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Black Diamonds: Coal, the Royal Navy,
and British Imperial Coaling Stations,
circa 1870–1914.

Steven Gray

A thesis submitted in fulfilment of the requirements for the
degree of

Doctor of Philosophy in History

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Table of Contents

List of Figures	4
Acknowledgements	7
Declaration	8
Abstract	9
Abbreviations	10
Chapter 1: Introduction	11
Structure	18
Notes on sources	25
Chapter 2: Historiography	30
Historiography of the Royal Navy, c.1870–1914	31
Empire and the Sea	41
Global history	56
Conclusions	64
Chapter 3: The Rise of Coal Consciousness: Imperial Philosophies, Knowledge, and Bureaucracy	66
Development of Pro-Imperial Politics and Coal Consciousness	72
The Colonial Defence Committee	79
The Establishment of the Carnarvon Commission	83
The Recommendations of the Commission	87
The Last Hurrah of Gladstonian Liberalism	109
The Resurgence of the Coal and Imperial Defence Question	116
Legacy of a Coaling Consensus	136

Chapter 4: The Development of a Coaling Infrastructure	141
Sourcing Coal for the Navy at Home	144
Sourcing Coal for the Navy Abroad	156
Contracts	169
At the Station	182
Stresses and Failures in Coaling Infrastructure	193
Conclusions	204
Chapter 5: Coaling Labour	206
Systems of Coaling	208
Naval Labour	221
Non-naval labour	229
Dangers of Coaling	245
Conclusions	247
Chapter 6: Sojourning at the Coaling Station	249
The Sailors' Experience of the Coaling Station	252
Interactions with Non-Western Local Populations	255
Interactions with other 'Westerners'	263
Prostitutes and Alcohol	287
Conclusions	296
Chapter 7: Conclusions	299
Politics and Geostrategy	300
Infrastructure and Supply	303
Labour and Coaling Methods	305
Local Encounters	307

Wider Conclusions	310
Further directions	312
Bibliography	314

List of Figures and Tables

Figure 1.1: ‘The Fighting Temeraire Tugged to Her Last Berth to Be Broken Up’, by J.M.W. Turner, 1839.	11
Figure 1.2: British coaling stations used by the Royal Navy, 1870–1914.	15
Figure 1.3: Map showing British coaling stations in relation to those of foreign powers, 1870–1914.	20
Figure 3.1: ‘Track Chart of the World Showing Naval Stations, 1879’.	96
Figure 3.2: Map showing European possessions and distances between stations in the pacific, produced for the Carnarvon Commission, 1879–1882.	96
Figure 3.3: Map showing commission recommendations for Port Louis, Mauritius, produced for the Carnarvon Commission, 1879–1882.	97
Figure 3.4: ‘Chart of the World Shewing Approximately the Magnitude and Distribution of the Direct Trade of the United Kingdom with British Possessions and Foreign Countries out of Europe’. Produced for the Carnarvon Commission, 1879–1882.	100
Figure 4.1: Reports from testing on coals for the navy, 1899.	150
Figure 4.2: Contract for patent fuel for St Paul de Loana (Angola), 1885.	154
Figure 4.3: Table showing native coals found local to British naval stations, and which coals were actually used by the Royal Navy in the years 1882–1883.	159
Figure 4.4: Total coal exported to British naval stations, 1891–1904.	166
Figure 4.5: Actual consumption by H.M. ships, 1891–1904.	167
Figure 4.6: Tons of coal exported from selected British ports 1873–1895.	169
Figure 4.7: Coal tendering form, 1906.	173
Figure 4.8: Map showing coal markets in 1903.	179
Figure 4.9: Advert for tenders for coaling contracts for the Australasian stations, 1887.	181
Figure 4.10: Form returned by stations informing of the coaling situation, 1882.	188
Figure 4.11: Drawing of Yokohama coaling station included with forms sent to the Admiralty, 1882.	190
Figure 4.12: Form D-609 annual demand for coals, 1884.	191

Figure 4.13: Chart showing additions to or reductions in stocks of coal at naval stations, 1891–1904.	193
Figure 4.14: Front page of the <i>London Illustrated News</i> featuring the Samoan tragedy, 1889.	200
Figure 4.15: The route taken by the Russian Baltic Fleet in 1905.	207
Figure 5.1: Simon's Town coaling station c.1900.	209
Figure 5.2: Coaling H.M.S. <i>Charybdis</i> at from a jetty at H.M. Dockyard, Halifax c.1901–1902.	210
Figure 5.3: Coaling the H.M.C.S. <i>Niobe</i> from a lighter or barge alongside c.1910–1914.	212
Figure 5.4: A steam coaling barge fitted with four Temperley Transporters c.1900.	214
Figure 5.5: Officers and ratings prepare coal sacks to be hoisted aboard, unknown date.	215
Figure 5.6: Coaling H.M.S. <i>Natal</i> c.1915.	216
Figure 5.7: Scrubbing the decks of H.M.S. <i>Goliath</i> after coaling, c.1900–1915.	219
Figure 5.8: 'New Method of Coaling Warships at Sea', 1900.	221
Figure 5.9: The Marine band of H.M.S. Prince George playing during coaling c.1900.	225
Figure 5.10: Portrait of John 'Dinkum' Minogue, the 'ship's clown' of H.M.A.S. <i>Melbourne</i> , wearing fancy dress during coaling, 1915.	227
Figure 5.11: The record breaking crew of H.M.S. <i>Caesar</i> , who coaled at over 200 tons an hour from a collier, c.1900–1903.	229
Figure 5.12: Coaling alongside the new mole at Gibraltar, 1898.	233
Figure 5.13: Local heavers coaling the <i>Balantia</i> in St Lucia in 1911.	240
Figure 5.14: 'Recruited local labour spares H.M.A.S. <i>Melbourne</i> 's men the chore of coaling at Martinique, c.1915'.	241
Figure 5.15: Large coaling basket used in Bermuda.	242
Figure 5.16: 'Female Labour and the Fleet', 1899.	244
Figure 6.1: Local people coming aboard a warship, c.1900.	256
Figure 6.2: A sailor's photo of fruit for sale at a market in Kingston, Jamaica c.1900.	258
Figure 6.3: Royal Navy rugby game in Halifax, c.1900.	266

Figure 6.4: British naval officers playing golf in Crete, 1899.	267
Figure 6.5: Happy Valley, 1895.	269
Figure 6.6: Sports results recorded in ship' logs, c.1905–1907.	270
Figure 6.7: The Sailor's Home in Simon's Town, c.1900.	271
Figure 6.8: Visitors aboard H.M.S. New Zealand in Wellington, 1913.	273
Figure 6.9: The theatre of the Royal Navy Canteen, Malta, 1899.	274
Figure 6.10: An advert for a theatrical performance by British sailors on the China Station, c.1900.	275
Figure 6.11: Using local transport on the China Station c.1900.	282
Figure 6.12: An elephant photographed in Ceylon, c.1900.	284
Figure 6.13: A Venezuelan deer adopted by several British sailors, c.1900.	287
Figure 6.14: Primary syphilis infection rate (per 1000) on British naval stations, 1868–1913.	291

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Declaration

This thesis is submitted to the University of Warwick in support of my application for the degree of Doctor of Philosophy. It has been composed by myself and has not been submitted in any previous application for any degree

A small part of this thesis has been published as:

Steven Gray, 'Carnarvon, Coal Consciousness, and the End of Liberal Imperial Indifference?' *Trafalgar Chronicle*, 23 (2013), 213-228.

Signed:

Date:

Length of thesis: 79,252

Abstract

This thesis examines how the expansion of a steam-powered Royal Navy from the second half of the nineteenth century had wider ramifications across the British Empire. In particular, it considers how steam propulsion made vessels utterly dependent on a particular resource – coal – and its distribution around the world. In doing so, it shows that the ‘coal question’, almost totally ignored in previous histories, was central to questions of imperial and trade defence, required the creation of infrastructures that spanned the globe, and connected British sailors with a plethora of different imperial, maritime, and foreign peoples.

Although a limited number of studies have highlighted the importance of coal to imperial defence, this thesis considers the wider context of the period 1870–1914 in order to understand the significant place of coal in these discussions. In doing so, it shows coal’s place within wider changes to political ideologies, imperial defence schemes, popular imperialism and navalism, knowledge collection, and the growth of the state apparatus.

A robust coaling infrastructure was required to ensure quality naval coal was available globally on a huge geographical scale. This involved a large number of bodies, but this has never been examined by scholars for this period. Although naval coaling relied heavily on the coal export industry, the Admiralty had a key role in ensuring that the infrastructure, particularly after 1880, could cope with increases in ship size and number and competition from its rivals. The thesis also shows how these processes worked on the ground, from testing and purchasing coal to the methods and labour used to load in on warships.

The thesis also shows that the necessity of coaling in foreign stations fostered new interactions between naval personnel and the wider world. Although naval visits to these places are prime examples of British encounters beyond its own shores at the zenith of empire, these are largely absent from existing studies. Thus, it explores how the interactions with local populations, other maritime visitors, and the stations themselves shaped the experience of sailors abroad, and created a maritime community spanning large oceanic spaces.

Abbreviations

TNA – The National Archives, Kew.

NMM – The National Maritime Museum, Greenwich.

Chapter 1: Introduction



Figure 1.1 The Fighting Temeraire Tugged to Her Last Berth to Be Broken Up, by J.M.W. Turner, 1839.

One of the most celebrated paintings in British art is *The Fighting Temeraire Tugged to Her Last Berth to Be Broken Up*, by J.M.W. Turner, painted in 1839. In it, the artist depicts the ship, which had performed a notable role in the British victory at the Battle of Trafalgar in 1805, as it is taken to be dismantled, hauled by a steam-powered paddle-wheel tug. At the time of its destruction, the *Temeraire* was one of the last surviving ships that had been present in Nelson's great victory, and the painting depicts the sense of loss of such a majestic vessel. The magnificence of the sail-ship provides a contrast to the small dirty tugboat, which is taking it to its grave as the sun sets. Although clearly a lament for such an undignified end to a ship that had served Britain so admirably, it also shows a wider recognition of the end of the era of the wooden-hulled, sail-powered navy of Nelson. The dirty prosaic steamboat is quite literally shepherding the *Fighting Temeraire* out of use, but also metaphorically showing the gradual demise of the romantic age of sail, hastened by

the onset of the steamship era.¹ Like William Blake's 'dark satanic mills', not only were these new ships more dirty and less aesthetically pleasing than their predecessors, they were no longer solely driven by the forces of nature – wind and tides – but by the filthy fuel of industry, coal.

The demise of the wooden warship of the eighteenth and early nineteenth century was a result of their extreme susceptibility to exploding shells and inability to match the advantages of iron-clad steamships. In particular, steam propulsion allowed ships' routes to be more direct, and their speed to be increased. Furthermore, it enabled the use of iron and steel in hull design, and for the mastless decks to hold better positioned guns, making warships far more formidable in battle. The transfer from a sail to a steam navy was gradual, with hybrid ships powered both by sail and steam used while early steam engines lacked sufficient power and efficiency. Thus, even though the Battle of Navarino in 1827 was the last to be fought by the British Navy entirely with sailing ships, it was the end of the Crimean war in 1856 that marked a watershed in the use of steamships as the dominant warships in the Royal Navy.² The use of steam technology in naval ships revolutionised the Royal Navy, and by 1864 the Navy had been become 'unrecognisable' from that of a decade before.³ The importance of these developments cannot be underestimated. Robert Kubicek has argued that in terms of state and private sector empowerment, 'none were more significant than the steamship'; it profoundly altered the strategic balance between land and sea, which enhanced Britain's ability, as the foremost maritime power, to become a world superpower.⁴

¹ Turner, Joseph Mallord William, *The Fighting Temeraire*, <http://www.nationalgallery.org.uk/paintings/joseph-mallord-william-turner-the-fighting-temeraire>.

² Robert Wilson, 'Fuelling the Steam Navy: Naval Coal Supplies from Comet to the Carnarvon Commission' (MA Dissertation, Exeter University, 2010), 14.

³ Roger Willock, *Bulwark of Empire: Bermuda's Fortified Naval Base, 1860-1920*, 2nd ed. (Bermuda: Bermuda Maritime Museum Press, 1988), 7; Andrew Lambert, *Battleships in Transition: The Creation of the Steam Battlefleet 1815-1860* (London: Conway Maritime Press, 1984), 53-55.

⁴ Robert Kubicek, 'British Expansion, Empire, and Technological Change', in *The Oxford History of the British Empire. Vol. 2, the Nineteenth Century*, A.N. Porter (ed.), (Oxford: Oxford University Press, 1999), 249.

Although it offered clear advantages to Britain, the emergence of a steam-powered navy in the second half of the nineteenth century also came with its own problems. Most notable of these was that steam engines were fuel hungry, which meant that coal, and in particular high-quality steam-coal, was required in order for a navy to perform any of its duties. Thus the navy had a constant need for coal and a supporting infrastructure, such as coaling stations, across the world.

