length overall	366	0
Length between perps	345	0
Breadth extreme	49	0
Depth moulded	25	7
Depth of hold	25	7
Draught of water	21	4 3/8

Scale 1/16 inch = One Foot


"BRITISH EMPEROR"
POOP DECK
BRIDGE DECK
FORECASTLE DECK
UPPER DECK
UPPER DECK
2nd DECK
2nd DECK
HOLDS

BRITISH AVIATOR
FIRST MOTORISED SHIP

The First World War clearly accelerated technical advances in tanker propulsion. Oil-fired combustion engines were cleaner than those fuelled by coal. They took less time to start and were more efficient in terms of fuel consumption. They also helped to produce a cleaner environment both on board and on shore. But the large, direct-drive marine diesel engines being developed were also heavier than a steam engine, as well as noisier and more expensive to install. There was concern over the ability of regular combustion to be maintained at slow speeds, while steam would still be required to operate cargo pumps and most deck machinery, and to supply the heating coils that kept the crude being carried at the right temperature.

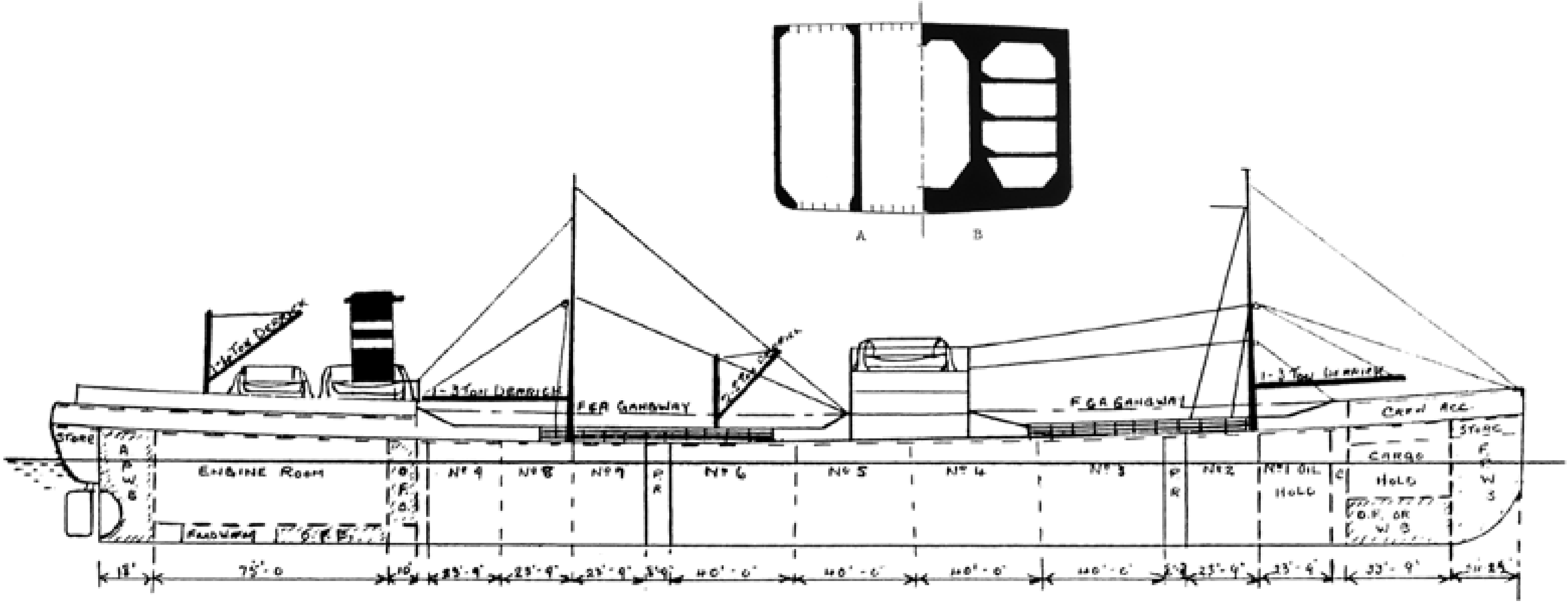
The clear efficiency advantages, however, made transition inevitable. At the time, a 3,000-horsepower tanker with steam-reciprocating machinery burnt some 30 tons of fuel a day, the steam turbine ships about 27 tons, while in motor ships, this dropped to around 10 tons per day.

In 1924, BTC launched its first motorised ship – the 10,000 dwt *British Aviator*, which was built at the Palmers shipyard in Jarrow, England, and featured a high-powered six-cylinder Cammell Laird-Fullagar marine diesel engine. This was a complex beast that included a "perfectly horrible arrangement of diagonal connecting rods" that "gave incessant trouble", according to one contemporary assessment. But it laid the foundation for engines that would power BTC vessels for the next 30 years.

A 1929 internal report, commissioned to compare the performance of steam and motorised ships, and which came down firmly on the side of the latter, pointed out with alacrity: "If we now go in for a considerable programme of steamship construction, it will not be a good advertisement for our diesel fuel." Steam, however, continued to power the larger ships right up to the 1980s – until then, the ability of diesel engines to power larger ships was limited. LNG ships were to stay on steam for even longer.

FRIESLAND
BAR AND BARGE

Increasingly bigger tankers may have had the highest profile, but throughout its history, BP's shipping arm has always relied on smaller vessels to carry its products in coastal waters, rivers and canals. In the earliest days in Persia, for example, oil tankers could not even berth at Abadan, owing to the 'Shatt-al-Arab Bar', a natural barrier formed by the sediment accumulated from surrounding river systems. Until the Bar was dredged in the 1920s, BTC used tugs and barges to lighter crude oil from tankers usually anchored 40 miles or more from Abadan. Apart from *SS Ferrara*, therefore, the two key vessels purchased in the early days were a barge, *Friesland*, and a tug, *Sirdar-i-Naphte*. Captain J. D. M. Baillie, the first marine superintendent at Abadan, wrote a graphic description of the difficulties of towing barges from Abadan beyond the Bar. Even in good weather, the tugs were often 'dancing like corks', Baillie said, and the tow-lines to the barges frequently sheared away, leaving the barges to drift towards the shoreline. Often, it would take more than a day to make the journey beyond the Bar. Cost and efficiency drove the dredging of the Bar, which began in 1925, was completed in 1928, and formally opened in April 1929 by King Faisal of Iraq.



BRITISH FAME

THREE TWELVES

The 1930s saw the emergence of an important class of ship for the fleet, with the adoption of its first 12,250 dwt design. These vessels became known as the 'three twelves', due to the fact that they were 12,000 dwt capacity, could reach a speed of 12 knots and burned 12 tons of fuel each day. *British Fame* was first to launch in 1936. A move towards slightly larger ships was taking place across the industry – up to 15,000 dwt in Norway and Japan, even 18,000 dwt in the US.

But BTC's choice was limited by the maximum size possible to negotiate the lock at the entrance to the Queen's Dock in Swansea, Wales. As American tanker owners found to their cost, their 18,000 dwt vessels were also too large to negotiate the Suez Canal.

The most important new feature of the 'twelves' concerned tank safety. The centre line bulkhead, trunk and summer tanks layout was abandoned, to be replaced by two longitudinal oil-tight bulkheads sited the same distance from the centre and running the length of the cargo space. This gave three, full-depth tanks across the ship in each transverse subdivision, which not only increased longitudinal, bottom and under-deck strength, but also avoided the problem of 'free-surface' in all conditions of loading and made the need for summer tanks redundant. This remains more or less the standard type of tank layout today. The change of arrangement was accompanied by a change in structural system that would also be easily recognised today. The old Isherwood tankers had entirely longitudinal framing throughout the cargo section, changing to transverse framing at the two ends. Now, the longitudinal girders were confined to the deck heads and bottoms, with those on the side shell and bulkheads running vertically.

Between 1936 and 1939, BTC took delivery of a total of 21 12,000 dwt ships, all taking advantage of the 1930 Load Line Rule that allowed vessels of this size to load more deeply and, therefore, increase payload considerably.

BRITISH FIDELITY

ROOM FOR IMPROVEMENT

Accommodation for officers and crew in the early days was fairly basic. Crew lived in the forecastle space, seamen at upper deck level, and Firemen and Greasers at 'tween deck level, with rooms for the Master and Deck Officers on the amidships deck house below the bridge. This is also where the dining saloon was located, with the galley on the poop deck. The 10,000 dwt vessels also had state cabins for use by senior company staff travelling to and from Abadan. This often led to the facilities coming under severe scrutiny, most notably in 1929, when the then Anglo-Persian chairman, Sir John Cadman, made a six-day voyage on *British Faith* from Bombay to Abadan with his wife and son.

Lack of privacy in the engineers' mess, unsanitary washing 'compactums', and the absence of mechanical ventilation were all targets for his criticism, conveyed in a memo to BTC's managing director. "Frankly, many things so obviously obtruded that I was led to wonder whether, in approving the plans of our latest ships... sufficient attention was given to the reasonable comfort of those who have to live and work in them," he wrote. Steps to address most of these issues were already being incorporated in future designs, but were no doubt hastened by the chairman's comments.

The first major change in layout for two decades, however, came in 1937, when the Board of Trade revised its rules to prohibit the use of the forecastle space for accommodation. BTC, despite facing a major refit bill, was refused exemption on the 12,000-ton vessels already ordered, so softened the blow by eliminating the apprentice and passenger cabins, bringing the Engineer Officers amidships and housing the crew aft in the spaces vacated by them. The arrangement proved so successful that ships in the class that had already been completed with the old layout were also modified. The revisions, fitted in a new ship for the first time in *British Fidelity* in 1938, also brought better furnishings and improved sanitary arrangements, as well as the introduction of a trunked ventilation system supplied by permanently fitted-electric motor fans.

BRITISH VIGOUR

WARTIME WELDING

The British Government took control of shipbuilding during World War 2, and, with it, determination of specifications and allocation of berths. BTC continued a modest programme of construction and acquisition, which included 8,500 tonners, such as *British Vigour*. She was effectively a 12,000 dwt design scaled down to suit the berths allocated to the company. The biggest structural change introduced to *British Vigour* was the spread of substantial welded structures instead of riveting. The first 'all-welded' vessel was built by Cammell Laird in 1920, but it was the urgent need for ships in the early years of the Second World War that led the US to adopt rapid construction, all-welded economic designs devoid of unnecessary frills or esoteric design features. Sixteen thousand dwt tankers – the so-called T2 tankers, also known as 'Greyhounds' due to their 14+ knots speed – were built as part of this war programme in considerable numbers. Several were acquired after the war by BTC to rapidly expand the fleet.

Concerns about early welded structures in ships arose when two T2s split in half off Cape Cod, Massachusetts, US, and the class had to be 'belted' with steel straps. Later investigations found the cause to be the wartime steel used had become brittle at lower temperatures. First seen in *British Vigour*, delivered by Furness Shipbuilding, Hartlepool, England, in 1943, welding was actually a genuine technological advance, rather than a wartime requirement, but its adoption was no doubt accelerated by the conflict. Some of the changes resulting from wartime shortages were later adopted in peacetime for economic reasons. Composition replaced the teak wood planks that covered the steel on accommodation decks, for example – it was restored after the war, but was later abandoned again when both materials and labour became prohibitively expensive. Various plastics, meanwhile, were introduced to save metal and wood fittings where possible and appropriate. With further development, this came into more general use from the late-1940s onwards.