The value of coal to Britain and its success was recognised in 1865, in a hugely influential investigation into the fuel by W.S. Jevons. In it, he stated that ‘coal in truth stands not beside but entirely above all other commodities. It is the material energy of the country — the universal aid — the factor in everything we do’.⁵ Nowhere was this high value placed on coal truer than for the Royal Navy as it shifted from sail to steampower. So central was this fuel to the British navy, state, and empire that a contemporary term used for lumps of steam-coal was ‘black diamonds’.⁶ Unlike diamonds however, its value was not monetary – the cost of this coal was far below any precious stone – indeed, it was usually used as return cargo as its price was so low. Without it, though, the Royal Navy would be unable to fulfil its global role as the primary defence of British commerce and possessions, and thus, to Britain, its worth was immeasurable. This importance also led to it acquiring another nickname: King Coal. An article of 1898 declared that ‘coal is the source of [Britain’s] commercial prosperity and the secret of our naval supremacy ... coal is the first requisite of empire’.⁷ Thus, it was reasoned, ‘the black diamond really sways the destinies of Empires’.⁸ Indeed, it was pointed out by contemporaries that ‘a country may have the

⁵ W.S. Jevons, *The Coal Question: An Enquiry Concerning the Progress of the Nation, and the Probable Exhaustion of Our Coal-Mines* (London: Macmillan, 1865), viii.

⁶ ‘Masker’, ‘The China Station in Other Days’, *The Naval Review*, 25, no. 3 (1937), 522-533; Christopher McKee, *Sober Men and True: Sailor Lives in the Royal Navy, 1900-1945* (Cambridge, MA: Harvard University Press, 2002), 119-122; ‘King Coal’, *Western Mail*, 9 November 1898.

⁷ Archibald S. Hurd, ‘Coal, Trade, and the Empire’, *The Nineteenth Century*, November 1898.

⁸ ‘King Coal’, *Western Mail*, 9 November 1898.

most powerful navy in the world, but if it be without coal it will be in the position of a man with a pipe and matches and no tobacco'.⁹

A need for a constant supply of coal at these stations meant that it became the key global strategic resource in the last quarter of the nineteenth century; Britain's ability to control its naval supply was crucial to the security of imperial possessions and long-distance commerce. This requirement for coal supply on a global scale necessitated the establishment of a chain of coaling stations to service the Royal Navy's needs. These sites varied enormously, ranging from existing naval stations, the environs of commercial ports, and strategic spaces often no more than tiny littorals or islands. Although largely located within the formal British Empire, they also included sites in the informal empire and territory possessed by its allies. While there were areas which possessed concentrations of stations, the chain of British naval coaling stations stretched across the globe (see Figure 1.2).

⁹ Hurd, 'Coal, Trade, and the Empire'.

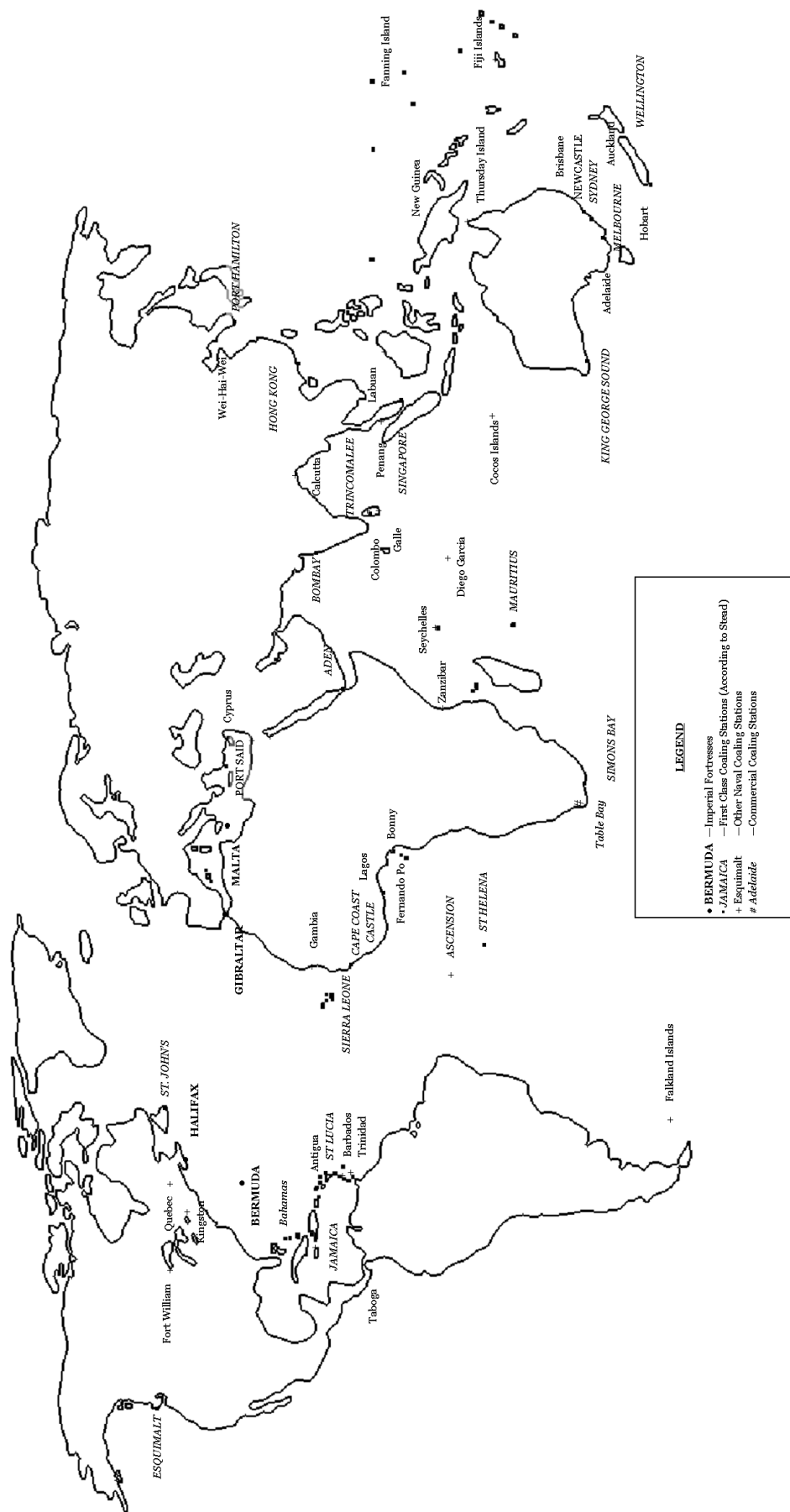


Figure 1.2: British coaling stations used by the Royal Navy, 1870-1914.

Coal was essential for the three elements of British power – its commerce, its navy, and its empire. This makes it an ideal lens through which to view wider aspects of Britain’s global history in the late nineteenth century, the connections between them and the importance to them of coaling sites, networks, and labouring bodies. This thesis therefore uses coal and coaling stations as a vehicle with which to explore these elements in four aspects of British imperial history: the defence of British possessions and interests, the role and management of global networks and infrastructure, the labour and mechanisms of coaling, and the contact zones and communities created in far-flung parts of the globe.¹⁰

With coal as its central focus, this thesis seeks to illustrate the interconnectedness of the British imperial world, linking subjects which have often been studied entirely separately. Primarily, it seeks to re-establish the importance of coal to the maintenance of British naval, imperial and commercial global pre-eminence, a fact that was widely recognised by contemporaries, at least by the last two decades of the nineteenth century. The importance attributed to coal during this period, however, had multiple effects, both in Britain and abroad. Indeed, the emergence of a steam navy had effects on issues as diverse as imperial defence, state bureaucracy, commercial infrastructure, trade networks, labour migration, imperial contact zones, and the strengthening of imperial bonds. Although contemporary concerns about coal focused primarily on the highest level of state and government, the reliance on coal affected large swathes of people and places – British, imperial, and foreign. Those affected ranged from politicians, Naval Lords, and shipping magnates, to ordinary sailors, residents in maritime spaces, and local populations.

The story of the coaling station is as much an international one as it is British. Steamships’ reliance on coal had consequences for all modern navies, and as none of Britain’s rivals possessed as extensive a global chain of coaling stations, even its nearest

¹⁰ Indeed, many elements of the ‘New Imperialism’ – great power competition, faith in progress through technology, and global interconnections – can be grasped through an analysis of coaling. See Valeska Huber, *Channelling Mobilities* (Cambridge: Cambridge University Press, 2013), 15.

rival for much of the period – France – was often forced to rely on British stations.¹¹ This not only gave the Royal Navy a strategic advantage, but also meant that an international naval community emerged around and across British coaling stations as foreign crews refuelled at them. As a result, this study of coaling stations reveals both the interconnections and tensions between Britain and its rivals, in both geopolitical and personal contexts.

Such a study is unavoidably global, uncovering the often obscured networks, infrastructure, and agents that facilitated the maintenance of the British imperial machine. Analysis of these hidden facets reveals not only the workings of the navy and empire in the late nineteenth century, but also points to the wider interactions outside of the state and imperial spheres. Indeed, this thesis shows the crucial importance of spaces outside of what is often considered the formal empire, including those in-between places, situated in foreign lands and the informal empire, and especially the vast swathes of water containing the lifeblood of Britain and its empire: its trade routes. Furthermore, it recognises the actors outside of the state which had a huge impact on Britain's ability to protect its naval dominance – in particular its reliance on private coaling infrastructure, labour pools, and networks.

The history of naval coaling is, therefore, one that extends far beyond local histories of mines, ports, islands, and littorals. Coal has been largely ignored in imperial histories of the late nineteenth century. Indeed, the volume of the *Oxford History of the British Empire* covering the nineteenth century has more references to coconuts and coffee than to coal, which only has three mentions. Yet, naval coaling infrastructure was, in fact, integral to Britain, empire, and the world in the nineteenth century.¹²

¹¹ For an excellent account of this reliance in Asia, see James R. Fichter, 'British Infrastructure and French Empire: Anglo-French Steam Interdependency in Asian Waters, c.1852–1870', *Britain and the World*, 5, no. 2 (2012), 183-203.

¹² A.N. Porter (ed.), *The Oxford History of the British Empire. Vol. 3, the Nineteenth Century* (Oxford: Oxford University Press, 1999).

Structure of the Thesis

Following a chapter that reviews key work and ideas in the fields of naval, imperial and global history, the rest of the thesis is divided into four substantive chapters. Each explores a different aspect of imperial coaling, showing the depth and breadth of the wider implications of the change from wind to steam power. Although the chapters' themes are diverse, all explore the consequences of a reliance on coal on a global scale. In doing so, this thesis interweaves issues of naval, imperial, commercial, infrastructural, and cultural history.

The first substantive chapter, 'The Rise of Coal Consciousness: Imperial Philosophies, Knowledge and Bureaucracy', analyses the growing appreciation of the importance of coal to the navy. Britain's position as the undisputed oceanic power faced increasing competition as the period 1870–1914 progressed, with its relative commercial and naval advantage diminished by the rise of other powers. Furthermore, the establishment of overseas coaling stations by rival powers allowed them to further their sphere of naval influence and their ability to attack British trade (see Figure 1.3). This changing situation acted as a catalyst for the realisation of the importance of coal to the British fleet, and precipitated security concerns about the naval coal supply – what is termed a 'coal consciousness'. This anxiety, espoused by a few marginal navalists in the 1870s, had become a general 'coaling consensus' by the 1890s.

The rise of coal consciousness needs to be understood within the wider context of British politics, navalism, and imperial defence. It had a profound influence on imperial and naval defence policy, and especially in changing attitudes towards the importance of coaling station defence for the continued prosperity and security of British interests abroad. A major factor for this shift was the changing global situation. In particular, the rise of other industrial and naval powers, especially towards the turn of the twentieth century,

created a greater awareness of issues concerning the governance, security, and quality of coal supply worldwide. An increased coal consciousness was not only influenced by geopolitics, but in turn had effects on British defence strategy. A reliance on coal made British coaling stations a particularly attractive target to enemy cruiser attacks, which could potentially cause fuelling disruption or even immobilise ships in the wider empire. However, if the coaling infrastructure was properly organised and defended, then Britain could profoundly affect the ability of rival powers to challenge it in the wider world, both by its strength and mobility, and by its ability to deny fuel to others.

The emergence of a coaling consensus was largely a result of the work of the Carnarvon Commission, which sat at the end of the 1870s. Its conclusions, which recommended an integrated system of imperial coaling station defence, formed the basis of the strategy implemented from the mid-1880s onwards. As well as being crucial to the instigation of a wider coal consciousness, it was also key to the emergence of other imperial defence policies towards the end of the century based on belief in the motto *si vis pacem, para bellum* ('if you want peace, prepare for war'). These included the gathering of data, the establishment of governmental bodies, and the funding for ambitious defence schemes. As a result, this coaling consensus also helped to precipitate change within the state, as the need to gather and process vast amounts of data continually required specialised and increasingly permanent state bodies. These changes were not isolated, however, and can be seen as part of wider changes in knowledge collection and the expansion of the state apparatus.

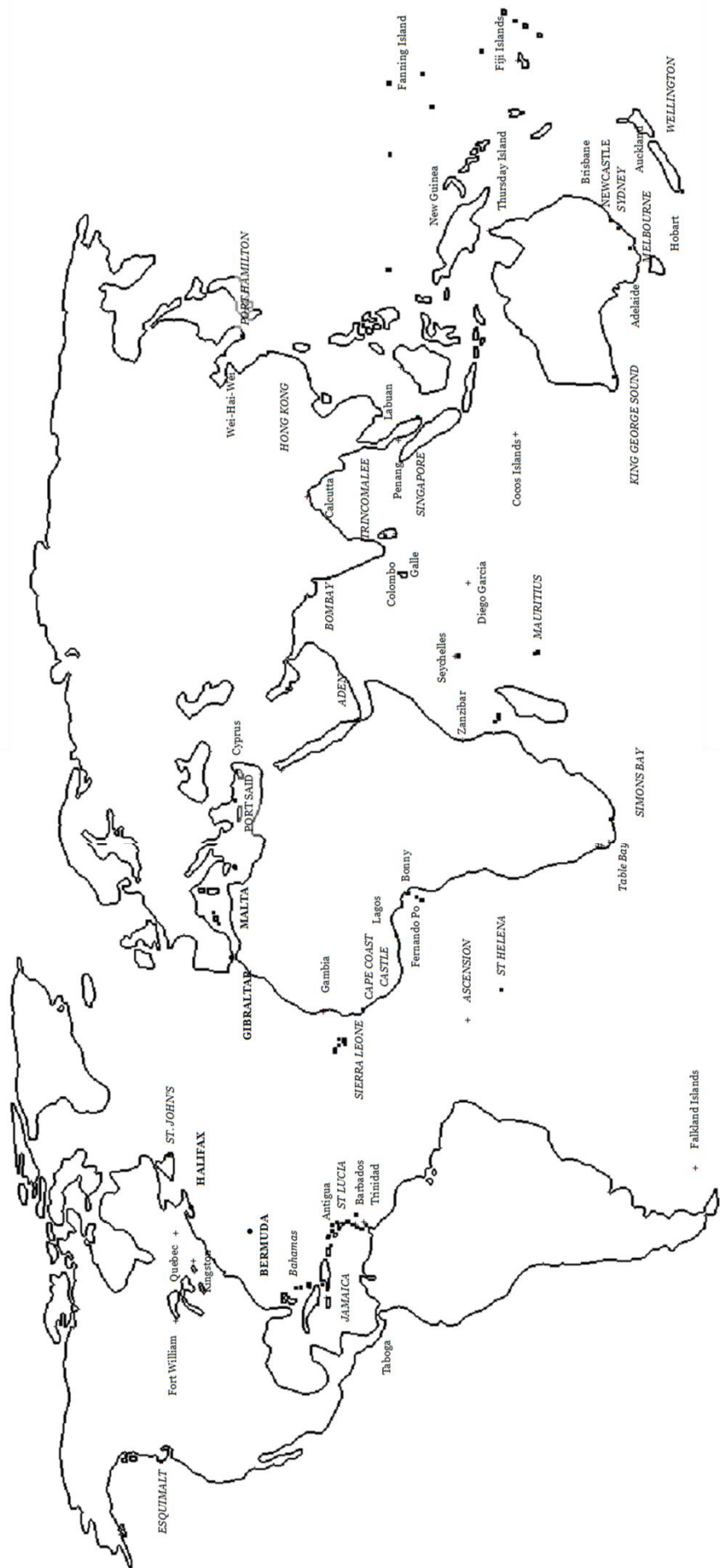


Figure 1.3 Map showing British coaling stations in relation to those of foreign powers, 1870–1914. Foreign stations are shown in grey.

The chapter concludes by considering the effect of this coaling consensus, and attempts to assess its relative success in terms of professionalisation, imperial defence, mobilisation, and cost. Certainly measures implemented for the defence of coaling stations acted as successful deterrents during the period 1870–1914, but the emergence of Germany as the primary rival at the turn of the twentieth century shifted the focus of naval power away from the empire to the North Sea, somewhat diminishing the importance of imperial coaling stations by 1914. Despite this, it is important to recognise that coal consciousness had a lasting effect on changes wrought by the shifting geopolitical balance. Indeed, it was key in the instigation of permanent bodies for imperial defence and for naval intelligence.

Establishing – and protecting – overseas stations was only a small part of the ramifications caused by a reliance on coal, however. Suitable coal was not found at or near the majority of stations, and thus Britain faced complex logistical issues in ensuring enough coal, of the right quality, reached each station in use. It is these issues that the next chapter, ‘The Development of a Coaling Infrastructure’, considers. The journey from pit to port was far from straightforward, and required a number of actors, processes, and networks. The first of these processes was the selection of coal. As the navy required fuel with specific characteristics, it invested significant time and resources into sourcing and testing different coals. This process was constant, as the Admiralty sought to maintain high performance, while accounting for cost and increased consumption. With the advent of coal consciousness came more consideration of the primacy of quality over cost and distance, and thus processes became more stringent throughout the period. As a result, many sources of coal used at the beginning of the period were no longer deemed to be of acceptable quality after 1880. High-quality coal from South Wales and New Zealand consequently dominated naval supplies, which then had to be sent huge distances globally. Once a coal was deemed suitable through extensive trials, the Admiralty would need to

arrange its purchase, loading, and shipping to the site of export. The dominance of Welsh steam-coal globally meant that an export industry already existed in Britain and thus these processes, like victualling, were arranged through private companies. Furthermore, the navy was able to utilise the commercial global coaling networks in order to ship quality coal to all its overseas stations.

The rise of coal consciousness did not only bring to the fore issues of coal quality. As the global strategic situation changed, new strains and stresses emerged on British naval coaling infrastructure. As the Royal Navy found itself more credibly challenged, the Admiralty responded by expanding the fleet with a series of ever-larger ships. To allow the coaling infrastructure to remain robust, methods of maintaining it had to adapt, necessitating the instigation of measures to improve both the management of supply and the quality of fuel available. Strategic concerns towards the turn of the century also forced the government to confront issues with mobilising the fleet for war more seriously. This was, of course, not limited to fuel, but the ability to provide enough fuel worldwide for the fleet should a war occur was a major concern for the Admiralty. This evolution of coaling infrastructure and management was crucial to the remarkable robustness shown by British naval coaling being maintained throughout the period. As a result, instances where British infrastructure faltered were few, and relatively minor. In comparison, its rivals experienced far more serious problems, as a result of their limited coaling infrastructure and reliance on Britain. Thus, despite its huge complexity and global scale, Britain was able to sustain an advantage over all rivals worldwide. Not only was it able to supply its fleet with quality fuel even in the far-flung spaces of empire, but it was also effectively able to deny the same ability to its rivals, seriously hampering their capacity to conduct naval operations worldwide.

Coaling stations were crucial nodes of this huge infrastructure, and the third substantive chapter, 'Coaling Labour', looks to analyse how they functioned as working

environments. Even by 1914, coaling was still a process performed largely by human labour, and thus the chapter explores the use of ships' crews and local heavers for this work. The methods employed to load coal were determined by the station in question, the availability of labour, and the number and size of ships in port. The situation at each station did not remain static, however, and as ship numbers rose, and their size increased, they were less able to use facilities within the confines of many stations. Thus, after the shipbuilding programmes of the 1880s onwards, ships were more regularly coaled by their crews from a collier in harbour at many stations. Despite this general trend, at stations where labour was particularly plentiful and cheap, and the facilities allowed, local heavers were still primarily used. Regardless of the labour or method used, the process of coaling was an enormous physical effort, and was hugely dangerous. Although generally being the most hated part of being on a warship, coping mechanisms and incentives, which often centred on competition for record coaling rates, helped to alleviate the pain and monotony. The rivalry that emerged over speedy coaling became especially important as the period went on, as it was recognised that these were crucial to the swift mobilisation of ships against potential enemies.

Recollections of coaling not only show the minutiae of the process of coaling, but also give an insight into how sailors thought about the labour practices of naval crews and local heavers. Exacerbated by the pressured environment of the ship during coaling, the sailors' ingrained ideas of racial hierarchies and work ethics often came to the fore. Belief in the superiority of their own labour and of the importance of naval-style discipline meant that local heavers were judged against the yardstick of the sailor. Local labour forces were assessed purely by their efficiency while coaling, and characteristics of their performance were ascribed to perceived racial difference. As a result, even where workers were praised, heavers were reduced to no more than their role in the process, not individual humans, but labour purely for the use of the navy.

Although coaling was the primary reason for ships to visit these stations, leave would regularly be given to crews after it was carried out. The final chapter, 'Sojourning at the Station', explores these periods of leisure, and analyses how British seamen experienced these stations during their stay there. As sailors were afforded lengthy spells to explore freely the environs of stations, these stays were defined their interactions with the characters of stations, which included their landscape, wares, animals, and buildings. Perhaps most distinct was the array of different peoples these stations contained. The complex requirements for the supply of coal to stations meant that at any time sailors, garrisoned soldiers, colliers, coal heavers, local residents, foreign naval men, and those providing services for naval ships could be present. Coaling stations were thus unique imperial, maritime, and international contact zones, distinct spaces which existed on the edges of empire with highly multi-cultural and multi-ethnic make ups. Where British sailors interacted with fellow westerners, fraternal connections were often established. These relationships were frequently cemented through participating in activities at the station, which included sports, balls, visiting theatres, and drinking. These connections were crucial to the global maritime identity which was pervasive at these stations. Although each station was unique, the chapter considers that the existence of this community linked coaling stations in global, naval, transoceanic, and transnational networks.

The thesis therefore looks to do much more than simply tell the story of the strategic importance of coal, but to understand how this importance had effects across a range of British, imperial, and global contexts. It aims to show that what at first seems like a straightforward problem involving an unspectacular commodity had huge political, strategic, and infrastructural impacts in the nineteenth century. These ramifications were felt far beyond politicians and Naval Lords, but throughout the empire, and across the globe. It necessitated new types of worker and labour practices, and constructed international and transoceanic human connections. These effects were not incidental, but

are crucial to understanding the impact of truly revolutionary change to the navy, and to the defence of empire and British interests in the wider world. As Turner demonstrates with *The Fighting Temeraire*, the pre-industrial age of sail was ending, and the beginning of the steam age had transformed the navy that Britain had known at the beginning of the century. While his painting creates a melancholic mood, perhaps evoking a sense of nostalgic loss, the idea of inevitable change, even at a cost, is clear. This thesis therefore looks to bring our attention to the dirty, paddle-wheel steam tug, to the new coal-driven ships that would replace the *Temeraire*, and to the systems and structures that they were reliant on.

Notes on Sources

Analysing something like coal and coaling across a series of different historical registers – politics, technology, local social and cultural histories – means drawing on a range of sources and source types. Where this thesis analyses the high politics of the coaling issue, Hansard debates, Parliamentary Papers, and committee minutes offer a relatively complete picture of events for this period. Furthermore, much of the correspondence between departments still exists. Correspondence with foreign stations, and details of the works carried out at them, is less complete however.

Analysing the details of contracts between the Admiralty and commercial companies, especially those for the buying and transporting of coal, is far more problematic. Admiralty records have been largely lost, so a complete picture of how the system functioned, especially before the 1880s, is impossible to discern. However, the existence of sources which contain key information such as Admiralty Lists, which show all the collieries that could supply the Admiralty, references to meetings for the tendering of contracts, and two surviving supply and contracts indexes allow an insight into the

mechanisms at work in the supply of coal to overseas stations. Further details can be gleaned from the records of the collieries and coaling agents themselves. Here, however, other problems emerge, as there is rarely any differentiation between commercial and naval coal, and stations are often grouped together, sometimes in huge geographical areas, making it difficult to analyse the specifics of both naval coal and individual stations. Even books which listed extensive export statistics for Welsh coal do not mention the Admiralty, bar references to the Admiralty List. It is possible, however, to draw some general observations about how the Admiralty arranged contracts with collieries, through the fragments of evidence that remain, and the arrangements that other customers used.

The analysis of coaling stations as places of both work and of leisure is largely reliant on the records, whether in text and recorded interviews, of those naval men who visited these spaces. Surviving examples largely comprise of the reminiscences of the crews of British naval vessels stationed in foreign waters. Accounts of local workers are almost entirely absent, and those of other Britons, such as those working on colliers, and the relatively few soldiers who served in coaling station garrisons, are rare if they exist at all. As a result of this limitation, the sources remaining are merely the impressions of those naval men who recorded their visits to these far away and often alien places across the empire. Thus it is very much a view of the shore from the sea, with little of the viewpoint of those on shore looking out.

The thesis is therefore largely based on sources shaped by the identity and culture of those British sailors writing. This is particularly problematic, as distinguishing an identity and culture for such a large and disparate entity as the Royal Navy necessarily results in vague assertions. Although they were often contemporaneously portrayed collectively as ‘domesticated servant[s] of a civilising empire’, differences in marital status, rank, age, and place of birth shaped sailors’ identities, but such factors are often absent or ambiguous in

these sources.¹³ It is clear, however, that sailors saw themselves as different from most Britons in the late nineteenth century, the result of being predominantly from port towns, and subsequently spending long periods abroad and at sea.¹⁴ Although Peter Mandler has suggested that 'British' was the de facto trump identity of sailors which overrode all others, at the foreign station they can be seen to exhibit imperial, western, or maritime identities. Thus, it is imperative to recognise how the 'foreignness' of these stations directly affected what would be written about a certain place.¹⁵ Of course, these records were also influenced by the purpose for which they were created. While it is important to treat sailors as transient beings, these were not travelogues intended for a market. Indeed, sailors were differentiated from tourists and explorers by the fact that they were travelling due to vocational necessity, constrained in their movements by naval duties. They were therefore not travelling with the express purpose of the pursuit of knowledge or cultural immersion. Most of their accounts were simply collections of memories from commissions, written for their families and those who served with them. It is also worth considering what rank of seaman wrote such logs. Although literacy rates had improved, most 'sailors who wrote books were not typical sailors', but were, in general, junior officers.¹⁶ Although this may have had some effect on what was included, many of their reminiscences described the activities of all ranks of seaman. That is not to say that such activities were communal, however, and it is clear that bluejackets and officers mixed with those of their own rank and status, whether British or foreign.