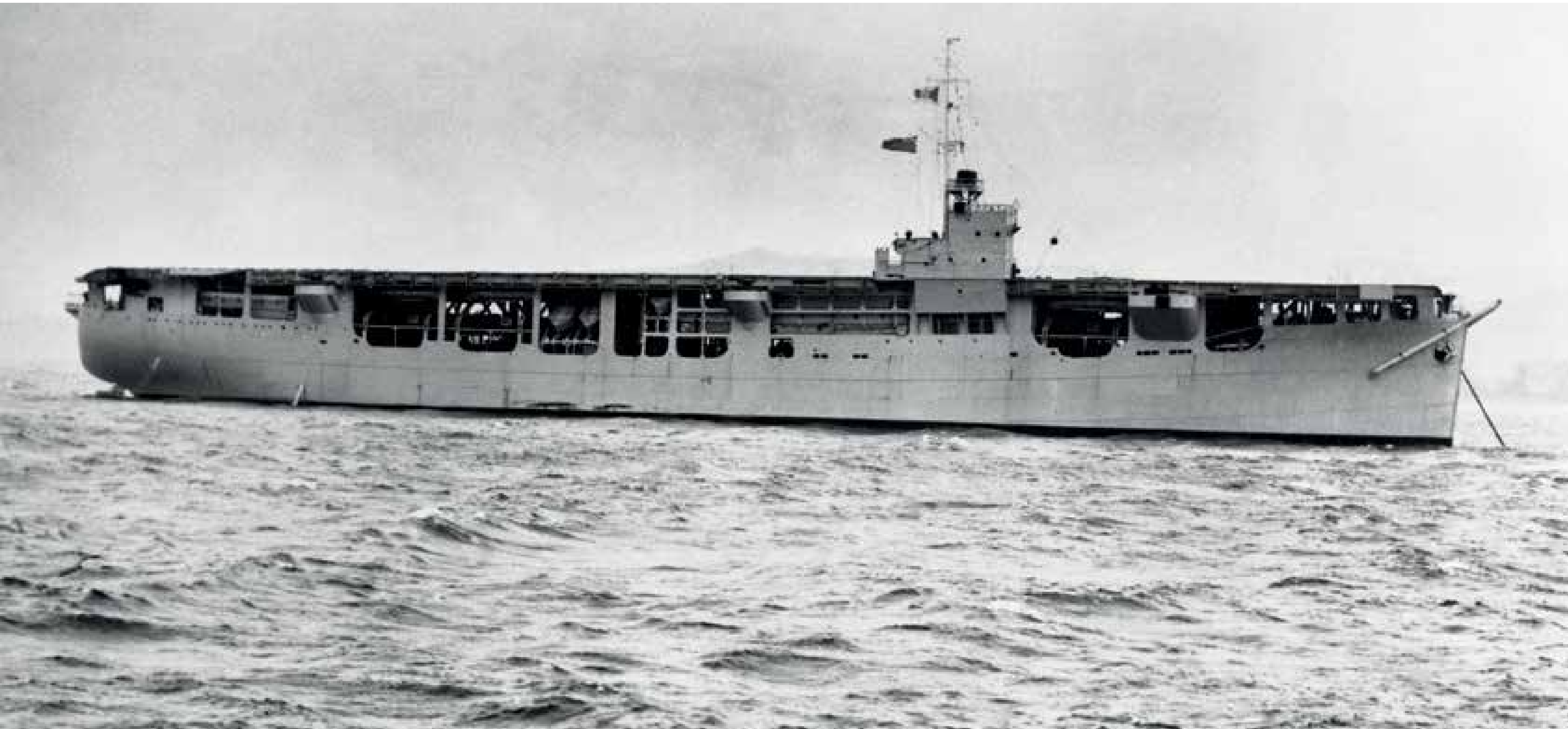
British Vigour also featured an acoustic boom built around the forecastle head, which could hit the water with sufficient force to explode any nearby mines.

BRITISH WISDOM

BRILLIANT AND BIZARRE MACS

One of the biggest problems for the Allies during World War 2 was how to protect their North Atlantic Convoys. There just weren't enough warships available to do the job of escort vessel. The proposed solution was, at the same time, brilliant and bizarre. The comparatively flat and uncluttered foredecks of tankers and certain dry bulk carriers meant they were a natural choice for conversion into temporary aircraft carriers. So it was that the MAC (Merchant Aircraft Carrier) ships were born – providing aircraft for convoy escort duty, while still transporting their cargo. Three 12,000 dwt BTC ships under construction were commandeered as MACs by the Ministry of War – *British Caution* (launched as *Empire MacColl*), *British Virtue* (*Empire MacCabe*) and *British Wisdom* (*Empire MacKay*). All were retained under BTC management.

The experiment proved a resounding success. Over the two years of the war in which the MACs operated, few of the convoys they escorted suffered serious submarine attack. The BTC ships, affectionately known as the 'three sisters', survived the war. In 1946, they were bought by BTC from the UK Government and renamed *British Pilot*, *British Escort* and *British Swordfish*, respectively.



BRITISH ADVENTURE
FIRST SUPERTANKER

On the 12th December 1950, BTC launched the largest tanker in the world at the yard of Vickers Armstrong in Barrow-in-Furness. At 30,000 dwt, she heralded the arrival of the first, completely new class of ships for some years – the supertanker. Powered by two steam turbine engines geared to a single propeller, the class became the fastest ships in the fleet, with a cruising speed of 15 knots.

British Adventure was virtually double the capacity of any other tanker in the fleet on a summer laden draught of 28 feet – more than 600 feet in length and more than 80 feet in the beam.

A survey carried out in 1948 could only grant an unqualified yes to crude oil operation using 32,000 dwt ships at seven loading and 17 discharge ports around the world. BTC was fortunate in that its refinery investments in Europe and the Middle East at this time had allowed for the development of deeper draughts of vessel. Added to that, the commercial case for larger scale was compelling. *British Adventure* was delivered at a price of £43 per dwt compared to £57 for a 16,000 dwt tanker.

Diesel engines were not yet developed to give the power required by ships of *British Adventure's* scale and in any case, a comparison of freighting costs at the time showed a distinct advantage for the larger scale of steam turbine ship over her motor alternative. This was partly due to economies of scale, but also because a motor ship had to burn marine diesel, costing 50% more than the 'Bunker C' fuel oil used in steam ships.

The 30,000 dwt oil tankers pioneered by BTC proved what was possible as the move to scale began. Now, vessels of 36,000 dwt, even 44,000 dwt were being ordered – *British Ambassador* was one of the first examples of the latter.

BRITISH FULMAR
FIRST SPECIALIST

The period of ship construction after the Second World War began the move from tankers that were 'general purpose' in that they were designed to have the ability to separately carry either crude oil or refined products – to tankers that were designed specifically for carrying crude or products. For the BPTC fleet, the distinction began gradually with the post-war 16,000 dwt vessel. As the scaling up of crude carriers to 'supertanker' scale took hold, and market-based refineries, providing a wide range of products demanded by customers, grew in numbers during the 1950s, new specialised classes of product tanker emerged.

Small, easily manoeuvrable product tankers were certainly versatile and nimble, and at first their larger successors were simply progressively scaled-up, slightly modernised versions of them. But both technological advances and commercial expedience ensured that the pace of change was to increase significantly.

The 14-strong Bird class of 15,500 dwt product tankers, introduced with the launch of *British Fulmar* in 1958, heralded a new single-deck construction, featuring a raked funnel, clipper stem and cruiser stern. Her main cargo system was designed to give maximum flexibility for multi-grade products cargoes and because she did not have the stress problem of large crude carriers, she represented a truly 'all-welded' class.

The issue of corrosion had become serious in clean oil carriers during and after the war and the cost of steel renewals required at survey was causing BPTC deep anxiety. Later, ships of the Bird class saw the introduction of coatings, with great success – not just in corrosion prevention, but also in a substantial reduction of valve leakage (from corrosion debris) and, hence, cargo contamination. *British Fulmar* was the first post-war BTC vessel to be fitted with a turbo-charged Sulzer engine designed to run on low-grade fuel oil, although initial problems with combustion, which were solved after modifications, earned her the nickname 'Dirty Bird'!

A new, spacious engine room and much higher-quality accommodation and furnishings for officers and ratings were evidence that life for seafarers was changing dramatically. But perhaps *British Fulmar's* main claim to fame was being the fleet's first ship to be fully air-conditioned. The Bird class marked the fleet's first specialised product carriers to be constructed and it laid down many of the design features and improvements that would feature in and be further developed in subsequent classes, such as the 20,000 dwt Tree class product tankers in the 1960s and the 25,000 dwt River class in the 1970s.


BRITISH FULMAR

BRITISH SKILL

OUTSTANDING CONTRIBUTION TO INDUSTRY SAFETY

The early 1960s saw a decision by BP Tanker Company (BPTC) management to investigate an inert gas system (IGS) as a means of both reducing tank corrosion and avoiding cargo tank explosions that could prove devastating to a vessel and her crew. It would turn out to be one of the greatest ever contributions to oil tanker safety.

IGS essentially involves the replacement of air and hydrocarbon gases in the space above liquid in all tanks, with cleaned flue gas from the ship's boilers, principally nitrogen and carbon dioxide. These act as neutralising agents for the hydrocarbons remaining in recently cleaned cargo tanks. Hydrocarbon vapours cannot be ignited in mixtures having less than 8% oxygen. In the 1960s , BPTC's tankers were typically producing (waste) flue gas with an oxygen rate of around 4% and in quantities more than equal to that needed for the oil cargoes.

The virtual elimination of oxygen from the tank atmosphere substantially reduces steel corrosion, as well as the risk of flammability. Such technology was not new – it originated in the early oil industry onshore – and an inert flue gas system had been developed by Sun Oil of Philadelphia, US, for its tankers in the 1930s – but it had not been taken up by the industry. BPTC was to change that.

Charles Sutton, who was BPTC AGM concerned with legal and special projects, together with naval architect Iain Telfer, visited and spoke at length with Sun Oil about its experience. Discussions with C. Fred Day, a BPTC Chief Engineer and Dr Ken Brummage, a colleague at the Group Research Centre in Sunbury, UK, convinced the BP team of the immense potential of developing a well-designed but simple IGS system to protect against explosions. They were also convinced of the economic benefits the system brought in reducing tank corrosion. They soon brought the system to the attention of the administrative committee and BPTC board and an investigation reported favourably on the evidence, although the difficulties of retrofitting the system on the built fleet were evident.

The operation has two major components: the engine room plant is used to clean and purify the inert gas in non-hazardous conditions, and then to regulate this for distribution safely to the tanks. A remotely-operated butterfly valve is fitted to the boiler uptake at the base of the funnel from where the hot exhaust gas is taken. The dirty and particle-laden flue gases are drawn through a scrubbing tower, where they are cleaned and purified. The electric-motor-driven inert gas fan then puts the cleaned gas under slight pressure before it is distributed to the cargo tank system through a deck water seal. This prevents any backflow of hydrocarbons from the tanks into the engine or accommodation spaces.

The inert gas is distributed to the deck/mast piping system and enters the cargo tanks at hatch level. When the tanks are empty, the gas is expelled through purge pipes, which extend from just above the tank bottom to about three feet above deck. When cargo or ballast is being loaded, the inert gas is expelled to the atmosphere via the deck/mast piping system. The inert gas replaces the cargo during discharge. The ship, therefore, is maintained in an inerted and safe condition throughout its operational sequences. The oxygen is omitted from the cargo system spaces and, therefore, the various causes of explosion are eliminated.

Telfer set to work with his colleagues and, by 1961, Fred Day was Chief Engineer on board *British Skill* in Wallsend, England, overseeing the fitting of the new system. "It took quite some time to fit as we had to make so many of the major components from scratch – such as large-scale pipes and the scrubbing tower – using drawings prepared by Iain Telfer. We sailed to load in Banias and only completed our work and testing en route," Day recalled.

The voyage was a great success, with the 'inerted' tanker returning to discharge at the Isle of Grain in April 1961. BPTC continued with its own trial installations on *British Prestige*, and *British Sovereign*, and by 1963, IGS was specified for all BPTC new builds. Then, an explosion on *British Crown* at Umm Said, Qatar, in August 1966, while almost fully loaded with crude oil for Kwinana, Australia, convinced the company to retrofit the system to nearly all crude carriers in the fleet.

In 1969, BP's VLCCs were the only such tankers in the world equipped with IG systems. When there were explosions on three other vessels – Shell's VLCCs *Mactra* and *Marpessa*, and the Norwegian tanker *King Haakon II* – within a three-week period in 1969, BPTC was asked to provide detailed information about its IGS practice to the British inquiry. The protection provided by the system was an important inquiry conclusion and the design – although patented – was made available by BPTC to the industry on a royalty-free basis. It eventually became accepted industry practice and mandatory under international maritime regulations.