Where the logs are published, an important consideration is the motives of Lionel Yexley, the editor of many of these printed by the Westminster Press, which makes up the

¹³ Leggett, 'Navy, Nation and Identity in the Long Nineteenth Century', *Journal for Maritime Research*, 13, no. 2 (2011), 151-163.

¹⁴ Ibid.

¹⁵ Peter Mandler, 'What Is "National Identity"? Definitions and Applications in Modern British Historiography', *Modern Intellectual History*, 3, no. 2 (2006), 271-297.

¹⁶ I. Land, *War, Nationalism, and the British Sailor, 1750-1850* (Basingstoke: Palgrave Macmillan, 2009), 26. There are, however, exceptions, including logs written by stokers and Admirals. Some authors give no hints as to what rank they hold.

majority of surviving records. Yexley explicitly encouraged the authors to tell the story of their commissions in order to portray the sailor as a moral defender of empire.¹⁷ This editing process created a body of volumes which give details of largely positive experiences at stations, masking many of the less pleasant and 'immoral' aspects of serving abroad. This thesis therefore relies on other sources to fill the gaps left by these logs, particularly in analysing drink, vice, and venereal disease.

Although they may have not been written for public consumption, the publishing of many of these logs alongside a voracious public appetite for the Royal Navy meant that they shaped the public perception of naval life abroad. Indeed, they appear to have been very popular, with over forty being published by the Westminster Press, and many being published by other presses in addition. Generally priced at four shillings, these would have been easily affordable to contemporaneous members of the middle class and above, and available to others through public and circulating libraries. Thus, like travel books, they gave domestic Britons 'a sense of ownership, entitlement and familiarity with respect to the distant parts of the world that were being explored, invaded, invested in, and colonised ... They created a sense of curiosity, excitement, adventure and even moral fervour about European expansionism'.¹⁸ Moreover, not only did these logs allow those at home to feel part of the imperial project, they also cemented the link between the Royal Navy and the empire.

As well as recording station life in logs, some seamen used their naval training to produce watercolour landscapes and charts. Later, seamen recorded similar landscapes of ports and their interiors and portraits of local peoples through the medium of photography. Often these served no official function and they were not produced for the Admiralty or the Hydrographic Office, but they were nevertheless an important addition to the imperial

¹⁷ Leggett, 'Navy, Nation and Identity in the Long Nineteenth Century', 7.

¹⁸ Mary Louise Pratt, *Imperial Eyes: Travel Writing and Transculturation* (London: Routledge, 1992), 3.

archive. Moreover, the consumption of these images in Britain in turn helped shape impressions of the navy abroad, both in the public imagination and in the folk memory of sailors. As with the descriptions found in text, these present highly selective moments, putting forward to readers a version of the coaling station as imagined by the sailor. In this way, they should not be seen as 'projections or snapshots' of the place, but as evidence of those experiences that sailors wished to remember.¹⁹

¹⁹ Early periods of naval sketching have been discussed in Felix Driver and L. Martins, 'John Septimus Roe and the Art of Navigation, c.1815-1830', *History Workshop Journal*, 54(2002), 144-161.

Chapter 2: Historiography

A history of British imperial naval coaling necessarily covers many diverse topics, from coal mines to Chinese ports, from imperial defence to Victorian and Edwardian ideas about race, and from government policy to international maritime communities. As a result of this, the historiography that this thesis is situated within and builds upon is wide-ranging. Although, as this thesis shows, there are key connections between each historiography, for convenience this historiographical discussion is divided into three, analysing works on the Royal Navy, the British Empire, and global history respectively. Such divisions are not discrete, but reflect the way such histories have largely been written.

The first section analyses the historiography of the Royal Navy in the period 1870–1914. It begins by analysing the pervasiveness of histories of technology and strategy, and how this has caused the historiography to be skewed. It then assesses how more recently historians have attempted to rectify this bias by considering the wider economic and human contexts of the navy in the nineteenth century. Finally, it shows that, although there has been limited work on naval infrastructure, the navy's connection with empire, and the sailor himself, gaps still exist in these areas, particularly for the nineteenth century period.

The second section looks at how the connection between the British Empire and the ocean in the nineteenth century has been explored. In doing so it shows the limited ways in which naval histories have been brought together with empire, and, indeed, how imperial histories have been slow to embrace an oceanic frame of reference, despite the rise of transnational history. It then shows how oceans have become a fertile area of study in their own right, but it is only really through commodity histories that these have been extended to show transnational and imperial networks that spanned the globe. Finally, it

shows the limits of these histories, with few of these commodity histories covering the nineteenth century, and often luxury goods have been studied instead of key bulk cargoes.

This 'material turn' has, however, emphasised how following a commodity can reveal the global, and often trans-oceanic, nature of networks in the nineteenth century, and it is the historiography of the global that the third section assesses. To assess the transnational of empire in the nineteenth century generally needs a huge geographic perspective, and thus it has reached its apogee with global history. Much of the global history that has been attempted by scholars can largely be described as histories of globalisation, however, which often risk teleology and narratives of the 'rest and the west'. Where scholars have used a global framework for assessing imperial networks and infrastructure, however, it has shown much more promise. Indeed, such histories have allowed a fuller understanding of the non-linear imperial connections, and have negated the idea of periphery and centre. Despite this important work, there are still clear gaps in the historiography – principally that historians have so far failed to follow the lead of infrastructural historians in considering the materiality of these networks and flows.

Historiography of the Royal Navy, c.1870–1914

The enormous changes wrought by the adoption of steam technology in the second half of the nineteenth century saw a technological revolution in the Royal Navy, and this has precipitated a historiography predominantly concerned with technology and strategy. The constant competition generated in both commercial and naval spheres continually pushed engineers to drive forward the pace of technological change, and a large number of works analyse the many important evolutionary advancements in this period.¹ Jon Tetsuro

¹ David Evans, *Building the Steam Navy: Dockyards, Technology and the Creation of the Victorian Battle Fleet 1830-1906* (London: Conway Maritime Press, 2004), 12. These included the screw propeller, compound and triple expansion engines, condensers, and iron hulls, see Andrew Lambert,

Sumida has suggested that these developments occurred in eight year cycles consisting of action, rival reaction, counter reaction, and change.² Similarly, Roger Willock has stated that this period witnessed a 'complete revolution in naval architecture, construction and marine engineering', which completely transformed the navy.³⁴⁵

The advent of fully iron, and later steel, hulls revolutionised both ship design and naval strategy.⁶ Moreover, the adoption of compound engines largely solved the earlier issues of poor power and limited range, as they offered an efficiency improvement of 100 per cent.⁷ The direct result of these changes was the first mastless ship in the Royal Navy in 1871, allowing much more efficient and effective placing of armaments, as well as saving weight. Consequently, it also spelled the end of the sailing ship in the Royal Navy – the last was launched in 1875.⁸ The subsequent adoption of triple then quadruple expansion engines, followed by steam turbines, which again improved efficiency and speed, have also been widely discussed.⁹ Iconic ships, such as the *Dreadnought*, and the role of 'great men' such as Jackie Fisher and Winston Churchill in the 'reinvention' of the Royal Navy in the first decade of the twentieth century have also received ample attention.¹⁰ Such histories argue

'Introduction', in Robert Gardiner and Andrew Lambert (eds), *Steam, Steel & Shellfire: The Steam Warship, 1815-1905* (London: Conway Maritime, 1992), 12.

² Jon Tetsuro Sumida, *In Defence of Naval Supremacy: Finance, Technology and British Naval Policy, 1889-1914* (London: Routledge, 1993), xiv.

³ Willock, *Bulwark of Empire*, 7.

⁴ Andrew Lambert, 'Iron Hulls and Armour Plate', in Gardiner and Lambert (eds), *Steam, Steel & Shellfire*, 58.

⁵ Willock, *Bulwark of Empire*, 8.

⁶ Daniel R. Headrick, *The Tools of Empire: Technology and European Imperialism in the Nineteenth Century* (Oxford: Oxford University Press, 1981), 142-143, 165.

⁷ Roger Parkinson, *The Late Victorian Navy: The Pre-Dreadnought Era and the Origins of the First World War* (Woodbridge: Boydell Press, 2008), 29; Wilson, 'Fuelling the Steam Navy', 23; Willock, *Bulwark of Empire*, 10.

⁸ Quentin Hughes, *Britain in the Mediterranean and the Defence of Her Naval Stations* (Liverpool: Penpaed, 1981), 136.

⁹ John F. Beeler, 'Steam Strategy and Schurman; Imperial Defence in the Post-Crimean Era, 1856-1905', in Greg Kennedy, Keith Neilson, and Donald M. Schurman (eds), *Far-Flung Lines: Essays on Imperial Defence in Honour of Donald Mackenzie Schurman* (London: Frank Cass, 1996), 43; Parkinson, *The Late Victorian Navy*, 210-212; Sumida, *In Defence of Naval Supremacy*, 8-9.

¹⁰ Christopher M. Bell, *Churchill and Sea Power* (Oxford: Oxford University Press, 2013); David W. Wragg, *Fisher: The Admiral Who Reinvented the Royal Navy* (Stroud: History Press, 2009); David K. Brown, *Warrior to Dreadnought: Warship Development, 1860-1905* (London: Chatham Press, 1997);

that the importance of these technological developments were crucial to Britain's ability to become a world superpower.¹¹ Steam warships allowed power projection on a whole new scale, and Britain was able to use its navy both as a deterrent against attacks on British interests and as a 'bargaining chip and lever' to benefit its commerce.¹² The success of this strategy is shown in Britain's ability to avoid major maritime warfare until 1914.¹³

Such rapid change in ship design and manufacture had inevitable strategic implications, and thus the historiography also reflects the strategic uncertainty created by the new steam navy. Such studies argue that the introduction of steam caused a 'paradigm shift in defence thinking'.¹⁴ The immediate impact of steam navies was a fear for the safety of Britain itself. At its peak in the 1860s, a fear of French invasion led to the ascendancy of the 'bricks and mortar school', advocating the land defence of British ports.¹⁵ The fact that the introduction of steam warships did not have an immediate effect in either naval or imperial strategic thought has caused considerable historiographical debate about what has become known as the 'dark ages' of the Royal Navy. This theory suggests the mid-nineteenth century was a period of poor administration, characterised by a reticence to introduce new technology, and an absence of a wider defence strategy.¹⁶ Revisionists have argued against this idea suggesting it is too simplistic, whiggish, and lacking contemporary

Arthur Jacob Marder, *From the Dreadnought to Scapa Flow Era, 1904-1919* (Oxford: Oxford University Press, 1978); Parkinson, *The Late Victorian Navy*.

¹¹ Kubicek, 'British Expansion, Empire, and Technological Change', 249.

¹² Andrew Lambert, 'Economic Power, Technological Advantage, and Imperial Strength: Britain as a Unique Global Power, 1860-1890', *International Journal of Naval History*, 5, no. 2 (2006). The use of the navy to obtain compliance can be seen in Peru in 1857, and Chile in 1863, see Keith Neilson and Elizabeth Jane Errington, 'Introduction', in Keith Neilson and Elizabeth Jane Errington (eds), *Navies and Global Defense: Theories and Strategy* (Westport, CT: Praeger, 1995), 2; Andrew Lambert, 'Under the Heel of Britannia: The Bombardment of Sweaborg, August 1855', in Peter Hore (ed.), *Seapower Ashore* (London: Chatham, 2000), 124.

¹³ Lambert, 'Economic Power, Technological Advantage, and Imperial Strength'.

¹⁴ Parkinson, *The Late Victorian Navy*, 239. The attitudes of the Admiralty board are discussed in C.I. Hamilton, *The Making of the Modern Admiralty: British Naval Policy-Making, 1805-1927* (Cambridge: Cambridge University Press, 2011).

¹⁵ Beeler, 'Steam Strategy and Schurman', in Kennedy, Neilson, and Schurman (eds), *Far-Flung Lines*, 28.

¹⁶ See, for instance N.A.M. Rodger, 'The Dark Ages of the Admiralty, 1869-1885. Part I, Business Methods, 1868-74', *The Mariner's Mirror*, 61 (1975), 331-344; N.A.M. Rodger, 'The Dark Ages of the Admiralty, 1869-1885. Part II, Change and Decay, 1868-74', *The Mariner's Mirror*, 62(1976), 33-46.

context. Certainly, a serious discussion of strategy was largely absent, especially before the end of the 1870s, but this had been the case since the 1820s, and strategy had remained fundamentally unchanged since that time.¹⁷ Furthermore, bar the French invasion scares of the early 1860s which led to large spending on home defences (the so-called ‘Palmerston’s follies’), rival weakness and wars on the continent left the Royal Navy largely unchallenged, and thus little strategic innovation, or substantial naval investment, was required.¹⁸ These works therefore suggest that the state of technology itself had some bearing on how quickly it was adopted. With her rivals weak, or engaged in continental war, Britain could afford to stand back and ‘wait and see’ while technology changed at an unprecedented pace.¹⁹ This policy was somewhat vindicated when, in 1870, the hurriedly designed H.M.S. *Captain* sank, with the loss of nearly 500 lives.²⁰ Such revisionist histories therefore highlight the importance of context when discussing the adoption of technology, questioning narratives of inevitable progress.