It confirmed BPTC's reputation as a leader in terms of safety practice on tankers.


BP

BRITISH ADMIRAL

50 YEARS – 100,000 TONS

A notable milestone was reached with construction of *British Admiral* at the Vickers yard in Barrow-in-Furness, England, in 1965. She was the first 100,000 dwt vessel built by BPTC and, at the time, was the biggest merchant ship in Europe. It was appropriate that Her Majesty Queen Elizabeth II launched the ship in March that year to mark the 50th anniversary of the business. *British Admiral* had two steam turbine engines that developed a maximum of 25,000 shp (shaft horse power) geared to a single shaft. She also took advantage of the recently revised Rules for Oil Tanker Construction, by reducing the number of cargo tanks to seven sets of three. Four of the 21 tanks were designed for water ballast, while the single pump room contained four cargo pumps that each had a capacity of 1,860 tons per hour.

The ship also featured a fully-automated cargo control system that was the first of its kind in the world, with claims that it would eliminate any spillage or overflow of crude oil, thanks to push-button valves that automatically closed once a cargo had reached its programmed level. Fully air-conditioned, with single cabins for crew members in the now-familiar 'all aft' accommodation design, the vessel was equipped with the latest navigational, catering and radio facilities. *British Admiral* had a unique, never-to-be-repeated 3,300 volts electrical generating system – well above the normal 440 volts seen in other ships. The reason was simple. The ships were designed specifically for the Eastern Mediterranean-Europe run, loading crude oil at Banias in Syria (at the end of the Saudi Arabian pipeline) and discharging at Rotterdam, Netherlands, or Finnart in Scotland. The boost in electrical power meant high-capacity cargo pumps could be installed, which dramatically cut the turn-round time at the discharge ports, so justifying the considerably higher capital expenditure on the equipment. The high-voltage system proved a real challenge for the seagoing engineers and electricians, not least because the increased magnetic fields in the generators caused havoc with the complex instrumentation systems on board, at least until the cables were properly screened to prevent it.

A simple indication of the size of *British Admiral* was the fact that its steam windlass alone weighed 100 tons and stood nine feet high, 40 feet over the warp ends, and was capable of an anchor breakout pull of 110 tons when using both steam engines positioned beneath the forecastle head. The magazine *Tanker and Bulk Carrier* claimed *British Admiral* was "undoubtedly the most advanced vessel in the BPTC fleet, the complexity of her control systems being reflected in the composition of her 43-man complement, nearly 50% of which are officers."

BRITISH HUSSAR

PIONEERING ANTI-POLLUTION BEST PRACTICE

As the volume of oil discovered and the size of ships grew in the early-1950s and 1960s, so too did concerns about discharging the oil and water emulsion mix known as 'slops' into the sea during cleaning. At one point, it was estimated that between 500,000 and one million tons of oil were being dumped worldwide, and successive regulations were introduced to restrict the oil content of waste discharged in the permitted zones, extend the permitted zones, and totally ban discharge of any oil from new ships larger than 20,000 dwt. There was just one problem – the technology did not yet exist to make this possible in a commercially viable way.

In 1954, an International Convention for the Prevention of Pollution of the Sea by Oil (OILPOL) had been drawn up and became effective in 1958 under the aegis of a United Nations body: the Inter-Governmental Maritime Consultative Organisation (IMCO). Its purpose was to secure the widest possible cooperation in maintaining high standards in maritime safety and to prevent and combat marine pollution. Under the convention, international agreement had been reached on moving to totally prohibit the discharge overboard of oily waste from tank cleaning within 50 miles of shore.

In response, BPTC's Captain Douglas Hurst oversaw a joint study with Shell and Exxon using *Gay Caprice* to monitor the effects of discharges. Achieving the total prohibition of discharge had a number of technical and cost obstacles, but a breakthrough by Shell with its Load on Top (LoT) gravity separation system provided a major solution, albeit stopping short of the target for total prohibition.

British Hussar was the first BP tanker to adopt the LOT technique, which allowed for the mixture of cleaning water and residue to be pumped into a 'slop tank' and then to separate into oil and water during a voyage. The water portion was then discharged into the sea, leaving only crude oil in the slop tank. The new cargo was literally 'loaded on top' of the oil-rich residue now left in the tank, and the remaining seawater content was dealt with by the refineries. BPTC was a keen advocate of LOT, and its own trials on *British Hussar* in 1962 proved hugely successful – figures quoted in its own Oil Pollution Study claimed that the 'free' water at the bottom of the tank had been reduced to a depth of 2.5 inches, the equivalent of 12 tons, and that the ship had 140 tons of 'wet' oil containing approximately 23% water.


BP
BRITISH HUSSAR
LONDON

BRITISH EXPLORER
FIRST VLCC AND CRUDE OIL WASHING

At the end of the 1960s, the first of the company's very large crude carriers (VLCCs), the Mitsubishi-built 215,603 dwt *British Explorer*, started plying her trade. Built to a standard Japanese design in an 'oil for ships' deal, she was 1,070 feet long, 160 feet wide and 62 feet deep.

For BPTC's shipbuilding division, the move to Japan brought a change of style, with the ships being built to an adapted builders' specification rather than one prepared by BPTC staff. British and continental yards also offered 'standard' ships, which would have been equally acceptable in dimensions and general arrangement, but few could offer alternatives of equipment and internal detail to meet BPTC's requirements at a reasonable cost. Some yards even refused to make any changes at all. In contrast, the Japanese builders were found to be flexible and cooperative, particularly, according to Edward Platt, BPTC technical director "when they liked a scheme and wished to incorporate it into their own-design ships!"

British Explorer was not simply distinguished by her size and new class. She was the inspiration for a tremendous piece of lateral thinking that led to the crude oil washing (COW) technique for cleaning cargo tanks. When the first VLCCs were built, it became clear that their tanks were too large to be cleaned by conventional methods. Large deck-mounted high-pressure machines were the answer, although the new process could generate strong fields of static electricity – a problem overcome by BPTC's earlier decision to fit the fleet with inert gas systems.

However, it was on a short voyage in command of *British Explorer* to gain experience of the new class that Captain Ralph Maybourn hit upon an alternative to washing the tanks with high-pressure water. Maybourn realised that the new pumps could deliver cargo oil at high pressure rather than water as the cleaning agent. As a result, all the waxy residues could be discharged at the same time as the main cargo. A thorough study was undertaken and a trial at BP's Isle of Grain refinery on the Thames Estuary was undertaken with great success. Maybourn's report was subsequently accepted – and COW adopted across the BPTC fleet. As owners began to take up IGS for their own VLCCS, the adoption of COW became an industry standard.

BRITISH SKILL (II)
SEGREGATED BALLAST

By 1978, when a string of accidents had culminated in the stranding of *Amoco Cadiz* off Brittany, an International Conference on Tanker Safety and Pollution Prevention had recommended not only that COW be made compulsory for all crude carriers over 20,000 dwt, but also that every new-build tanker must have segregated ballast tanks. BPTC's *British Bombardier* had already pioneered the similar concept of a 'clean' ballast tank in the 1960s. Regulations imposed by the International Convention for the Prevention of Pollution from Ships (MARPOL) had drawn a direct link between oil pollution at sea and tanker safety, one that would influence ship design from that point forward.

At first, proposed action only covered aspects such as traffic routeing and navigational aids. But later recommendations were made to include areas such as 'constructional measures', the identification and charting of hazards, training, organisation of ship watches and research on mitigation of pollution. Most specifically, of course, the debate about tank size limitation, provision of double hulls and segregation of cargo and ballast had well and truly been joined.

Not surprisingly, OILPOL amendments in 1971 also mentioned specific design features, such as the restoration of additional transverse bulkheads, which had been eliminated by recent changes in classification rules applied to first-generation VLCCs. Ships ordered after January 1972 were also required to be built with smaller tanks.

The MARPOL rulings influenced tanker design for the better. An innovative segregated ballast tank design was produced by BPS technical staff for the S class (*British Spirit*, *British Skill*, *British Success* and *BP Achiever*), where its water ballast was carried in five L-shaped tanks, which was a patented BPS design. These L tanks were fitted in a longitudinal direction, comprising a wing vertical section joined to a lower longitudinal section under the wing cargo tank. The reduction in the oil tanks exposed at the sides and bottom provided increased protection from grounding and side impact. Another benefit was the improved access for inspection of the tank structure. The ballast tanks were served by their own pump, pipe and valve systems, in line with the Segregated Ballast Tanks regulations, which, overall, gave the ship more stability when it was carrying no cargo. An inert gas system was fitted as standard and provision was also made to fill the L-shaped ballast tanks in case of possible seepage from a cargo tank. This feature became standard on all new-build tankers with BPS design input. *British Skill* and *British Success* were also fitted with an integrated propeller duct developed by Mitsui of Japan, which improved propulsion efficiency and saved 5-6% of the fuel used on each voyage.

The vessel featured one of the first helicopter pads, too, which revolutionised the loading and unloading of crew and stores in coastal areas. These four ships were built in three UK shipyards, with delivery starting in 1982. The application of satellite and computing technology, such as Global Positioning Systems (GPS) and integration into the Global Maritime Distress and Safety System (GMDSS), was also a hugely significant innovation from this period.

BRITISH KIWI
FIRST OF A KIND

The introduction of North Sea oil and gas production brought a whole new era of vessel design and operation for BP's shipping arm. Shortly after BP started operating in the Forties field in 1975, it became clear that a fire control and support vessel was needed near the four field platforms. A custom-built ship was commissioned, but as a stopgap measure, BPTC naval architects turned to one of several Bird class 15,500 dwt tankers awaiting disposal in Barry Docks. *British Kiwi,* built in Smiths Docks, Middlesborough, England, and launched in 1959, was converted into the first production platform, emergency patrol and fire control ship for the Forties field – the first vessel of its kind in the world.

To cope with the weather extremes of the North Sea, the vessel required some form of passive stability, or 'flume' system. This was to be installed in the three No. 5 tanks. The design consisted of cutting holes of a certain shape and size into the two bulkheads connecting these tanks. When filled with a certain volume of water, and when the ship started to roll, the water would flow through these holes and, as the ship started to recover, water would still be flowing, thus reducing the amount of roll.

BRITISH ADMIRAL
OIL AND PRODUCTS HYBRID

In the dark days of the 1980s, the BPS fleet had fallen to fewer than 30 ships. Huge uncertainty surrounded the need to own ships, and events such as *Exxon Valdez* cast a shadow over the future regulatory requirements for tankers. After a gap of five years, when no ships had been ordered by BPS, a new hybrid class of tanker was delivered in 1990 in the form of the 40,000 dwt *BP Admiral*, subsequently renamed *British Admiral*. She had the capability to transport both the black oils of crude, fuel oil, and gas oil, as well as the white oils, such as spirits, kerosenes, naptha and light gas oil. This hybrid class represented by far the most technically sophisticated ships ever ordered by BPS.

Fabricated completely from mild steel, with no high-tensile steel components at all, they were fundamentally a Mitsubishi design and featured a six-cylinder engine that developed 7,000 brake horsepower at 90 revs per minute at maximum rating, and 6,300 bhp at 87 rpm. That gave them a fuel consumption of 21 tonnes at 14.3 knots – or 19 tonnes at 14 knots. Fully-segregated water ballast tanks included the forepeak, 10 wings and two slop tanks. And almost complete collision protection was provided by two longitudinal bulkheads. Two-valve segregation between the pipelines meant up to four grades of oil could be carried on any one voyage. And an integrated bridge and cargo control room, designed by BPS, incorporated a computer-controlled automatic pump system that improved port turn-round time and reduced workload for officers on board.

Fotoflite

BRITISH RESOURCE
SETTING INDUSTRY STANDARDS IN LONGEVITY

During the 1980s, the ageing of the BPS second-generation VLCC fleet (*British Ranger, British Resource, British Reliance, British Resolution, British Renown*) became an important issue, heightened by pollution incidents around the French and Spanish coasts from older foreign-owned vessels. This led to the media branding vessels in operation for more than 15 years as 'too old to trade'. While there was no definitive design life, the perceived wisdom was that tanker design was fit for 20 years, so BP commissioned studies with a Japanese shipbuilder and a British structural engineering consultant into fatigue durability for its fleet of five VLCCs, in order to get better guidance on how it was affected by wave loading on a range of VLCC trade routes, and by steel corrosion.