In the 1880s, however, a notable move towards the ‘blue-water school’ can be seen, with the advocating of the primacy of naval power in the defence of the empire. In existing literature, analysis of this change has tended to concentrate on the three key factors suggested by Roger Parkinson: a succession of imperial crises which indicated naval weakness and overstretch; strategic uncertainty; and the increasing reliability and certainty of naval technology.²¹ More recent studies have attempted to place these technological changes within the immensely complicated economic, geopolitical, technological and political context, however, which had an equally prominent role in the course of naval

¹⁷ Andrew Lambert, ‘The Royal Navy: 1856-1914: Deterrence and the Strategy of World Power’, in Neilson and Errington (eds), *Navies and Global Defense*, 81; John F. Beeler, *British Naval Policy in the Gladstone-Disraeli Era, 1866-1880* (Stanford, CA: Stanford University Press, 1997), 211-212.

¹⁸ Lambert, ‘The Royal Navy: 1856-1914’, in Neilson and Errington (eds), *Navies and Global Defense*, 73; Willock, *Bulwark of Empire*, 9; Jeremy Black, *The British Seaborne Empire* (New Haven, CT: Yale University Press, 2004), 216.

¹⁹ Beeler, *British Naval Policy in the Gladstone-Disraeli Era*, 2; Parkinson, *The Late Victorian Navy*, 8.

²⁰ Donald M. Schurman and John F. Beeler, *Imperial Defence, 1868-1887* (London: Frank Cass, 2000), 25.

²¹ Parkinson, *The Late Victorian Navy*, 239.

history. A particularly important driving force behind the evolution of the navy, and its wider role in imperial defence, was economic. As Britain's enormous power rested on its economy, which was in itself reliant on oceanic commerce, it was imperative that seaborne trade remained open and undisturbed. Thus, because of a need to control the sea for the purposes of trade, the navy became especially important. This was increasingly true as the century progressed, with Britain maintaining a large and stable share of the tenfold increase in trade between 1860 and 1910.²² Andrew Lambert asserts that as long as 'Europe was stable, balanced and prosperous, British interests were secure', at least until the last decades of the nineteenth century, and this goes some way to explain a British policy driven by economy at home (including the Mediterranean), and circumstance abroad.²³ Additionally, Britain's avoidance of war not only reflected the success of naval deterrence but a coherent strategy to evade damage to its commercial interests.²⁴ To this end, Basil Greenhill has stated that 'naval, political, industrial, financial and merchant shipping developments inextricably mingled and must not be treated in isolation from each other'.²⁵ Thus Lambert has suggested that the role of the Royal Navy was not to defend Britain's burgeoning empire, but to protect its seaborne trade and thus 'to stabilise the international capital market for the City'.²⁶ It is therefore imperative to note that the possessions and interests abroad that the Royal Navy sought to defend were not the red areas of imperial maps, but the sea lanes and trading ports crucial to British global trade.

The nature, or indeed the existence, of an overall steam navy strategy has been a subject of some debate, ranging from Donald Schurman's assertion of a 'steady policy of

²² Britain's economic power was sustained by secure markets, the empire, and the pre-eminence of the City of London. See Lambert, 'Economic Power, Technological Advantage, and Imperial Strength'.

²³ Ibid.; Peter Burroughs, 'Defence and Imperial Disunity', in A.N. Porter (ed.), *The Oxford History of the British Empire. Vol. 3, the Nineteenth Century* (Oxford: Oxford University Press, 1999), 332.

²⁴ Geoffrey Till, 'Sir Julian Corbett and the British Way in Naval Warfare: Problems of Effectiveness and Implementation', in Neilson and Errington (eds), *Navies and Global Defense*.

²⁵ Basil Greenhill and Ann Giffard, *Steam, Politics and Patronage: The Transformation of the Royal Navy 1815-54* (London: Conway Maritime, 1994), 8.

²⁶ Lambert, 'Economic Power, Technological Advantage, and Imperial Strength'.

careful preparation' to Geoffrey Till's idea of a strategy 'stumbled into' rather than consciously developed, although Peter Burroughs is probably most accurate in his suggestion of a fragmented strategy, balanced by individual circumstance.²⁷ What is clear, however, is that for the entire period the main British naval forces therefore remained in British, Mediterranean, or Chinese waters, where its trade faced the strongest threat, showing the importance of a wider economic context to naval history.²⁸

Despite these works, the period of *Pax Britannica* still remains far less studied than the navy in the eighteenth-century, or in the world wars and beyond, particularly in recent years.²⁹ Indeed, Crosbie Smith has argued that the age of steam is practically invisible from naval history, treated almost as if its development was an inevitable fact, with the dreadnought era studied only for nostalgia. What the historiography lacks, he contends, is a 'socio-cultural history of the ocean steamship', which assesses context, agency, technological change, communities, and networks.³⁰

Matthew Seligmann has pointed to a recent renaissance in studies of the Victorian and pre-war navy, but despite large changes in the writing of nineteenth century history more generally, the studies he points to show no diversification from traditional themes, concentrating on strategy and 'great men'.³¹ Indeed, little appears to have changed since Barry M. Gough suggested in his survey of the Royal Navy and empire published in 1999, that 'the general linkage of Navy to Empire continues to escape historians, perhaps because the task is such a daunting one'. Despite this, he suggested that exploring such

²⁷ Donald M. Schurman, 'Imperial Naval Defence: Then and Now', in Neilson and Errington (eds), *Navies and Global Defense*, 15; Till, 'Sir Julian Corbett and the British Way in Naval Warfare', in Neilson and Errington (eds), *Navies and Global Defense*, 26; Burroughs, 'Defence and Imperial Disunity', in Porter (ed.), *The Oxford History of the British Empire. Vol. 3, the Nineteenth Century*, 332.

²⁸ Lambert, 'Economic Power, Technological Advantage, and Imperial Strength'.

²⁹ N.A.M Rodger's forthcoming book will be a broad survey of the navy, but over a far longer period: N.A.M. Rodger, *The Price of Victory: A Naval History of Britain: 1815 - 2002* (London: Allen Lane, Forthcoming).

³⁰ C. Smith, I. Higginson, P. Wolstenholme, "'Imitations of God's Own Works': Making Trustworthy the Ocean Steamship', *History of Science*, 41(2003), 379-426.

³¹ Matthew S. Seligmann, 'The Renaissance of Pre-First World War Naval History', *Journal of Strategic Studies*, 36, no. 3 (2013), 454-479.

connections could be extremely beneficial, and although 'naval historians love to write about battles', by analysing the navy's imperial connections 'they [can] find unexplored subjects of equal excitement and value'. Pointing to the direction such studies might take, he suggests that 'treating naval history as a branch of defence history or even strategic studies goes only part of the way towards integrating the study of the navy and the empire. Far from being an old-fashioned field of enquiry, naval and imperial themes are rich in possibilities for studying the interface of societies, systems, and states'.³²

Lacking such a focus has left the historiography skewed. Indeed, 'narrative histories of navies [are generally] concerned with policy, politics and operations, with relatively little attention paid to economic, financial, or logistical context'.³³ Although, as described above, Lambert and Sumida have addressed the economic and financial context to some extent, little has been done in terms of infrastructure.³⁴ Yet this is key, particularly from 1870, with the demise of the sail navy. Trade could only be fully protected with a comprehensive command of shipping routes worldwide, and without extensive coaling and docking facilities even a fleet as large and powerful as Britain's was rendered impotent. Despite this clear need for coal and coaling infrastructure for steam warships to function, it has largely been neglected in the historiography. Assurance of the availability of coal for warships worldwide was clearly crucial to the Royal Navy's ability to mobilise, yet studies such as S.T. Grimes recent work *Strategy and War Planning in the British Navy, 1887-1918* do not even contain an entry for coal in the index.³⁵ Similarly, Daniel Headrick's *Power over People* contains an entire chapter on steamboat imperialism, yet there is no mention of coal. Instead it deals with the effects of the technological evolution of warships without ever

³² Barry M. Gough, 'The Royal Navy and Empire', in Robin W. Winks and Alaine M. Low (eds), *The Oxford History of the British Empire. Vol. 5, Historiography* (Oxford: Oxford University Press, 1999), 340.

³³ Jon Tetsuro Sumida, 'Reimagining the History of Twentieth-Century Navies' in Daniel Finamore (ed.), *Maritime History as World History* (Gainesville, FL: University Press of Florida, 2004), 167-182.

³⁴ Nor, indeed, in terms of social, cultural, or imperial contexts, which are discussed later.

³⁵ S.T. Grimes, *Strategy and War Planning in the British Navy: 1887-1918* (Woodbridge: Boydell & Brewer, 2012).

considering the enormity of the infrastructure required for these ships to function abroad.³⁶ Indeed, many of these histories assume that naval power is based merely on the number and types of ships, without considering the coal and associated infrastructure necessary to project their power across oceans.³⁷ There have been attempts to look at nineteenth-century naval infrastructure, and Lambert has gone as far as to suggest that ‘the dry-dock would be the pivot around which British Imperial strategy was transformed between 1860–1890’, but these are exceptions.³⁸ The only study that deals with the coaling issue in any detail is Robert Wilson’s analysis of the development of the early steam fleet, and its subsequent growing dependence on coal. In doing so, it assesses issues of supply – both at home and abroad, coal’s influence on naval and imperial strategy, and the practical considerations of coaling on fleet operations in the mid-nineteenth century.³⁹ No similar thorough examination of the coaling infrastructure beyond 1870 exists, however, bar Jonathan Coad’s brief summary of the development of coaling stations in his most recent work.⁴⁰

Whereas coal and coaling infrastructure have been largely omitted from histories of the steam navy, except in strategic and administrative terms, questions of supply have been addressed for the periods immediately preceding and following it. Extensive work has been done on supplying the sail navy. This includes Coad’s work on dockyards, as well as work on naval administration and infrastructure in the age of sail by N.A.M. Rodger and Daniel A. Baugh.⁴¹ Several studies also exist on the shift from coal to oil. This is perhaps

³⁶ Daniel R. Headrick, *Power over Peoples: Technology, Environments, and Western Imperialism, 1400 to the Present* (Princeton, NJ: Princeton University Press, 2010), 177–217.

³⁷ See, for instance Paul G. Halpern, *A Naval History of World War I* (London: UCL Press, 1994).

³⁸ Lambert, ‘Economic Power, Technological Advantage, and Imperial Strength’.

³⁹ Wilson, ‘Fuelling the Steam Navy’.

⁴⁰ J.G. Coad, *Support for the Fleet: Architecture and Engineering of the Royal Navy’s Bases 1700–1914* (Swindon: English Heritage 2013), 225–231.

⁴¹ See, for example R.J.B. Knight and Martin Howard Wilcox, *Sustaining the Fleet, 1793–1815: War, the British Navy and the Contractor State* (Woodbridge: Boydell Press, 2010); J.G. Coad, *The Royal Dockyards, 1690–1850: Architecture and Engineering Works of the Sailing Navy* (Aldershot: Scolar, 1989); Daniel Baugh, *British Naval Administration in the Age of Walpole* (Princeton, NJ: Princeton University Press, 1965); N.A.M. Rodger, *The Wooden World: An Anatomy of the Georgian Navy*

largely due to the two men involved in initiating the change, Fisher and Churchill, and that it encompasses the *Dreadnought*, and the years immediately prior to the First World War.⁴² Such histories do point to the gaps and flaws in the existing historiography of the steam navy, however. In particular, they draw attention to the key need to address the processes involved in locating and securing resources, the importance and maintenance of infrastructure, and the non-linear nature of the changes. By exploring these facets, scholars such as Nuno Madureira are able to highlight the need to be careful with innovation-centric views, instead locating such factors in a wider analysis of state, empire, global tensions, and infrastructure.⁴³

The need for fuel and safe harbours was a vital part of Britain's ability to remain the pre-eminent naval power, and consequently to its ability to protect crucial seaborne trade, and it therefore had a significant influence on strategy in the period 1870–1914. To ensure the availability of the considerable amounts of coal needed at these strategic points, an infrastructure had to exist to facilitate the movements and storage of coal.⁴⁴ Indeed, as Erik Dahl has suggested, 'providing the fleet with coal was the greatest logistical headache of the age'.⁴⁵ Despite this importance, little is currently known about how this infrastructure functioned, changed, was maintained, or was defended. This is clearly a void in the historiography which needs to be filled. A thorough examination of naval coaling is crucial to understanding key facets of how the navy functioned in the period after 1870, and how this fitted with government ideas about imperial and trade defence. Indeed,

(London: Fontana, 1986); J. MacDonald, *The British Navy's Victualling Board, 1793-1815: Management Competence and Incompetence* (Woodbridge: Boydell & Brewer, 2010).

⁴² See, for instance Nuno Luís Madureira, 'Oil in the Age of Steam', *Journal of Global History*, 5, no. 1 (2010), 75-94; Warwick Michael Brown, 'The Royal Navy's Fuel Supplies 1898–1939: The Transition from Coal to Oil' (PhD Thesis, King's College London (University of London), 2003); Erik J. Dahl, 'Naval Innovation: From Coal to Oil', *Joint Force Quarterly* (2001), 50-56; Martin Gibson, 'British Strategy and Oil, 1914-1923', (PhD Thesis, University of Glasgow 2012). Similarly, infrastructure has been investigated for the army, notably in the television series 'Bullets, Boots and Bandages: How to Really Win at War' (<http://www.bbc.co.uk/programmes/b01bpkjm>).

⁴³ Madureira, 'Oil in the Age of Steam'.

⁴⁴ Evans, *Building the Steam Navy*, 170.

⁴⁵ Dahl, 'Naval Innovation', 50-56.

without coal, the technology and strategy, so thoroughly researched, would have been for nought, with ships left immobile.

Analysis of coaling infrastructure also raises questions about the human history of navy and empire in the period 1870–1914. We know little about the human connections and networks – British, imperial, and international – that existed globally because of the needs of the navy. Moreover, barely anything has been written about the sailor’s experiences of coaling infrastructure, nor of the imperial stations they frequented.⁴⁶ Greg Denning’s pioneering work on the late eighteenth-century suggests a direction such a history might take. By analysing maritime history in the Pacific from the perspective of both the ship and the shore, he presents the beach as a cross cultural zone of influence.⁴⁷ Such an approach at coaling stations would reveal much about the shared histories of sailors, locals, and other populations present.

Although tending to focus on the institution of the Royal Navy and/or its sailors, the human history of the navy has come under focus more recently, however. There has been a noticeable interest in the navy from social and cultural historians, which has opened up new avenues for research about nationalism, identity, masculinity, cultural attitudes, and representation.⁴⁸ These studies diverge from the familiar concentration on strategy, technology, and finance, and instead point to a greater integration between naval and ‘new imperial’ historiographies. Indeed, they see the navy as a powerful cultural symbol and a ‘genuinely national institution that brought together key sources of identification such as monarchy, empire, geography and gender’.⁴⁹ In *Young Men and the Sea*, Daniel Vickers and

⁴⁶ McKee, *Sober Men and True* gives details of the lives of ordinary sailors in general, although offers little in the way of analysis.

⁴⁷ Greg Denning, *Mr Bligh’s Bad Language: Passion, Power, and Theatre on the Bounty* (Cambridge: Cambridge University Press, 1992).

⁴⁸ Leggett, ‘Navy, Nation and Identity in the Long Nineteenth Century’; Mary A. Conley, *From Jack Tar to Union Jack: Representing Naval Manhood in the British Empire, 1870-1918* (Manchester: Manchester University Press, 2009); D. Redford (ed.), *Maritime History and Identity: The Sea and Culture in the Modern World* (I.B. Tauris, 2014).

⁴⁹ J. Rüger, *The Great Naval Game: Britain and Germany in the Age of Empire* (Cambridge: Cambridge University Press, 2007), 1, 10.

Vince Walsh challenge the idea of sailors being defined by their sea activities. They argue that by focusing on the extraordinary, not the ordinary, histories have skewed the sailor in the popular imagination, which 'distorts the context within most seafaring actually unfolded'. In response to this, the study focuses on just one port – Salem – to explore fully the relationship between young men and the sea. By doing so, they emphasise the relationship between land and sea in maritime worlds in the age of sail by exploring the terrestrial lives of seafarers in addition to their time aboard.⁵⁰ Following this example, Isaac Land has called for historians to go beyond their 'obsession' with extraordinary voyages, and instead investigate the everyday occurrences in 'the grey area between the cultures of sea and shore'.⁵¹ These studies therefore have pointed to where social and cultural histories of the navy and the sailor may head, but much needs to be done, especially concerning the sailor beyond British shores.

Empire and the Sea

The debt that Europe's empires owed to their growing mastery of the world's oceans was both widely expounded by contemporaries, and has long been acknowledged by historians. The development of the study of human interaction with, and upon, the world's oceans, has been slow to emerge, however. More recently, it has been diverse and multidisciplinary, but it has often also been marked by a lack of cohesion between works of a similar approach and subject matter. Within the field of history, the subject is often separated, somewhat artificially, into the disciplines of naval history, concerned solely with the history of the navy, and maritime history, which largely concerns itself with the history of the merchant fleet. Furthermore, these are often both separated from histories of the

⁵⁰ Daniel Vickers and Vince Walsh, *Young Men and the Sea: Yankee Seafarers in the Age of Sail* (New Haven, CT: Yale University Press, 2005).

⁵¹ Land, *War, Nationalism, and the British Sailor*, 15.

imperial networks and cultural exchange. Such distinctions are imagined, however, as 'human interaction with the sea is a fundamental factor of world history, not a dissociated force of particular concern'.⁵²

The connection between navy and empire has not been widely explored by naval historians, bar histories of naval wars. This is perhaps starting to change, with a recent collection analysing *The Victorian Empire and Britain's Maritime World, 1837-1901*. Most works which look at the empire have tended to concentrate on naval strategy and the politics of the Admiralty, however.⁵³ For the late nineteenth century, works by Donald Schurman and John Beeler, as well as a chapter by Peter Burroughs, have framed these strategic changes in a wider context. By focusing on the navy and its role in imperial defence, they point to the fact that the issue of naval spending and investment in technology was a multifaceted one, affected by the incumbent government, quality of administration, and a lack of certainty in technology. Although Schurman and Beeler in particular point to an emerging 'body of doctrine' on the 'connection between Empire, trade, coal and defence', their focus is primarily on the shift from the idea of colonial (individual, local) defence towards imperial (collective, global) defence. Even so, the core elements of this shift were the defence of trade, sea lanes, naval bases, and coal depots, and, thus, even if they do not specifically focus on infrastructure, these works emphasise its importance to imperial defence.⁵⁴ Furthermore, they link these changes with wider events, assessing how incidents such as the Eastern Crisis (1875-1878) and other war scares precipitated institutional change, at both a departmental and an institutional level.⁵⁵

⁵² Daniel Finamore, '(Maritime) History: Salting the Discourse', in Finamore (ed.), *Maritime History as World History*, 1.

⁵³ M. Taylor, (ed.), *The Victorian Empire and Britain's Maritime World, 1837-1901: The Sea and Global History* (Palgrave Macmillan, 2013).

⁵⁴ Beeler, 'Steam Strategy and Schurman', in Kennedy, Neilson, and Schurman (eds), *Far-Flung Lines*; Schurman and Beeler, *Imperial Defence*, 27-54.

⁵⁵ Beeler, 'Steam Strategy and Schurman', in Kennedy, Neilson, and Schurman (eds), *Far-Flung Lines*, 35; Parkinson, *The Late Victorian Navy*, 41, suggests that this is the closest Britain came to war 1856-1914.

Similarly, David Killingray asserts in his assessment of the historiography of imperial defence the fact that 'the navy played a primary role in this system by protecting the waters around Britain and the expanding maritime routes vital to Britain's industrial economy'. Thus, he suggests, it is imperative to recognise that because of the value of British trade to the imperial economy, the defence of British interests abroad, trade routes, and Britain itself are inseparably entwined, and principally executed through the use of the Royal Navy. Despite this, studies of imperial defence have mostly focused on the army, land defence, the administration and strategy of defence, and the route to India.⁵⁶

Imperial history has since largely shifted away from studies of governance and defence in more recent years, however, with the advent of 'new imperial history' and its focus of on imperial cultures and exchange. This has allowed historians to find new ways to analyse the way the empire worked. By centring questions on difference, and prioritising non-elite and non-western pasts, these histories have attempted to let the 'subaltern speak'.⁵⁷ They have, as would be expected, covered a huge amount of subjects – including race, gender, identity, knowledge, culture, religion, trade and governance, intercultural, slavery, and Englishness. A focus on ideologies of race, otherness, and civilisation, and the effects these had in constructing identities has been important in reassessing the reciprocal nature of imperial relationships, but is not something that has been fully explored for those naval men who traversed the world.

New imperial histories have nevertheless been important in that they have highlighted the networks of interconnected and interdependent sites of historical

⁵⁶ David Killingray, 'Imperial Defence', in Winks and Low (eds), *The Oxford History of the British Empire. Vol. 5, Historiography*, 342.

⁵⁷ Particularly influential have been Spivak and Guha. See Gayatri Spivak, 'Can the subaltern speak?' *Marxism and the Interpretation of Culture* (1988), 271–313; Gayatri Spivak and Ranajit Guha (eds), *Selected Subaltern Studies* (New York: Oxford University Press, 1988); Ranajit Guha, *A Subaltern Studies Reader* (Minneapolis: University of Minnesota Press, 1997).

significance, both territorial and imaginative.⁵⁸ Catherine Hall has been particularly influential in highlighting how these imperial connections were intrinsically related to power. However, causality was not always simply running from centre to periphery, and as a result, these connections constituted both coloniser and colonised.⁵⁹ Similarly, Tony Ballantyne has sought to replace the periphery and metropole idea completely, seeing empire as a 'bundle of relationships' that brought disparate regions, communities and individuals into contact through systems of mobility and exchange. By tracing one idea, in this case Aryanism, he is able to focus on networks and patterns of cultural exchange, thus highlighting the integrative power of empire. As a result of this focus, he reimagines the empire as dynamic and diverse communities constantly remade through these connections, without dispensing with the nation state framework.⁶⁰ Like Ballantyne, Zoë Laidlaw has examined the links between specific colonial sites. Although following a different connection, that of patronage and information, she is able to investigate the networks which connect metropolitan and colonial spheres, both through individuals and structures.⁶¹

This recent interest in imperial networks has gone a long way to destabilise the ideas of metropole and periphery through analysis of the 'meaningful connections across the empire that facilitated the continual reformation of imperial discourses, practices and cultures'.⁶² This has opened up the possibility of bringing both indigenous peoples and rival

⁵⁸ Kathleen Wilson, *A New Imperial History: Culture, Identity, and Modernity in Britain and the Empire, 1660-1840* (Cambridge: Cambridge University Press, 2004).

⁵⁹ Catherine Hall, *Civilising Subjects: Metropole and Colony in the English Imagination, 1830-1867* (Oxford: Polity, 2002).

⁶⁰ Tony Ballantyne, *Orientalism and Race: Aryanism in the British Empire* (Basingstoke: Palgrave, 2001).

⁶¹ Zoë Laidlaw, *Colonial Connections, 1815-45: Patronage, the Information Revolution and Colonial Government* (Manchester: Manchester University Press, 2005).

⁶² David Lambert and Alan Lester (eds), *Colonial Lives across the British Empire: Imperial Career in the Long Nineteenth Century* (Cambridge: Cambridge University Press, 2006), Abstract. The idea of metropole and periphery, and the concept of the 'official mind' were most famously put forward in Ronald Edward Robinson, John Gallagher, and Alice Denny, *Africa and the Victorians. The Official Mind of Imperialism* (London: Macmillan, 1961).

European influences into the analytical frame.⁶³ Understanding these connections is crucial to an imperial history which does not marginalise indigenous peoples to the background, nor prioritise metropolitan finance over other concerns.⁶⁴ By not necessarily privileging metropole or periphery when analysing imperial networks, scholars have been able to avoid the problem often seen in more traditional histories, that ‘neither colonial nor British places are of interest as configurations of peoples, experiences, things and practices in their own right’. Indeed, such an approach shows that it is ‘more useful to try to examine multiple meanings, projects, material practices, performances and experiences of colonial relations rather than locate their putative root causes, whether they are “economic”, “political” or “cultural”’. By doing so, such an approach reveals the entanglement of these networks, their disconnections, tensions, and contradictions, and how each node was remade by being connected.⁶⁵

These concerns have led some imperial historians to attempt to look at movement and connections around the empire through networks in the later nineteenth century.⁶⁶ Often this has been the study of the movement of people, in the main white Europeans, and these have generally taken the form of histories of imperial migration, exploration, and missions.⁶⁷ Studies such as Robert Bickers’ *Settlers and Expatriates* and David Lambert and

⁶³ Alan Lester, ‘Imperial Circuits and Networks: Geographies of the British Empire’, *History Compass*, 4, no. 1 (2006), 125-129.

⁶⁴ The idea of gentlemanly capitalists was put forward by P.J. Cain and A.G. Hopkins, *British Imperialism: Innovation and Expansion, 1688-1914* (London: Longman, 1993). For debate about whether this concept is too monocausal see Raymond E. Dumett (ed.), *Gentlemanly Capitalism and British Imperialism: the New Debate on Empire* (Harlow: Longman, 1999).

⁶⁵ Lambert and Lester (eds), *Colonial Lives across the British Empire*, 8; Lester, ‘Imperial Circuits and Networks’, 125-129.

⁶⁶ A substantial literature analysing the movement of people in the form of the slave trade and indentured servants exists for earlier periods.

⁶⁷ See, for example Robert A. Bickers, *Settlers and Expatriates: Britons over the Seas* (Oxford: Oxford University Press, 2010); Robert A. Stafford, ‘Exploration and Empire’, in Winks and Low (eds.), *The Oxford History of the British Empire. Vol. 5, Historiography*, 290-302; Norman Etherington, ‘Missions and Empire’, in Winks and Low (eds.), *The Oxford History of the British Empire. Vol. 5, Historiography*, 303-314; Marjory Harper, ‘British Migration and the Peopling of Empire’, in Porter (ed.), *The Oxford History of the British Empire. Vol. 3, the Nineteenth Century*, 75-87; Peter J. Huggill,

Alan Lester's *Colonial Lives* have shown the benefits of studying the networks created by the mobility of Britons in the empire.⁶⁸ These networks, whether personal, business, official, religious, or friendships, emphasise the transient nature of empires, in turn facilitating an understanding of empire as an interconnected space. In this way, it has allowed historians to analyse 'the many, diverse places that constituted the British Empire in the same text'.⁶⁹

Few of these studies have considered the role of the ocean in containing networks which connected these cultures, however. Yet, considering these oceanic connections is crucial to understanding the identity of those who existed within these systems, those who travelled between the 'core' and 'peripheral' or, indeed, those who occupied a space in between the two. The identity of those existing in or around what has been seen as a marginal space, indeed, a space of difference, which held its own unique beliefs, laws and culture, often interacting with a multitude of cultures, geographies and networks, offers huge scope for scholars of European empires, especially for examining the hybridity of oceanic systems.⁷⁰ Outside of naval histories, the study of empire through the framework of seas and oceans is only a relatively recent development. Despite the sea containing the very arteries of their burgeoning power, this historiography has yet to provide a balanced and complete perspective of the maritime empires of Europe.