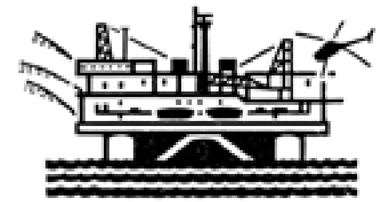
Combined with corrosion measurements and analysis of steel coupons from the structure, BP Shipping was able to pinpoint the areas likely to exhibit distress and plan an inspection programme accordingly, with the aid of additional inspection walkways in the cargo/ballast tanks. Hull stress-monitoring systems were fitted to calibrate the theoretical fatigue studies and provide guidance to ship's staff on loading experienced by wave passage. This method of managing the structural durability of the vessels was presented to the industry in a series of lectures in the UK, US and Japan, and led to BP Shipping being awarded the BP Chairman's Gold Award for Safety in 1993. In addition, this work influenced the classification societies to offer ship owners similar fatigue studies, which became a standard for the ship-vetting process introduced by OCIMF in the 1990s. The five BPS VLCCs continued trading successfully until 25 years of age before being recycled. This method of investigation of the durability of tankers was also applied to the Alaskan tanker fleet under charter to BP's US business.

SEILLEAN
SHIP OR PLATFORM?

BP's renewed involvement in 'frontier' oil exploration led the company to invest in a 50:50 partnership with the Harland and Wolff yard, Belfast, UK, in 1989, for a purpose-built single well oil production ship (SWOPS) called *Seillean.* It was the North Sea's first floating production, storage and offloading (FPSO) vessel, which was still operating some 25 years later in Brazil under new ownership. The 249.7-metre, 45,000 dwt vessel was based on a tanker hull, but with a cruiser stern to enable the vessel to place the stern into the seas when on station over the wellhead, so that the flare located at the bow would be downwind of the riser and process plant amidships. She could process 26,500 barrels of oil per day. A range of highly complex technologies enabled it to hold station accurately immediately above an oil well-head using a dynamic positioning (DP) system.

The well was marked by seabed transducers and a system of highly accurate radio beacons. The job of *Seillean* was to lower a pipe, connect to the wellhead and pump oil from this into onboard tanks. A series of electrically-powered thrusters kept her in position, two of which also acted as propulsion for a vessel that was not fitted with conventional propeller or rudder. The connection was made by a riser connection package (RCP), suspended from a derrick through a 'moonpool' and lowered through the hull of the ship.

The fix was obtained by a flexible pipe, which permitted slight movement of the ship and used hydraulic signals transmitted between the RCP and wellhead, while a second, smaller moonpool was fitted with a camera and light platform, as well as manipulator arms to operate the wellhead connections. The technology made *Seillean* ideally suited to carry out oil collection and processing at the Macondo prospect in the Gulf of Mexico in 2010, to help deal with the Deepwater Horizon oil spill.



Flown by helicopter to IOLAIR, Britain's First Emergency Support Vessel

IOLAIR
STAMP OF THE EAGLE

BP Shipping has chalked up many notable engineering achievements over the past 100 years, but only one has been recognised in the form of an official Royal Mail stamp in the UK. That honour belongs to the specialised semisubmersible offshore ship, *Iolair* (Gaelic for eagle), which was used as an emergency support vessel (ESV) to support and service platforms in the Forties and other North Sea fields from 1983 to 2000.

Iolair, built by Scott Lithgow of Glasgow and later working as an offshore construction and service vessel in Mexico, is a 19,600-ton self-propelled, twin-hulled semisubmersible vessel that operates as a dynamically positioned (DP) construction support vessel in waters up to 488 metres deep. It provides accommodation for 350 people. The design was years ahead of its time. Originally conceived as a maintenance and support vessel (MSV), one of the many unique features of *Iolair* is the absence of horizontal cross-bracing between the pontoons. By providing a deeper platform structure, three sets of diagonal bracing were fitted from the centre line of the platform to the pontoons. Deballasting the pontoon hulls to reach the surface enables an exceptional speed of up to 12 knots for rapid response to emergencies.

Other notable industry 'firsts' include heave/swell compensation in the diving tube to enable operation in rough weather, as well as a 'citadel' area for personnel if the vessel becomes engulfed in gas. It features a drenching system to cool exterior surfaces if it gets close to a burning platform. It has the largest capacity and longest-range firefighting monitors at sea , as well as an embarked helicopter for field use. Fixed water cannons are located on the after columns to cool the underside of production platforms. A long gangway fitted with hydraulic motion compensation enables evacuation of personnel from a platform in an emergency.

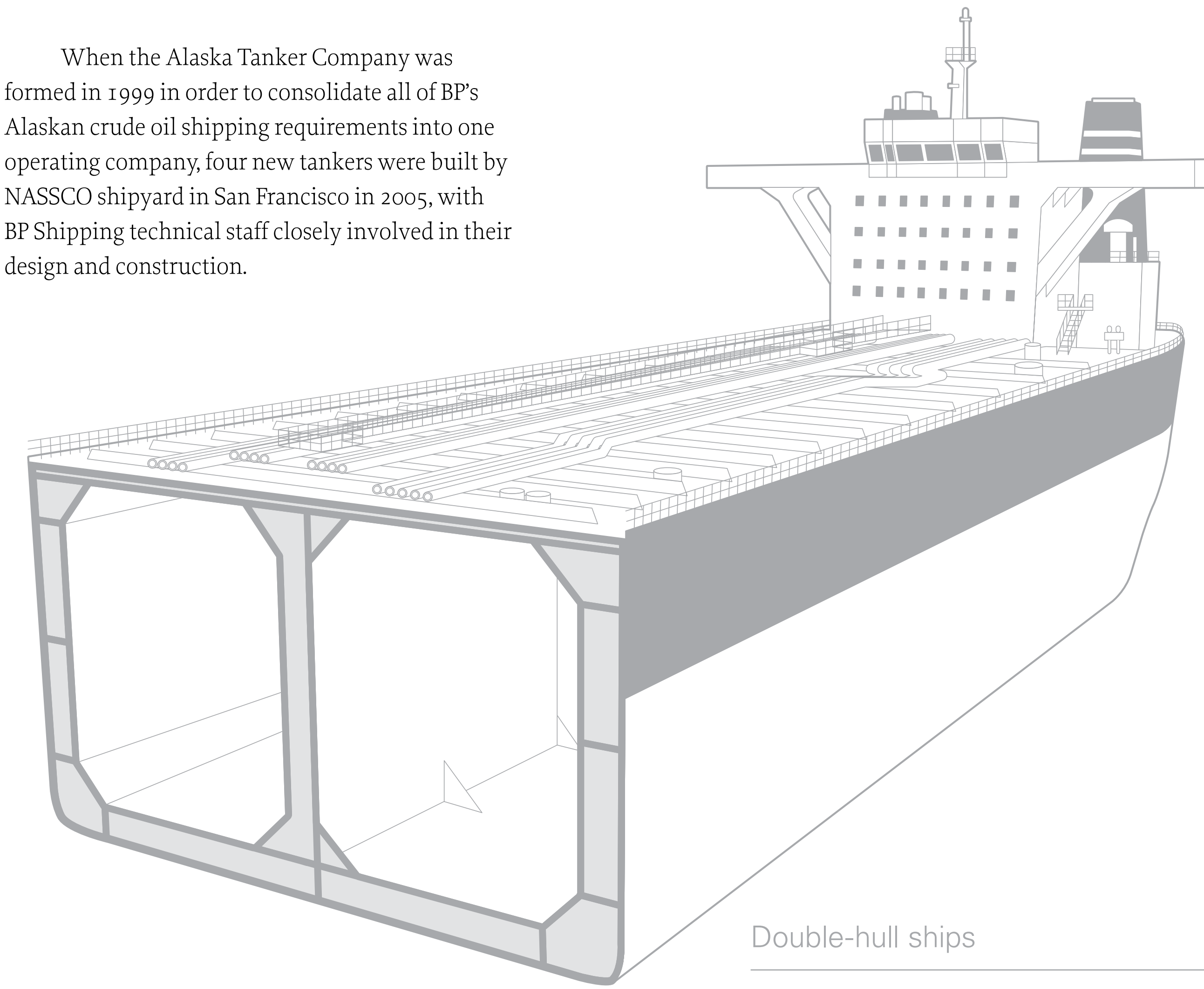
BRITISH VALOUR
FIRST DOUBLE HULL

At the end of the 1980s, the grounding of *Exxon Valdez* in Alaska culminated in the US Oil Pollution Act of 1990. This required that all tankers trading oil with the US had to be double-hulled. BP Shipping staff and BP Sohio colleagues in the US had already been involved in the design and construction of a class of two double-hulled tankers of 120,000 dwt built at Sun shipyard in Philadelphia in the US in the early 1980s, known as the Ecological class. In addition, four segregated ballast tankers of 160,000 dwt were built at Avondale Shipyard, Louisiana, US. These six vessels loaded crude oil from the Trans-Alaska Pipeline System (TAPS) at Valdez to discharge on the West Coast of the US known as the TAPS trade.

These vessels were built under the US Jones Act for domestic trade and manned by US staff and operated by US companies. The first of a new series of ships entered company service in 1997, when two VLCCs were chartered from Maersk and renamed the *British Valour* and *British Vigilance*. They were the first double-hulled tankers to enter the BPS fleet and were used principally to give experience of double-hull operations. They failed to meet universal acclaim, however, especially when one had a serious engine room explosion. Both ships were 343.7m in length and weighed 210,575 dwt.

Later that year, orders were placed with Samsung Heavy Industries of South Korea for four VLCCs in excess of two million barrels capacity, or 300,000 dwt. *British Pioneer* was the first to launch. State-of-the-art navigation systems were now fitted as standard, and, in this case, the highly-sophisticated Integrated Navigation System (INS), which used a wide range of sensors to give officers in the wheelhouse a complete overview of all alarms covering the ship's control.

When the Alaska Tanker Company was formed in 1999 in order to consolidate all of BP's Alaskan crude oil shipping requirements into one operating company, four new tankers were built by NASSCO shipyard in San Francisco in 2005, with BP Shipping technical staff closely involved in their design and construction.



Double-hull ships

A 'single-hull' design means that oil in the cargo tanks is separated from the seawater only by the ship's bottom and side plates. A 'double-hull' design (as shown here) involves surrounding the cargo tanks (two tanks in this illustration, with a slim dividing section down the middle) with a second internal plate at a sufficient distance from the external plate. The space created between the oil tank and the ship's outer side plate is often filled with seawater as ballast. This space protects the inner tanks from low-impact collision or stranding.

LOCH RANNOCH
CRUDE SHUTTLE

The 130,000 dwt *Loch Rannoch* shuttled crude from the Harland and Wolff-built Schiehallion FPSO to terminals at Sullom Voe in the Shetland Islands, Scotland. Launched in 1998 at Daewoo Heavy Industries shipyard in South Korea, where she was built to BPS specifications, *Loch Rannoch* was managed by BPS on behalf of BP Exploration with financing from Maersk. She was constructed to withstand severe North Sea wave conditions and features a modified forecastle arrangement that allows her to load crude oil in higher seas via a hose connected to the stern of the FPSO. For this severe weather operation, the structural design was enhanced by fitting two longitudinal bulkheads in the cargo block, which extend into the engine room spaces, providing enhanced protection against flooding.

She was the first BPS-designed vessel to be fitted with a double bottom under the cargo pump room, thus reducing possible vapour accumulation in the bilges, as well as increased protection from bottom-grounding penetration. An array of tunnel thrusters, two at the bow and one at the stern, together with two high-lift rudders and variable pitch propellers, provide the means to stay on station close to the stern of the FPSO while loading takes place. A diesel-electric propulsion system was fitted to power the thrusters, as well as the two main propellers controlled by a dynamic positioning system. Her laden speed is 14.5 knots.