Studies of discrete oceanic basins emerged much earlier, however. The first influential work, Fernand Braudel's *The Mediterranean*, published in 1949, altered the way in which scholars attempted to make sense of the relationship between human civilisation

'The Shrinking Victorian World', in Martin Hewitt (ed.), *The Victorian World*, (London; New York: Routledge, 2012), 73-89.

⁶⁸ Bickers, *Settlers and Expatriates*; Lambert and Lester (eds), *Colonial Lives across the British Empire*.

⁶⁹ Lester, 'Imperial Circuits and Networks', Abstract.

⁷⁰ M.N. Pearson, *The Indian Ocean* (London: Routledge, 2003); Paul Gilroy, *The Black Atlantic: Modernity and Double Consciousness* (Cambridge, MA: Harvard University Press, 1993); J.H. Elliot, 'Atlantic History: A Circumnavigation', in David Armitage and M.J. Braddick (eds), *The British Atlantic World, 1500-1800* (Basingstoke: Palgrave Macmillan, 2009).

and the water it borders.⁷¹ The study analysed the Mediterranean as a historical space, which Braudel claimed contained many juxtaposing and integrated cultural, political and economic networks. Although it can be argued that the Mediterranean was the ultimate example of a body of water as an interconnected historical space, the model was later pioneered in studies of the Indian Ocean by K.N. Chaudhuri.⁷²

The influence of these studies has led scholars in other fields to ask: 'what if seas were shifted from the margins to the centre of academic vision?'⁷³ M.N. Pearson has highlighted the enormous scope for these studies by suggesting that the material and intellectual frameworks of oceans, includes not only the seas, but also informs about coastal and land networks that impinge upon the oceans, as well as those within maritime communities.⁷⁴ Steinberg has suggested that the oceans present a unique proposition to scholars, as a 'space of anarchic competition par excellence', which is unclaimed, and is, indeed, unclaimable. Crucially, this space is not neutral, as projected by earlier scholars, but a disputed space, with its own political, hierarchical and social constructs, which were shaped, and shaped by, those social relations within it.⁷⁵

As well as being a distinct social space for study, focusing on the ocean as a space of analysis also gives unique insight into the nature, construction, infrastructure, and networks of larger, often global, enterprises; the most notable example being European empires. By adopting this approach, scholars are able to unlock the land bias of many imperial studies, thus revealing patterns and connections obscured by this narrow

⁷¹ Fernand Braudel, *The Mediterranean and the Mediterranean World in the Age of Philip II*, trans. Sian Reynolds (Berkeley, CA: University of California Press, 1972).

⁷² K.N. Chaudhuri, *Asia before Europe: Economy and Civilisation of the Indian Ocean from the Rise of Islam to 1750* (Cambridge: Cambridge University Press, 1990); K.N. Chaudhuri, *Trade and Civilisation in the Indian Ocean: An Economic History from the Rise of Islam to 1750* (Cambridge: Cambridge University Press, 1985); Paul W. Blank, 'The Pacific: A Mediterranean in the Making?', *Geographical Review*, 89, no. 2 (1999), 265-277.

⁷³ Kären Wigen and Jessica Harland-Jacobs, 'Guest Editors' Introduction', *Geographical Review*, 89, no. 2 (1999), i-ii. Many of these studies outside the Atlantic have been pioneered by historical geographers.

⁷⁴ Pearson, *The Indian Ocean*.

⁷⁵ Philip E. Steinberg, *The Social Construction of the Ocean* (Cambridge: Cambridge University Press, 2001), 17.

terrestrial approach.⁷⁶ Furthermore, studies using an oceanic framework offer an insight into interactions and juxtapositions of different histories, those of regions around the basins, those who travelled them, and the empires that disputed them, transcending the artificial boundaries of national histories.⁷⁷ The progression of these enquiries has closely mirrored that of other movements in the humanities and social sciences. Thus, although many of the first studies of oceanic basins focused on the political, strategic, and economic facets of oceanic networks, more modern scholarship had diversified and extended the scope of the field to analyse social and cultural exchange.

The most influential of these studies of the ocean undoubtedly include the Marxist histories of Marcus Rediker. *Between the Devil and the Deep Blue Sea* attempted a broader social approach to histories of the ocean, which focused on 'Jack Tar' himself. Rediker strongly identified himself as part of a wider historical movement, labour history, and argued that previous histories had obscured the important features at sea, by presenting a romantic image of seafaring.⁷⁸ His work with Peter Linebaugh advanced this focus on working class history, looking at both resistance and co-operation as part of the hidden networks of the Atlantic.⁷⁹ These themes are prevalent in another landmark text, Paul Gilroy's *The Black Atlantic*, in which he looks at the black experience of the British Atlantic.⁸⁰ As well as filling an important subaltern void in oceanic analysis, the study also reinforced the need to understand resistance and counter-histories of oceans, and crucially, the emergence of a hybridity in oceanic culture, politics, and imperial rule. More recently, many of the approaches and subjects of the 'new imperial history' have been

⁷⁶ Ibid; Kimberley Peters, 'Future Promises for Contemporary Social and Cultural Geographies of the Sea', *Geography Compass*, 4, no. 9 (2010), 1260–1272.

⁷⁷ Chaudhuri, *Trade and Civilisation in the Indian Ocean*; Philip E. Steinberg, 'Lines of Division, Lines of Connection: Stewardship in the World Ocean', *Geographical Review*, 89, no. 2 (1999); Peter Linebaugh and Marcus Rediker, *The Many-Headed Hydra: Sailors, Slaves, Commoners, and the Hidden History of the Revolutionary Atlantic* (London: Verso, 2000).

⁷⁸ Marcus Rediker, *Between the Devil and the Deep Blue Sea: Merchant Seamen, Pirates and the Anglo-American Maritime World, 1700-1750* (Cambridge: Cambridge University Press, 1987).

⁷⁹ Linebaugh and Rediker, *The Many-Headed Hydra*.

⁸⁰ Gilroy, *The Black Atlantic*.

adopted in an oceanic context. The scope of these oceanic studies influenced by the cultural turn is diverse and wide-ranging, encompassing such varied subjects as the role of imagination, law, gender, sexuality, regional economies, and micro-geographies, amongst many others.⁸¹

If any area of study has fulfilled Braudel's prophecy that 'history can do more than study walled gardens', however, it is Atlantic history, which has been claimed to be 'one of the most important historiographical developments' of the study of European imperial history.⁸² It is within the theatre of the Atlantic that the concept of oceanic analysis has been developed furthest, and where much of the scope and possibilities of an oceanic framework for scholarship have been explored. The emergence of an 'Atlantic system', a hemispheric space of interchange, which fundamentally changed the world, is emphasised in Atlantic histories. Seen as a primarily European invention, the Atlantic of the early modern period contained easily identifiable integrated connections and networks, straightforward to study and explore, and comparable to those explored by Braudel in the Mediterranean in earlier periods.⁸³ It was through the uniqueness of the Atlantic world, these scholars claim, that economic development was pushed, and it was the Atlantic that created the mass market trading conditions necessary for globalisation.⁸⁴ Bernard Bailyn has even gone as far as to say it was through the Atlantic system that the very culture of

⁸¹ David Lambert, Luciana Martins, and Miles Ogborn, 'Currents, Visions and Voyages: Historical Geographies of the Sea', *Journal of Historical Geography*, 32, no. 3 (2006), 479-493; Peters, 'Future Promises for Contemporary Social and Cultural Geographies of the Sea'; Jack P. Greene and Philip D. Morgan, 'Introduction', in Jack P. Greene and Philip D. Morgan (eds), *Atlantic History: A Critical Appraisal* (Oxford: Oxford University Press, 2009).

⁸² Braudel, *The Mediterranean*, 22; Thomas Benjamin, *The Atlantic World: European, Africans, Indians and Their Shared History, 1400-1900* (Cambridge: Cambridge University Press, 2009); David Armitage and M.J. Braddick, 'Introduction', in Armitage and Braddick (eds), *The British Atlantic World*.

⁸³ Bernard Bailyn, *Atlantic History: Concept and Contours* (Cambridge, MA: Harvard University Press, 2005); Armitage and Braddick, 'Introduction', in Armitage and Braddick (eds), *The British Atlantic World*, 1-10.

⁸⁴ Greene and Morgan, 'Introduction', in Greene and Morgan (eds), *Atlantic History: A Critical Appraisal*, 3-34; Bernard Bailyn and Patricia L. Denault, 'Introduction', in Bernard Bailyn and Patricia L. Denault (eds), *Soundings in Atlantic History: Latent Structures and Intellectual Currents, 1500-1830* (Cambridge, MA: Harvard University Press, 2009), 1-43.

modernity, encompassing economy, enlightenment, and science, emerged.⁸⁵ Whether such statements can be sustained is debateable, but Atlantic history does offer solutions to scholars attempting to reconcile the relationships between nation state and empire, and, indeed, between rival empires operating within the space of the Atlantic.⁸⁶

Studies have concentrated predominantly on the British Atlantic, however, which has not only excluded the histories, networks, and interactions of other nations and peoples (and perhaps even continents in the case of South America) within the Atlantic, but also the connections and infrastructure that branched beyond Atlantic, particularly into the Indian Ocean and the Far East. The presence of inter-oceanic networks, some of which were highly prominent, negates the argument that different oceans are fundamentally discrete places, which are too diverse to compare, as has been contended.⁸⁷ Indeed, such histories suggest such a narrow geographical focus can often produce studies that are Eurocentric, essentially depicting, by exclusion, other oceans as passive and unchanging, presenting the 'global world' as a product of the West.⁸⁸ This masks the interconnectivity of these systems, and isolates the Atlantic as a somehow distinct and disconnected ocean. This, in turn, not only exaggerates the role of America in the development of modernity in Europe, but also puts a primacy on northwest Europe in the world economic order.⁸⁹

In response to this, other oceanic studies of the eighteenth century have concentrated on the linkages between oceans, going some way to bridge the gap between new imperial and maritime histories. Work on the East India Company in particular has

⁸⁵ Bailyn and Denault, 'Introduction', in Bailyn and Denault (eds), *Soundings in Atlantic History*.

⁸⁶ Elliot, 'Atlantic History: A Circumnavigation', in *Armitage and Braddick (eds), The British Atlantic World*, 233-249.

⁸⁷ Ibid.

⁸⁸ Pearson, *The Indian Ocean*.

⁸⁹ Peter A. Coclanis, 'Beyond Atlantic History', in Greene and Morgan (eds), *Atlantic History: A Critical Appraisal*, 337-356. In fact, little work has been attempted outside the British Atlantic, and specifically its relationship with the North American Atlantic seaboard. That the Spanish and Portuguese Atlantics have received such a small proportion of attention has led to suggestions of an Anglo-American bias. See Bailyn and Denault, 'Introduction', in Bailyn and Denault (eds), *Soundings in Atlantic History*; Elliot, 'Atlantic History: A Circumnavigation', in *Armitage and Braddick (eds), The British Atlantic World*.

shown interesting ways to investigate the complexity of imperial and maritime networks. Miles Ogborne's *Indian Ink*, for example, used the concept of writing 'to understand how changing relationships of knowledge and power shaped the encounter between Europe and Asia in the seventeenth and eighteenth centuries'.⁹⁰ Similarly, 'The East India Company at Home, 1757–1857', a research project headed by Margot Finn, is using the British country house to examine the wider imperial and global contexts and connections of the Company.⁹¹ Especially important has been a recent collection of essays entitled *Britain's Oceanic Empire*, which has aimed to connect British imperial, maritime, and global histories for the period 1550–1850.⁹² This collection explicitly seeks to assess whether practices were so different in the Atlantic and the Indian oceans that it justifies the discrete way they are often treated in histories. By doing so, it shows linkages between oceans through the lenses of Britons overseas, the law, government, diplomacy, and the military, convincingly showing that, in many ways, Britain had a global oceanic empire in this period. Although this book shows useful directions for further study, by ending in 1850, it shows that, as Frances Steel suggests, the period of analysis needs to be extended into the later nineteenth century, a period which is largely disregarded by many of these studies.⁹³

The connection between the world's oceans was far stronger towards the end of the nineteenth century, and this is perhaps why very few existing Atlantic histories go much beyond 1800, and those that do dedicate little text to such outlying dates.⁹⁴ For the most pre-eminent period of oceanic peace, that of *Pax Britannica*, concentrating on one ocean is less meaningful. Here, it is more useful to analyse the ocean and its surrounding

⁹⁰ Miles Ogborne, *Indian Ink: Script and Print in the Making of the English East India Company* (Chicago: University of Chicago Press, 2007), xxii.

⁹¹ East India Company at Home, 1757-1857: <http://blogs.ucl.ac.uk/eicah/home/>.