BRITISH TRADER
A NEW GAS TRADING MODEL

BP Shipping had early involvement in the shipping of gas – both as liquefied petroleum (LPG) and liquefied natural gas (LNG) from sources such as Abu Dhabi and Australia. Traditionally, LNG first involves long-term contracts to be agreed for the multi-billion-dollar development of a gas field and gas liquefaction plant in the supplier country, plus further long-term contracts with major gas buyers in the purchasing country and contracts to ensure access to regasification facilities. Only once these deals are in place are LNG ships ordered and built – and then dedicated to moving the LNG from one supplier to a limited number of customers for the life of the contract or gas field.

But the world gas market changed in the 1990s, with market deregulation, lower costs, and swifter-to-construct LNG technologies, as well as major growth in demand for gas to generate power. Greater flexibility in the deployment of ships to meet the need for some shorter-term supply contracts and a market in spot cargoes began to emerge. BPS was at the forefront of this new trend and began to create an LNG shipping fleet that could maximise trading opportunities, as well as fulfil the company's commitments on long-term gas supply deals.

The aptly named *British Trader* was the first of the new vessels of 138,000 cubic metres capacity to launch from Samsung's yard in South Korea in 2002 fitted with the industry standard steam turbine propulsion. She took part in the commissioning of a new LNG plant in Trinidad and Tobago, which involved loading a cargo across 15 days when a normal loading would be completed in 15 hours. Across the Atlantic, a new LNG import terminal at the Isle of Grain in the UK was also commissioned, with a load discharged from *British Trader*. Instead of a set pattern of voyages, she and her two sister ships (*British Merchant* and *British Innovator*) were to ply their trade across the Atlantic and Caribbean to Cove Point, and Elba Island in the US, Bilbao in Spain, Isle of Grain in the UK, and the Dominican Republic – all fed from Trinidadian gas production. Later, they would be involved in providing 'bridging' gas to a customer in South Korea ahead of BP's new major source of LNG coming onstream in Indonesia.

Like all LNG carriers, the three new vessels were designed to transport liquid gas below its boiling point of -258.7 degrees Fahrenheit. Since no refrigeration plant exists on board, liquid gas is carried in specially insulated tanks comprising four cargo holds extending above the deck at the side to form a trunk deck. The cargo holds are lined with polyurethane foam insulation blocks separated from the liquid cargo by a stainless steel membrane, creating a remarkable space age interior of cathedral-style proportions (See image on pages 290/291).

The company continued to expand its LNG fleet between June 2007 and October 2008, when four innovative Gem class Hyundai Heavy Industries-built, 155,000 cubic-metre carriers entered service – *British Emerald*, *British Ruby*, *British Sapphire* and *British Diamond*. Built at Ulsan in South Korea, the quartet are fitted with revolutionary cargo gas-burning diesel engine technology – the DFDE (dual fuel diesel-electric) Wartsila propulsion systems, manufactured at Trieste, Italy, which cut annual carbon dioxide and sulphur dioxide emissions by an estimated 36,000 tonnes and 1,700 tonnes, respectively, while delivering service speeds of 20 knots. This technology has since been adopted across the industry.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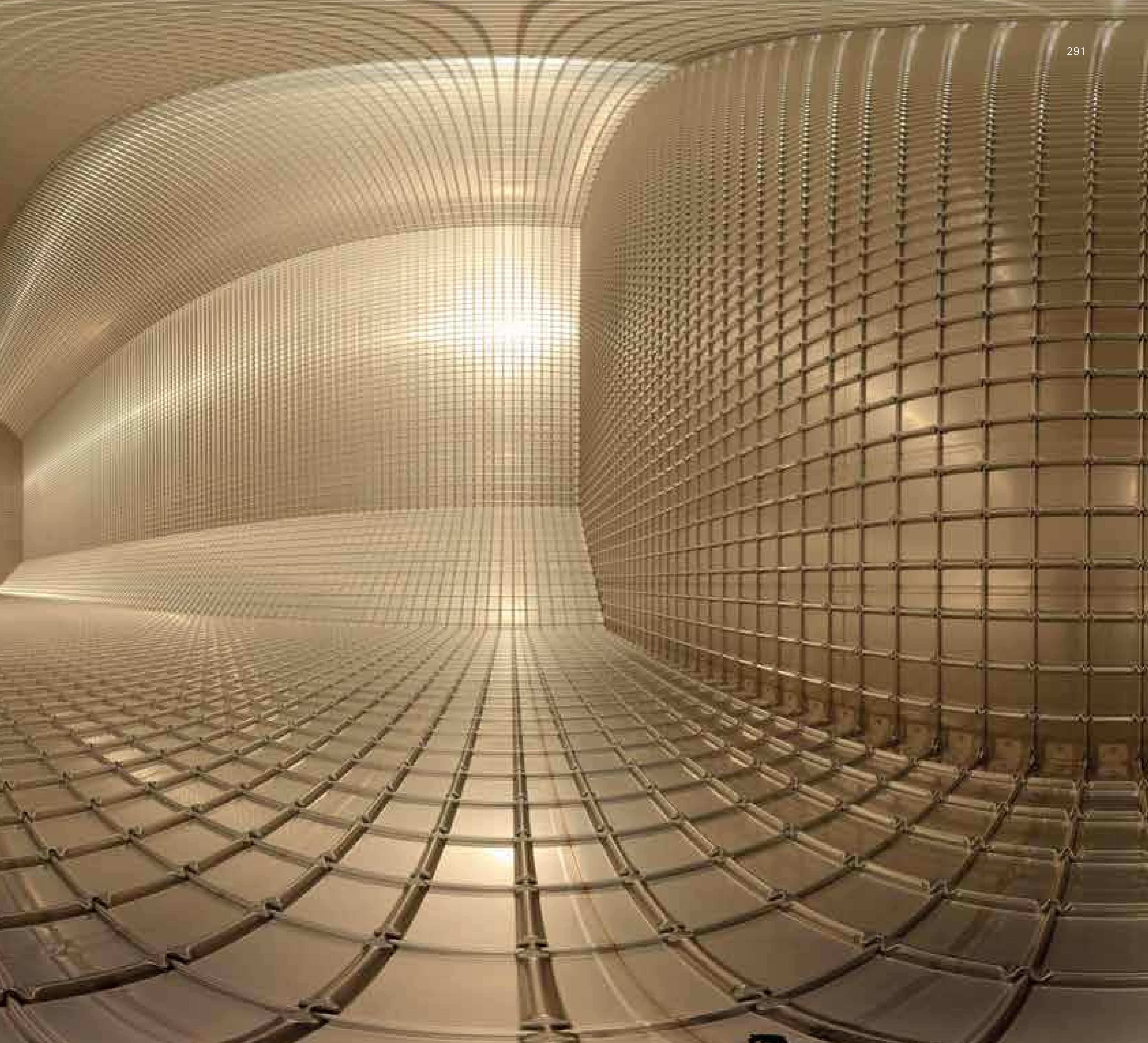


NEPTUNE, TRITON AND DELPHI
SECOND CENTURY SHIPS

In November 2014, the first steel plate for a new generation of oil tankers was cut in the yard of STX Offshore and Shipbuilding Co. Ltd (STX) marking a major milestone for BP Shipping's Project Neptune. Project Triton had also begun with a second South Korean shipyard, Hyundai Mipo Dockyard (HMD). One month later, Project Delphi was announced with a major ship building order placed with a third South Korean yard – Daewoo Shipbuilding & Marine Engineering (DSME). Neptune, Triton and Delphi represent BP Shipping's fleet renewal programme as it prepares to begin a second century of shipping BP's oil and gas around the globe.

Neptune involves the construction of 14 new oil tankers of between 110,000 and 160,000 dwt, whilst Triton will add 14 product tankers in the range 40-50,000 dwt. Meanwhile, Delphi will bring to the fleet six new LNG carriers of 173,400 cubic metres capacity. The fleet renewal programme underlines how BP is approaching its shipping requirements in a different way to that of many oil majors. The three projects allow BP Shipping to define, design and order sets of ships that meet its standards and requirements, right down to the latest in antipiracy measures and higher-capacity accommodation.

The new vessels will be the most technically and environmentally advanced that BP Shipping has ever operated and in a number of areas the design aims to exceed or anticipate current and future industry regulations by incorporating a degree of 'future-proofing'.

An International Maritime Organisation (IMO) study in 2007 estimated that international shipping emitted 870 million tonnes, or about 2.7%, of the global man-made emissions of carbon dioxide (CO_2). New regulations to drive up the efficiency of ships came into force in 2013 in the form of a mandatory Energy Efficiency Design Index (EEDI) and Ship Energy Efficiency Management Plan (SEEMP) for all ships. In addition, Emission Control Areas (ECAs) in environmentally sensitive areas around the world will require vessels to comply with tightening controls on emissions such as nitrous oxide (NOx) and sulphur dioxide (SOx).

As a result, BPS's new fleet additions will have the very latest in fuel efficiency technology, which goes above and beyond the current regulatory requirements. According to projects technical manager Ernie Bird: "This has been achieved through hull form optimisation, an increased propeller diameter, a hydrodynamic energy-saving device called a Mewis duct, and advanced engine management systems. These specifications, together with the super-long stroke/slow speed engines, will result in savings in excess of 20% in fuel consumption for both classes of oil tanker, and corresponding reductions in greenhouse gas, SOx and NOx emissions. Delphi will see the latest in tri-fuel engines, allowing the LNG carriers to utilise boil off gas, Marine Gas Oil or Heavy Fuel Oil."

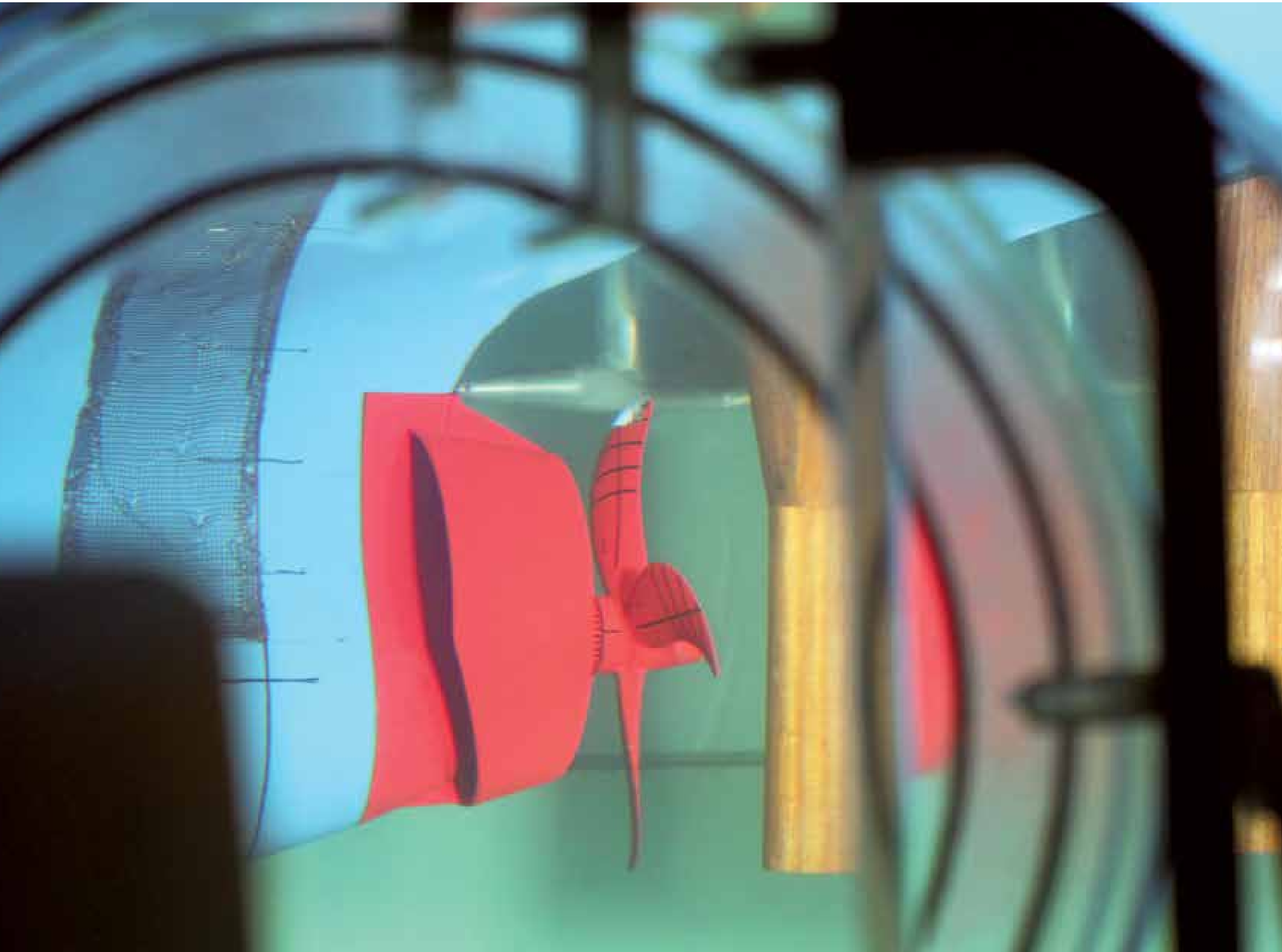
Lead naval architect James Collett was responsible for the design of the hull and accommodation layout for all three projects "We have certain dimensional requirements in the contract that give us a good starting point for an efficient hull. The Mewis duct arrangement, fitted to the Neptune vessels, which sits in front of the propeller and improves water flow through and around the propeller, greatly further enhances reducing fuel consumption."

After computer modelling, BPS required the yard to undertake testing with a model of about 7-8 metres in a towing tank, so it can measure power requirements, manoeuvring characteristics and the possibility of propeller cavitation (bubbles of vapour that impair power and cause damage). In addition, wind tunnel testing is used to reduce drag and to optimise the dispersal of exhaust gases from the funnel, ensuring that the gases are not recirculated into the engines or create a health hazard on board.

The engines for the Neptune tankers will weigh in at between 400 tonnes and 500 tonnes and are supplied by MAN Diesel and Turbo. Ironically, engine developments mean achieving fuel efficiency is more challenging than it might first appear, according to Barry Gibbs, lead marine engineer: "Some of the engines out there are extremely efficient, use very little fuel and, consequently, have very low exhaust temperatures, but we need that heat to be able to produce steam and it's a balance between how efficient we want the engine to be and how much heat we need."

In Project Triton, the vessels will incorporate a system for 'scrubbing' of the exhaust gases from the engines by passing them through a mixture of water and urea – an organic chemical compound. This removes much of the SOx – enabling the new vessels to trade worldwide by meeting and beating projected future regulated standards for such emissions.

Opportunities for electrical efficiencies in the new ship designs go from top to bottom, according to lead electrical engineer Steve Taylor. Combined with the hull and main engine efficiencies, all of this means the Neptune and Triton ships are going to be able to perform at a level more than 20% better than that required by the newly-mandated IMO benchmarks.



Summary

The fleet at one hundred

The Neptune, Triton and Delphi projects complete 100 years of ship design and construction begun in 1915. More than 500 tankers were built during this period – an astonishing average launch rate of one new tanker every 10 weeks for every year of the century. The number is even greater when taking account of the many small vessels that augmented the BP Shipping fleet.

The early vessels, such as *British Emperor*, were largely standard designs developed by UK shipbuilding companies, with little design input from the owners. That was to change, as vessels became larger and more complex and, in the modern era, the design remit extended to the specialist vessels required to service BP's burgeoning offshore oil and gas interests.

In 2015, BP Shipping's design team has had to embrace a very different world to that of its predecessors a century ago. The potential of modern technologies is boundless; the breadth and scope of regulation to be managed and anticipated ever-changing; and the relationship with construction yards has evolved from the great heyday of British shipbuilding to develop in new ways with new yards right across the world.

Ships are today safer, more efficient and more environmentally friendly. They offer technologies, as well as creature comforts undreamt of by the officers and crew of *British Emperor*. Projects Neptune, Triton and Delphi are set to continue this trend and deliver a new generation of vessels for BP Shipping that will surpass the standards of those that came before.

In this, they will continue a tradition that has seen BP's shipping arm introduce some of the greatest advances in tanker safety and pollution control – including inert gas systems, crude oil washing and clean ballast – well before such measures became mandatory by international regulation.

From the testing tank to sailing the world's great oceans, these new ships are designed to underpin a second century of 'riding the waves'.


18
SSPA

VESSELS IN SERVICE – 1915-2015

Ship name	No	Tonnage (dwt)	Type*	Acquired	Disposed of
Kerman			Cased oil	1915	1920
Ferrara		1,650	Cased oil	1915	1922
Br. Emperor		5,796		1916	1941
Aras		5,098		1917	1930
Br. Empress		10,738		1917	1936
Br. Princess		10,800		1917	1948
Br. Baron		10,700		1917	1925
Br. Duke		5,700		1917	1930
Br. Earl		8,820		1917	1929
Br. Knight		7,500		1917	1929
Br. Light				1917	1937
Br. Marquis		6,995		1917	1930
Br. Peer		7,140		1917	1930
Br. Viscount		5,000		1917	1918
Br. Admiral		10,738		1917	1936
Br. Sovereign		5,796		1917	1951
Br. Ensign		10,860		1917	1937
Br. Isles		10,240		1917	1938
Scandanavia			Schooner	1917	1922
Br. Beacon				1918	1937
Br. General		4,500		1918	1920
Br. Lantern				1918	1937
Br. Major		5,700		1918	1928
Br. Marshal		6,000		1918	1929
Br. Star				1918	1937
Eupion				1918	1918
Kura		3,800		1918	1924
Mexican Prince		4,000		1918	1919
Rion		3,200		1918	1920
Suram		5,000		1918	1920
Br. Birch	1st	9,000		1919	1931
Br. Holly		7,480		1919	1931
Br. Soldier		8,460		1919	1952
Br. Maple		10,790		1919	1932
Br. Vine		11,000		1919	1923
Br. Rose		9,250		1920	1930
Br. Fern		8,400		1920	1931
Br. Sailor		8,450		1920	1951

Ship name	No	Tonnage (dwt)	Type	Acquired	Disposed of
Br. Tommy		1,874	Coaster	1921	1946
Br. Viscount	2nd	10,873		1921	1941
Br. Colonel		10,995		1921	1953
Br. Trader		6,089		1921	1953
Br. Chancellor		10,925		1921	1952
Br. Judge		10,573		1921	1953
Br. Enterprise		6,089		1922	1936
Br. Mariner		10,772		1922	1941
Saint Patrice		2,645		1922	1922
Br. Workman		10,898		1922	1942
Br. Corporal		10,817		1922	1940
Br. Councillor		10,925		1922	1940
Br. Engineer		10,898		1922	1952
Br. Grenadier		10,750		1922	1941
Br. Commerce		6,089		1922	1937
Br. General	2nd	10,822		1922	1940
Br. Advocate		10,925		1922	1941
Br. Gunner		10,750		1922	1941
Br. Scout		2,210		1922	1957
Br. Sergeant		9,122		1922	1942
Br. Merchant		10,729		1922	1949
Br. Lord		9,517		1922	1953
Br. Officer		10,822		1922	1940
Br. Commander		11,028		1922	1940
Br. Architect		11,624		1922	1953
Br. Premier		9,132		1922	1940
Br. Statesman		10,925		1923	1953
Br. Fusilier		10,873		1923	1952
Br. Captain		10,822		1923	1941
Br. Lady		9,517		1923	1939
Br. Commodore		11,028		1923	1953
Br. Yeoman		10,822		1923	1942
Br. Hussar		10,929		1923	1953
Br. Ambassador		11,008		1924	1954
Br. Duchess		9,405		1924	1952
Br. Aviator		10,762		1924	1953
Br. Motorist		10,772		1924	1942
Br. Consul		11,008		1924	1942

* No entry indicates general purpose tanker.

Ship name	No	Tonnage (dwt)	Type	Acquired	Disposed of
Khuzistan		871	Cased oil	1924	1953
Br. Chemist		10,762		1925	1953
Br. Petrol		10,774		1925	1940
Br. Diplomat		9,151		1926	1940
Br. Inventor		11,693		1926	1940
Br. Governor		10,904		1926	1953
Br. Colony		10,840		1927	1942
Br. Industry	2nd	6,631		1927	1953
Br. Endeavour		6,906		1927	1940
Br. Progress		6,906		1927	1943
Br. Union		10,912		1927	1941
Br. Valour		10,959		1927	1941
Br. Faith		10,887		1928	1956
Br. Loyalty		10,440		1928	1946
Br. Glory		10,876		1928	1954
Br. Reliance		11,066		1928	1941
Br. Hope		10,830		1928	1957
Br. Courage		10,927		1928	1953
Br. Dominion		10,912		1928	1943
Br. Renown		10,950		1928	1954
Br. Freedom		10,440		1928	1945
Br. Ardour		11,196		1928	1943
Br. Honour		11,135		1928	1952
Br. Pluck		1,087	Coaster	1928	1940
Br. Justice		11,147		1928	1954
Br. Thrift (Thriftie)		690	Coaster	1928	1943
Br. Chivalry		11,220		1929	1944
Br. Fortune		6,913		1930	1941
Br. Venture		6,922		1930	1943
Taraqqi		388	Cased oil	1930	1955
Br. Science		11,082		1931	1941
Br. Pride		11,040		1931	1955
Br. Splendour		11,095		1931	1942
Br. Resource		11,186		1931	1942
Br. Prestige		11,040		1931	1956
Br. Strength		11,095		1931	1941
Br. Energy		11,186		1931	1955
Br. Fame		12,250		1936	1940
Br. Endurance		12,250		1936	1959
Br. Confidence		12,262		1936	1958
Br. Triumph		12,200		1936	1940
Br. Power		12,127		1936	1958
Br. Destiny		12,176		1937	1958
Br. Fortitude		12,265		1937	1958
Br. Diligence		12,235		1937	1958

Ship name	No	Tonnage (dwt)	Type	Acquired	Disposed of
Br. Resolution		12,235		1937	1959
Br. Integrity		12,145		1937	1958
Br. Zeal		12,180		1937	1959
Br. Security		12,121		1937	1941
Br. Fidelity		12,201		1938	1958
Br. Genius		12,416		1939	1960
Br. Trust		12,416		1939	1943
Br. Sincerity		12,207		1939	1958
Br. Tenacity		12,254		1939	1959
Br. Liberty		12,490		1939	1940
Br. Prudence		12,451		1939	1942
Br. Unity		12,300		1939	1960
Br. Influence		12,443		1939	1939
Br. Harmony		12,458		1941	1960
Br. Character		12,458		1941	1959
Br. Vigilance		12,028		1942	1943
Br. Merit		11,961		1942	1960
Br. Tradition		12,322		1942	1960
Br. Promise		12,415		1942	1959
Br. Gratitude		12,355		1942	1959
Br. Vigour		8,485		1943	1959
Br. Respect		12,319		1943	1959
Br. Purpose		8,485		1943	1959
Br. Patience		11,961		1943	1961
Br. Restraint		12,273		1943	1959
Br. Might		12,202		1945	1961
Br. Virtue		12,390		1945	1961
Br. Wisdom		12,281		1945	1960
Br. Cavalier		14,720		1945	1959
Br. Lancer		14,685		1945	1960
Br. Dragoon		14,525		1945	1962
Br. Guardsman		11,941		1945	1951
Br. Commando		11,727		1945	1960
Br. Supremacy		12,330		1945	1961
Br. Bombardier		11,742		1946	1959
Br. Success		12,382		1946	1961
Br. Caution		12,490		1946	1961
Br. Major	2nd	12,310		1946	1961
Br. Piper		12,300		1946	1961
Br. Bugler		5,093		1946	1957
Br. Marquis	2nd	12,310		1946	1961
Br. Drummer		5,070		1946	1957
Br. Commerce	2nd	8,308		1946	1961
Br. Princess	2nd	12,354		1946	1961
Br. Pilot		12,410	MAC	1946	1962

Ship name	No	Tonnage (dwt)	Type	Acquired	Disposed of
Br. Escort		12,450	MAC	1946	1959
Br. Swordfish		12,080	MAC	1946	1959
Br. Marshal	2nd	12,310		1946	1961
Br. Knight	2nd	12,300		1946	1961
Br. Rose	2nd	8,396		1946	1961
Br. Earl	2nd	12,250		1946	1961
Br. Enterprise	2nd	8,370		1946	1961
Br. Holly	2nd	12,354		1946	1964
Br. Admiral	2nd	12,283		1947	1961
Br. Baron	2nd	12,412		1947	1961
Br. Empress	2nd	12,245		1947	1961
Br. Ensign	2nd	12,257		1947	1961
Rouge River	2nd	16,494	T2	1947	1959
Cottonwood Creek		16,505	T2	1947	1955
Fort Stevens		16,512	T2	1947	1959
Red Bank		16,546	T2	1947	1959
Chisholm Trail		16,364	T2	1947	1955
Fort Frederica		16,385	T2	1947	1959
Mesa Verde		16,377	T2	1947	1955
El Morro		16,401	T2	1947	1959
Beecher Island		16,495	T2	1947	1959
Smoky Hill		16,387	T2	1947	1957
Br. Fern	2nd	12,310		1947	1961
Br. Isles	2nd	12,257		1947	1962
Iran (later Widad)		840		1947	1962
Br. Duke	2nd	12,420		1948	1962
Br. Ranger	2nd	12,344		1948	1963
Br. Security	2nd	12,306		1948	1966
Br. Advocate	2nd	12,306		1948	1962
Br. Scientist		12,362		1948	1963
Br. Councillor	2nd	12,275		1948	1967
Br. Strength	2nd	12,278		1948	1966
Br. Venture	2nd	8,396		1948	1961
Br. Progress	2nd	12,560		1948	1963
Br. Mariner	2nd	12,303		1948	1962
Br. Chivalry	2nd	16,847		1949	1972
Br. Endeavour	2nd	12,250		1949	1962
Br. Fortune	2nd	8,380		1949	1961
Br. Fame	2nd	16,849		1949	1972
Br. Yeoman	2nd	12,243		1949	1963
Br. Workman		12,328		1949	1967
Br. Prudence	2nd	12,545		1949	1966
Br. Liberty	2nd	12,250		1949	1964
Br. Loyalty	2nd	12,250		1949	1967
Br. Resource	2nd	16,880		1949	1972

Ship name	No	Tonnage (dwt)	Type	Acquired	Disposed of
Br. Ardour	2nd	12,198		1949	1962
Br. Captain	2nd	12,303		1949	1962
Br. Triumph	2nd	12,245		1949	1963
Pazan			Coaster	1949	1956
Br. Reliance	2nd	16,687		1950	1963
Br. Freedom	2nd	16,849		1950	1972
Br. Commander	2nd	12,244		1950	1962
Br. Patriot		12,120		1950	1963
Br. General	3rd	12,150		1950	1964
Br. Union	2nd	12,167		1950	1962
Br. Consul	2nd	12,275		1950	1963
Br. Trust	2nd	12,248		1950	1963
Br. Explorer		12,243		1950	1964
Br. Defender		8,420		1950	1965
Br. Peer	2nd	12,120		1950	1963
Br. Prospector		12,243		1950	1964
Br. Diplomat	2nd	8,420		1950	1961
Br. Surveyor		12,250		1950	1963
Br. Splendour	2nd	16,823		1950	1972
Br. Navigator		8,520		1951	1964
Br. Sportsman		16,798		1951	1972
Br. Premier	2nd	12,250		1951	1964
Br. Builder		12,270		1951	1963
Br. Rover		8,480		1951	1961
Br. Seafarer		16,800		1951	1973
Br. Craftsman		12,270		1951	1964
Br. Birch		12,270		1951	1964
Br. Viscount	3rd	12,169		1951	1965
Br. Lady	2nd	8,436		1951	1963
Br. Pluck	2nd	882	Coaster	1951	1954
Br. Guide		12,125		1951	1963
Br. Warrior		8,490		1951	1961
Br. Adventure		30,218		1951	1973
Br. Pioneer		12,390		1951	1965
Br. Bulldog		30,099		1951	1972
Br. Maple	2nd	12,160		1951	1972
Border Regiment		16,000	Products	1952	1969
Br. Talent		30,132		1952	1972
Br. Realm		28,624		1952	1970
Br. Skill		29,891		1952	1972
Br. Crown		28,598		1952	1966
Border Keeper		16,000	Products	1953	1970
Border Lass		16,000	Products	1953	1970
Br. Sailor	2nd	33,682		1953	1972
Br. Flag		16,750		1953	1971

Ship name	No	Tonnage (dwt)	Type	Acquired	Disposed of
Br. Oak		16,562		1953	1972
Br. Guardian		16,481		1953	1972
Br. Envoy		16,768		1953	1970
Border Fusilier		16,000	Products	1954	1970
Border Hunter		16,000	Products	1954	1970
Border Minstrel		16,000	Products	1954	1972
Br. Merchant	2nd	31,750		1954	1973
Br. Crusader		16,529		1954	1972
Br. Engineer	2nd	31,785		1954	1972
Br. Gunner	2nd	14,571		1954	1972
Br. Hero		15,800		1954	1972
Br. Corporal	2nd	14,577		1954	1972
Br. Vision		16,070		1954	1972
Br. Chancellor	2nd	16,808		1954	1972
Br. Sergeant	2nd	13,712		1954	1972
Br. Soldier	2nd	33,601		1954	1972
Br. Patrol		16,518		1954	1973
Br. Sovereign	2nd	32,154		1954	1972
Border Laird		16,000	Products	1955	1972
Border Reiver		16,000	Products	1955	1970
Br. Officer	2nd	15,839		1955	1973
Br. Victory		34,118		1955	1973
Border Terrier		16,000	Products	1956	1972
Br. Industry	3rd	33,472		1957	1973
Br. Renown	2nd	16,672		1957	1970
Br. Vigilance	2nd	16,672		1957	1973
Br. Glory	2nd	33,702		1957	1973
Br. Valour	2nd	33,246		1957	1973
Br. Trader	2nd	33,636		1957	1973
Br. Courage	2nd	35,572		1957	1973
Br. Justice	2nd	33,769		1957	1973
Br. Honour	2nd	33,454		1958	1973
Br. Faith	2nd	33,766		1958	1973
Br. Architect	2nd	36,046		1958	1975
Br. Energy	2nd	37,244		1958	1975
Br. Aviator	2nd	37,232		1958	1975
Br. Duchess	2nd	44,824	Crude	1958	1975
Br. Ambassador	2nd	44,929	Crude	1958	1975
Br. Fulmar		15,983	Products	1959	1976
Br. Light		36,754		1959	1975
Br. Statesman	2nd	44,702	Crude	1959	1975
Br. Judge	2nd	44,804	Crude	1959	1975
Br. Trust	3rd	15,600	Products	1959	1976
Br. Swift		16,041	Products	1959	1977
Br. Beacon		35,031		1959	1973

Ship name	No	Tonnage (dwt)	Type	Acquired	Disposed of
Br. Gannet		15,262	Products	1959	1976
Br. Star		36,954		1959	1973
Br. Power	2nd	44,799	Crude	1959	1975
Br. Destiny	2nd	44,902	Crude	1959	1975
Br. Queen		49,967	Crude	1959	1975
Border Pele			Coaster	1960	1976
Border Shepherd			Coaster	1960	1976
Br. (Forties) Kiwi		16,183	Products	1960	1986
Br. Robin		15,450	Products	1960	1977
Br. Lantern	2nd	36,914		1960	1973
Br. Gull		15,939	Products	1960	1982
Br. Mallard		15,866	Products	1960	1978
Br. Curlew		15,389	Products	1960	1976
Br. Comet		36,903	Crude	1960	1975
Border Castle			Coaster	1961	1976
Border Chieftain			Coaster	1961	1976
Border Falcon			Coaster	1961	1976
Br. Signal		35,275	Crude	1961	1971
Br. Cormorant		16,039	Products	1961	1977
Br. Osprey		16,055	Products	1962	1977
Br. Prestige	2nd	44,924	Crude	1962	1975
Br. Kestrel		15,922	Products	1962	1976
Br. Merlin		16,116	Products	1962	1977
Br. Hussar	2nd	52,546	Crude	1962	1976
Br. Cygnet	2nd	15,441	Products	1962	1977
Br. Bombardier	2nd	54,116	Crude	1962	1976
Br. Cavalier	2nd	54,557	Crude	1962	1975
Br. Grenadier	2nd	54,778	Crude	1962	1976
Br. Venture	3rd	38,112	Crude	1963	1978
Br. Guardsman	2nd	54,611	Crude	1963	1975
Br. Diplomat	3rd	49,320	Crude	1963	1975
Br. Lancer	2nd	54,694	Crude	1963	1976
Br. Mariner	3rd	74,635	Crude	1963	1975
Br. Dragoon	2nd	52,928	Crude	1963	1982
Br. Ensign	3rd	75,578	Crude	1964	1976
Br. Hazel		20,462	Products	1964	1982
Br. Hawthorn		20,551	Products	1964	1983
Br. Fern	3rd.	20,638	Products	1964	1983
Br. Beech		20,750	Products	1964	1976
Sea Gem		5600 gt	Barge rig	1964	1965
Br. Holly	3rd	20,638	Products	1965	1983
Br. Vine	2nd	20,835	Products	1965	1983
Br. Willow		20,750	Products	1965	1983
Br. Commerce	3rd	69,579	Crude	1965	1983
Br. Laurel		20,826	Products	1965	1981

Ship name	No	Tonnage (dwt)	Type	Acquired	Disposed of
Br. Admiral	3rd	111,274	Crude	1965	1976
Br. Confidence	2nd	67,944	Crude	1965	1976
Br. Poplar	2nd	20,774	Products	1965	1992
Br. Ivy	2nd	20,638	Products	1965	1992
Br. Maple	3rd	20,774	Products	1965	1981
Sea Quest		150,000 gt	Semi-sub	1966	1977
Br. Captain	3rd	67,944	Crude	1966	1976
Br. Centaur		67,697	Crude	1966	1983
Br. Argosy		112,786	Crude	1966	1976
Br. Commodore	2nd	67,862	Crude	1967	1982
BP Endeavour	3rd	19,500	Aus coast	1967	1987
BP Enterprise	3rd	19,480	Aus coast	1968	1989
Br. Liberty	3rd	24,000	Products	1968	1981
Br. Loyalty	3rd	23,900	Products	1968	1981
Br. Security	2nd	23,900	Products	1969	1989
Br. Tenacity	2nd	24,000	Products	1969	1989
Br. Unity	2nd	24,386	Products	1969	1981
Br. Fidelity	2nd	24,414	Products	1969	1985
Br. Explorer	2nd	215,603	VLCC	1970	1981
Br. Inventor	2nd	215,423	VLCC	1970	1981
Br. Pioneer	2nd	226,137	VLCC	1971	1981
Br. Navigator (Sivand)	2nd	215,139	VLCC	1971	1976
Br. Scientist	2nd	219,994	VLCC	1971	1981
Br. Prospector	2nd	218,814	VLCC	1971	1979
Br. Surveyor (Shoush)	2nd	222,745	VLCC	1972	1976
Br. Dart		25,245	Products	1972	1986
Br. Avon		25,215	Products	1972	1985
Br. Humber		24,448	Products	1973	1991
Br. Test		25,245	Products	1973	1986
Br. Tamar		25,094	Products	1973	2000
Br. Kennet		25,127	Products	1973	1986
Br. Tay		25,650	Products	1973	1992
Br. Esk		25,178	Products	1973	2001
Br. Norness		260,905	VLCC	1973	1989
Br. Tweed		25,559	Products	1973	1986
Br. Pride	2nd	218,000	VLCC	1973	1976
Br. Progress	3rd	224,989	VLCC	1973	1985
Br. Trent		25,550	Products	1973	1993
Br. Forth		25,551	Products	1973	1993
Br. Neath (Mokran)		25,246	Products	1974	1976
Br. Promise	2nd	253,839	VLCC	1974	1976
Br. Wye		25,600	Products	1974	1992
Br. Purpose	2nd	228,600	VLCC	1974	1985
Br. Renown	2nd	270,025	VLCC	1974	1994
Br. Patience	2nd	253,839	VLCC	1974	1982
Br. Severn (Marun)		25,245	Products	1974	1976
Br. Spey		25,591	Products	1974	1985
Br. Trident		270,983	VLCC	1974	1992
Br. Fal (Minab)		25,244	Products	1974	1976
Br. Resolution	2nd	270,026	VLCC	1974	2000
Br. Respect	2nd	277,746	VLCC	1974	1992
Br. Resource	3rd	265,450	VLCC	1975	2000
Br.Reliance	3rd	265,510	VLCC	1975	2000
Br. Ranger	2nd	265,617	VLCC	1976	2000
Border Castle		20,452	Coaster	1976	1981
Border Chieftan		20,504	Coaster	1976	1979
Border Falcon		20,504	Coaster	1976	1982
Border Pele		20,457	Coaster	1976	1981
Border Shepherd		20,584	Coaster	1976	1981
Sulair		1,939	Supply	1979	1985
Gas Enterprise	4th	28,724	LPG	1980	1992
Fasgdair			ESV	1981	1988
Br. Spirit		109,000	Crude	1982	1992
Iolair			ESV	1982	1992
Seagair			ESV	1982	1988
BP Achiever/Br. Strength		127,000	Crude	1983	2003
Br. Skill	2nd	127,000	Crude	1983	2002
Br. Success		109,000	Crude	1984	1991
BP Energy		32,000	Products	1985	1990
BP Vigour		87,000	Crude	1985	1988
BP Vision		89,000	Crude	1985	1988
BP Advocate	3rd	40,000		1988	1993
BP Architect	3rd	40,000		1988	1993
Seillean		47,000	SWOPS	1989	1996
Br. Admiral	4th	40,000		1990	2004
Br. Adventure	2nd	40,000		1990	2004
Br. Argosy	2nd	40,000		1991	2004
Northwest Shearwater		125,000m^3	LNG	1991	
Welsh Venture		281,000	Crude	1993	1997
Oriental Venture		281,000	Crude	1993	1997
Al Khaznah		135,000m^3	LNG	1994	2007
Border Battler		2,000	Coaster	1994	2004
Border Jouster		2,000	Coaster	1994	2005
Border Springer		2,000	Coaster	1994	2004
Border Warrior		2,000	Coaster	1994	2004
Shahama		135,000m^3	LNG	1994	2007
Ghasha		135,000m^3	LNG	1995	2007
Ish		135,000m^3	LNG	1995	2007
Loch Rannoch		130,000	Shuttle	1996	2013
Br. Harrier		150,000	Suezmax	1996	2004

Ship name	No	Tonnage (dwt)	Type	Acquired	Disposed of
Br. Hawk		150,000	Suezmax	1997	2004
Br. Hunter		150,000	Suezmax	1997	2004
Br. Valour	3rd	210,000	VLCC	1997	2002
Br. Vigilance	3rd	210,000	VLCC	1997	2002
Br. Pioneer	3rd	309,000	VLCC	2000	2011
Br. Pride	3rd	309,000	VLCC	2000	2014
Br. Progress	4th	309,000	VLCC	2000	2014
Br. Purpose	3rd	309,000	VLCC	2000	
Br. Energy	3rd	37,000	Products	2001	2006
Br. Enterprise	5th	37,000	Products	2001	2006
Br. Endeavour	3rd	37,000	Products	2002	2007
Br. Endurance	2nd	37,000	Products	2002	2007
Br. Laurel	2nd	105,000	Aframax	2002	2013
Br. Trader	3rd	138,000m^3	LNG	2002	
Br. Esteem		37,000	Products	2003	
Br. Explorer	3rd	37,000	Products	2003	
Br. Beech	2nd	105,000	Aframax	2003	
Br. Hawthorn	2nd	105,000	Aframax	2003	2013
Br. Oak	2nd	105,000	Aframax	2003	2013
Br. Willow	2nd	105,000	Aframax	2003	2013
Br. Merlin	2nd	115,000	Aframax	2003	
Br. Osprey	2nd	115,000	Aframax	2003	
Br. Swift	2nd	115,000	Aframax	2003	
Br. Merchant	3rd	138,000m^3	LNG	2003	
Alaskan Frontier		185,000	Crude	2004	
Alios Athena		2,000	Products/chem	2004	
Alios Apollo		2,000	Products/chem	2004	2010
Alios Hermes		1,500	Products/chem	2004	2010
Alios Hera		1,500	Products/chem	2004	2010
Alios Artemis		2,000	Products/chem	2004	2010
Alios Poseidon		3,500	Products/chem	2004	2010
Anatolia Sea		2,000	Products/chem	2004	2013
Border Heather		3,004	Coaster	2004	2010
Boarder Thistle		4,500	Coaster	2004	2010
Border Jouster		3,000	Coaster	2004	2010
Br. Curlew	2nd	115,000	Aframax	2004	
Br. Fidelity	3rd	46,000	Products	2004	
Br. Hazel	2nd	105,000	Aframax	2004	
Br. Holly	4th	105,000	Aframax	2004	
Br. Innovator		138,000m^3	LNG	2004	
Br. Integrity	2nd	46,000	Products	2004	
Br. Liberty	4th	46,000	Products	2004	
Br. Loyalty	4th	46,000	Products	2004	
Br. Mallard	2nd	115,000	Aframax	2004	
Br. Security	3rd	46,000	Products	2004	
Br. Tenacity	3rd	46,000	Products	2004	
Br. Unity	3rd	46,000	Products	2004	
Br. Vine	3rd	105,000	Aframax	2004	
Alaskan Frontier		185,000	Crude	2004	
Alaskan Adventure		185,000	Crude	2005	
Alaskan Explorer		185,000	Crude	2005	
Alaskan Legend		185,000	Crude	2005	
Anatolia Sky		3,800	Products/chem	2005	2005
Anatolia Star		3,800	Products/chem	2005	2013
Border Tartan		2,730	Coaster	2005	2010
Br. Chivalry	3rd	46,000	Products	2005	
Br. Cormorant	2nd	115,000	Aframax	2005	
Br. Courtesy		46,000	Products	2005	
Br. Cygnet	2nd	115,000	Aframax	2005	
Br. Gannet	2nd	115,000	Aframax	2005	
Br. Harmony	2nd	46,000	Products	2005	
Br. Robin	2nd	115,000	Aframax	2005	
Br. Serenity		46,000	Products	2005	
Br. Tranquility		46,000	Products	2005	
Br. Confidence	3rd	83,000m^3	LPG	2006	2012
Br. Courage	3rd	50,000	LPG	2006	
Br. Eagle		115,000	Aframax	2006	
Br. Ensign		37,615	37s	2006	
Br. Envoy		37,582	37s	2006	
Br. Falcon	2nd	115,000	Aframax	2006	
Br. Kestrel	2nd	115,000	Aframax	2006	
Br. Commerce	4th	50,000	LPG	2007	
Br. Councillor	3rd	50,000	LPG	2007	
Br. Emerald		85,000	LNG	2007	
Br. Emissary		36,200	37s	2007	
Br. Diamond		84,553	LNG	2008	
Br. Ruby		84,304	LNG	2008	
Br. Sapphire		84,303	LNG	2008	
Dapeng Sun		147,000m^3	LNG	2008	2013
Dapeng Moon		147,000m^3	LNG	2008	2013
Dapeng Star		147,000m^3	LNG	2009	2013
Br. Vantage		320,299	VLCC	2013	
Br. Venture		320,299	VLCC	2013	
NS Elida		5,000	PSV	2014	
NS Iona		5,000	PSV	2014	

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INDEX

GLOSSARY

BAREBOAT CHARTER
An arrangement for the chartering or hiring of a vessel, under which the vessel's owner provides the 'bare' vessel to the charterer, who then has to provide the crew, provisions, fuel and maintenance.

BILGE
The compartment at the bottom of the hull of a ship or boat where water and other liquids collect and must be pumped out of the vessel.

BUNKER
A space or tank for storing coal or liquid fuel for a ship's engine. Bunkers are fuel or marine diesel oil for a ship.

COMMODORE
Master with oversight of multiple vessels or a fleet.

DEADWEIGHT TONNAGE (DWT)
A measurement of a ship's tonnage which indicates the actual carrying capacity of a merchant ship expressed in tonnes weight. The figure is arrived at by calculating the amount of water displaced by a ship when she is unloaded but with her fuel tanks full and stores on board and the amount of water similarly displaced when she is fully loaded with her cargo.

CLEAN AND DIRTY TANKERS
In general, smaller tankers carry 'clean' products cargoes (refined petroleum products, whose colour is less than or equal to 2.5 on the National Petroleum Association Scale such as naphtha, gasoline, diesel/gasoil fuel, or jet fuel). Large tankers generally carry 'dirty' (black oil or crude oil) cargoes. Tankers of less than 100,000 dwt are referred to as trading either 'clean' or 'dirty'. Different freight rates are payable for ships trading clean as apposed to dirty.

ENTREPOT
An intermediary centre of trade and transshipment. A trade-network or a central point where goods are temporarily landed and physically traded, before being re-exported to their final destinations.

FLAG OF CONVENIENCE
The business practice of registering a merchant ship in a sovereign state different from that of the ship's owners, flying that state's civil ensign (flag) on the ship and operating the ship under the laws and regulations of that state. The practice may allow the ship's owner to reduce operating costs or avoid the regulations of the owner's country.

FO'C'S'LE/FORECASTLE
A partial deck, above the main or weather deck and at the bow of the vessel; historically the sailors' living quarters. The name is derived from the castle fitted in medieval times to bear archers in time of war.

FREE ON BOARD (FOB)
A commercial term requiring that the seller of a cargo clears the goods for export and delivers the goods on board the ship at the port of shipment. The seller is responsible for the goods until they have passed the ship's rail at the port of shipment. The buyer arranges any import licence and pays freight, insurance, unloading costs, customs dues and transportation from the port of discharge to final destination.

FREIGHT DERIVATIVES
Financial instruments used to hedge risk in the tanker freight markets. Freight derivatives, such as swaps or forward freight agreements (FFA), can be used to protect ship owners against changes in freight rates.

GROSS TONNAGE
A measure of the volume contained inside a vessel, expressed in imperial tons of 2,240 pounds. This includes all areas from keel to funnel and bow to stern. Gross Tonnage is used to determine the minimum safe number of crew, as well as other safety rules, registration fees, and port dues.

IMCO/IMO
The Inter-Governmental Maritime Consultative Organization IMCO, now succeeded by the International Maritime Organisation (IMO) is an agency of the United Nations, originally established in 1948. IMO is today the global standard-setting authority for the safety, security and environmental performance of international shipping. Its main role is to create a regulatory framework for the shipping industry worldwide.

LOAD LINE
A special marking, positioned amidships, that indicates the draft of the vessel and the legal limit to which the vessel may be loaded for specific water types and temperatures.

MARPOL
The International Convention for the Prevention of Pollution from Ships (MARPOL) is the main international convention covering prevention of pollution of the marine environment by ships from operational or accidental causes and was adopted on 2 November 1973 at IMO but did not enter into force until 2 October 1983. It has since been modified by a Protocol in 1978 and a Protocol in 1997.

MASTER
Aboard a merchant ship, the ship's master is her 'captain'.

OIL COMPANIES INTERNATIONAL MARINE FORUM (OCIMF)
OCIMF was formed in April 1970 in response to the growing public concern about marine pollution, particularly by oil, after the *Torrey Canyon* incident in 1967. In the early 1970s, a variety of anti-pollution initiatives were starting to emerge nationally, regionally and internationally, but with little coordination. Through OCIMF, the oil industry was able to play a stronger, coordinating role in response to these initiatives, making its professional expertise widely available through cooperation with governments and intergovernmental bodies.

OILPOL
The potential for oil to pollute the marine environment was recognised by the International Convention for the Prevention of Pollution of the Sea by Oil, 1954 (OILPOL 1954). The Conference adopting the Convention was organised by the United Kingdom government, and the Convention provided for certain functions to be undertaken by IMO when it came into being.