⁹² H.V. Bowen, Elizabeth Mancke, and John G. Reid (eds), *Britain's Oceanic Empire: Atlantic and Indian Ocean Worlds, c.1550-1850* (Cambridge: Cambridge University Press, 2012).

⁹³ Frances Steel, *Oceania under Steam: Sea Transport and the Cultures of Colonialism, c.1870-1914* (Manchester: Manchester University Press, 2011).

⁹⁴ Benjamin, for example, only discusses the abolition of various slave trades post 1800, despite the title stating a study up to 1900, and Bailyn dedicates just two pages of his study to beyond 1800. See Benjamin, *The Atlantic World*; Bailyn, *Atlantic History: Concept and Contours*.

communities and places as examples of what Mary Louise Pratt had termed imperial 'contact zones'. This approach 'treats the relations among colonisers and colonised ... not in terms of separateness, but in terms of co-presence, interaction, interlocking understandings and practices, and often within radically asymmetrical relations of power'.⁹⁵ As periods of peace left oceanic networks and infrastructure undisturbed and intact, the nineteenth century is particularly important era of high international, intercontinental, and intercultural interaction, and where the hybridity of the oceans was at its highest.⁹⁶

These interactions, and the forms of hybridity produced, show how oceanic history can reveal enormously complex relationships, networks, and interactions. To this end it has been suggested by Bernhard Klein and Gesa Mackenthun that:

the impact of the ocean on the course of modern history has been as enormous as its roles have been contradictory: the sea has served as an agent of colonial oppression but also of indigenous resistance and native empowerment, it has been a site of loss, dispersal, and enforces migration but also of new forms of solidarity and affective kinship, a paradigm of modern capitalism but also of its creative reinterpretation, a figure of death but also of life.⁹⁷

Studies exploring this impact have concentrated, in general, on ports and beaches as the settings for these encounters.⁹⁸ Denning has been particularly influential in attempting a 'double visioned history' arguing that 'natives and strangers have drawn their different

⁹⁵ Mary Louise Pratt, *Imperial Eyes*, 7. Similarly, Greg Denning argues that 'beliefs, objects, words are not borrowed from one culture by another. They are transformed, re-created'. Greg Denning, 'Deep Times, Deep Spaces: Civilizing the Sea', in Bernhard Klein and Gesa Mackenthun (eds), *Sea Changes: Historicizing the Ocean* (London: Routledge, 2004), 27.

⁹⁶ Steinberg, 'Lines of Division, Lines of Connection'; Blank, 'The Pacific: A Mediterranean in the Making?', 265-277.

⁹⁷ Bernhard Klein and Gesa Mackenthun, 'The Sea Is History' in Klein and Mackenthun (eds), *Sea Changes: Historicizing the Ocean*, 2.

⁹⁸ See, for instance Frank Broeze (ed.), *Brides of the Sea: Port Cities of Asia from the 16th-20th Centuries* (Kensington, NSW: NSW Press, 1989); Frank Broeze, *Gateways of Asia: Port Cities of Asia in the 13th-20th Centuries* (London: Kegan Paul, 1997).

cultural identities from the same sea'. In doing so, he argues that beaches are 'places for special historical insights. In-between places, where every present moment is suffused with the double past of both sides of the beach and complicated by the creative cultures that this mixture makes'.⁹⁹ In particular, these studies have revealed the cultural interactions, tensions, and imperial power in these places, but most do not analyse how these places were linked by oceanic connections.

While the exceptional movement of people has been the focus of studies dealing with nineteenth-century oceanic connections, the historiography has largely ignored the more routine and commonplace. Moreover, studies have largely concentrated on travel between metropole and periphery, with voyages between peripheral places, and sub-imperial networks being largely omitted.¹⁰⁰ Furthermore, even into the twentieth century the majority of sea journeys, despite perceptions of a shrunken world, were still often a great undertaking, requiring labour, infrastructure, and fuel, yet 'we still know little about transport's wider impact'.¹⁰¹ Indeed, while theoretical and metaphorical networks have been more widely explored, physical infrastructural networks have been largely unstudied. These networks, which connected imperial and global spaces, were not only crucial to imperial processes, but also had huge political, cultural, and social effects on a global scale.

Perhaps the most studied imperial infrastructure in general is that used for long-distance communication, usually the telegraph, which has been explored in many novel and informative ways.¹⁰² A collection edited by Peter Putnis, Chandrika Kaul, and Jurgen

⁹⁹ Denning, 'Deep Times, Deep Spaces', in Klein and Mackenthun (eds), *Sea Changes: Historicizing the Ocean*, 13.

¹⁰⁰ Examples of studies which have analysed these periphery to periphery mobilities are Lambert and Lester (eds), *Colonial Lives across the British Empire*, and Steel, *Oceania under Steam*.

¹⁰¹ Frances Steel, 'Uncharted Waters? Cultures of Sea Transport and Mobility in New Zealand Colonial History', *Journal of New Zealand Studies*, no. 12 (2011), 137-154.

¹⁰² A good example of a traditional style history of telegraphs is Daniel R. Headrick, *The Invisible Weapon: Telecommunications and International Politics, 1851-1945* (Oxford: Oxford University Press, 1991). Its role in literature is discussed in Susan Shelangoskie, 'Anthony Trollope and the Social Discourse of Telegraphy after Nationalisation', *Journal of Victorian Culture*, 14, no. 1 (2009), 72-93. Its juxtaposition with ideas about bodily and social discipline is discussed in Iwan Rhys Morus,

Wilk, for example, sought to understand the flows of communication between centre and periphery as well as ‘growing interconnectedness among geographically dispersed and diverse communities’. It does not, however, assume such processes were seamless, but that they were ‘tempered by the realities of specific local and regional contexts and their political and cultural imperatives’. Thus the telegraph system did not, as has been imagined, annihilate time and space, but suffered disconnections and issues with reliability, connecting some and isolating others.¹⁰³ Furthermore, Simon Potter has examined how the telegraph made possible the emergence of ‘imperial press system’ across Britain and the settler colonies, allowing a ‘study in imperial integration’ through the history of the telegraph.¹⁰⁴ Similar studies have assessed the impact of the railway in the nineteenth century.¹⁰⁵ Robert Home’s study of ‘the formation of towns and cities as an instrument of colonial expansion and control throughout the empire’ is one of few other examples of studies of imperial infrastructure that have moved beyond communication.¹⁰⁶

However, scholars of the history of science are expanding the study of infrastructure, and a special edition of the *History Workshop Journal* looked at ‘the

“‘The Nervous System of Britain’: Space, Time and the Electric Telegraph in the Victorian Age’, *The British Journal for the History of Science*, 33, no. 4 (2000), 455-475.

¹⁰³ Peter Putnis, Chandrika Kaul, and Jurgen Wilke, ‘Introduction’, in Peter Putnis, Chandrika Kaul, and Jurgen Wilke (eds), *International Communication and Global News Networks: Historical Perspectives* (New York: Hampton Press, 2011), 1-2. A similar point is made in Glen O’Hara, ‘New Histories of British Imperial Communication and the “Networked World” of the 19th and Early 20th Centuries’, *History Compass*, 8, no. 7 (2010), 609-625. The breakdown of infrastructure has been explored for the recent past in Stephen Graham, *Disrupted Cities: When Infrastructure Fails* (London: Taylor & Francis, 2009).

¹⁰⁴ Simon James Potter, *News and the British World: The Emergence of an Imperial Press System, 1876-1922* (Oxford: Clarendon, 2003), 1.

¹⁰⁵ Erik van der Vleuten and Arne Kaijser, ‘Introduction’, in Erik van der Vleuten and Arne Kaijser (eds), *Networking Europe: Transnational Infrastructures and the Shaping of Europe, 1850-2000* (Cambridge: Science History Publications, 2006), 1-11; John Reginald Kellett, *Railways and Victorian Cities* (London: Routledge, 1979); Jack Simmons, *The Victorian Railway* (London: Thames and Hudson, 1991); Michael J. Freeman and Derek H. Aldcroft, *Transport in Victorian Britain* (Manchester: Manchester University Press, 1988); Gary Richard Hawke, *Railways and Economic Growth in England and Wales, 1840-1870* (Oxford: Clarendon Press, 1970); Mark Casson, *The World’s First Railway System: Enterprise, Competition, and Regulation on the Railway Network in Victorian Britain* (Oxford: Oxford University Press, 2009).

¹⁰⁶ Robert K. Home, *Of Planting and Planning: The Making of British Colonial Cities* (London: Routledge, 1996), Abstract.

possibilities and problems wrought by technological innovation'.¹⁰⁷ In the issue, topics such as the telegraph and salt beef are examined in novel ways, looking at how they connect different places and communities across oceans.¹⁰⁸ Leading the way, however, have been historians of Europe.¹⁰⁹ In particular, Erik van der Vleuten and Arne Kaijser have forwarded the agenda in studies of transnational infrastructure, arguing that 'historians often *do* observe the pivotal role of transnational networks, but fail to follow up this observation with actual narrative and analysis ... exactly how these networks developed, and how this development process intertwines with ... history at large, is not explored, but assumed'. Indeed, it is only in studying the development and maintenance of these infrastructures that one can see they were not 'straightforward processes, but were characterised by ambiguities and tensions', and intertwined with many actors, confusions, and unintended consequences.¹¹⁰ A major project, which will produce six volumes by the end of 2014, has also sought to address the dearth of infrastructural history. Entitled *Making Europe: Technology and Transformations, 1850–2000*, it seeks to analyse the processes behind 'day-to-day practices', by analysing 'powerful infrastructures' and 'knowledge networks'. Although the focus is centred on Europe and technology in general, such a project points towards the use of similar approaches for more works with a smaller technological, infrastructural, or commodity focus, and wider geographic scope.¹¹¹

Despite Ben Marsden and Crosbie Smith suggesting that historians should attempt 'to penetrate the black boxes' of 'steam power, steam ship', a focus on infrastructure has not yet emerged. In fact, little has been written about the need for infrastructure for the

¹⁰⁷ Matt Cook and Marybeth Hamilton, 'Editorial', *History Workshop Journal*, 63, no. 1 (2007), i-ii.

¹⁰⁸ Nigel Leask, 'Thomas Muir and the Telegraph: Radical Cosmopolitanism in 1790s Scotland', *History Workshop Journal*, 63, no. 1 (2007), 48-69.; Bertie Mandelblatt, 'A Transatlantic Commodity: Irish Salt Beef in the French Atlantic World', *History Workshop Journal*, 63, no. 1 (2007), 18-47.

¹⁰⁹ For an excellent summary of the historiography, see Erik van der Vleuten and Arne Kaijser, 'Networking Europe', *History and Technology*, 21, no. 1 (2005), 21-48. For current work, see Transnational Infrastructures and the Rise of Contemporary Europe <http://www.tie-project.nl/>.

¹¹⁰ van der Vleuten and Kaijser, 'Introduction', in van der Vleuten and Kaijser (eds), *Networking Europe*, 3-7.

¹¹¹ Johan Schot and Phil Scranton, *Making Europe: Technology and Transformations, 1850-2000*, 6 vols, (Basingstoke: Palgrave Macmillan, Forthcoming).

navy or other shipping concerns, or its strategic impact, especially after 1879. Yet it is imperative, as Marsden and Smith suggest, to 'see each of those "tools of empire", not simply as a fixed product with a given role', but to understand the context of such technologies. Perhaps the most crucial 'tool of empire' was the navy, and arguably its most important need was the ability to obtain fuel overseas, yet steam-coal is largely absent from imperial histories.¹¹²

Global History

Felipe Fernández-Armesto has suggested that in the age of European empires, 'sea routes became the highways of long-range transmissions of culture and the framework on which genuinely global history – cultural exchange that is, that encompassed the world – was built'.¹¹³ By considering empire in this way, a global approach to an analysis of European empires has made sense to an increasing number of scholars. Indeed, when one considers transnational histories of oceans and empires in the nineteenth century, it is through a global scope that they reach their apogee.

The examination of the past as a global entity, en route to or emerging as an interconnected whole, stems from the almost indiscriminate contemporary use of the terms 'globalisation' and 'global world' to describe the post 9/11 and internet age.¹¹⁴ As with many new historiographical trends, it is easy to be wary of a global approach to history as a development that mirrors contemporary circumstances, but offers little to scholarship. However, the promise of such an approach in revealing 'hidden meta-

¹¹² Ben Marsden and Crosbie Smith, *Engineering Empires: A Cultural History of Technology in Nineteenth-Century Britain* (Basingstoke: Palgrave Macmillan, 2005), 10-11. See also Crosbie Smith, *The Science of Energy: A Cultural History of Energy Physics in Victorian Britain* (London: Athlone, 1998). For a pre- 1879 history of naval coaling, see Wilson, 'Fuelling the Steam Navy'.

¹¹³ Felipe Fernández-Armesto, 'Maritime History and World History', in Finamore (ed.), *Maritime History as World History*, 22.

¹¹⁴ A.G. Hopkins, *Global History: Interactions between the Universal and the Local* (Basingstoke: Palgrave Macmillan, 2006), 3; Jurgen Osterhammel and Niels P. Petersson, *Globalization: A Short History* (Princeton, NJ: Princeton University Press, 2005), 3.

narratives' should merit some attention.¹¹⁵ Gary Magee and Andrew Thompson assert that the British Empire was an 'interconnected zone constituted by multiple points of contact and complex circuits of exchange' and because of the scale of these interactions, studies of empires require all of these circuits to be inside the same analytical frame.¹¹⁶ Furthermore, with improvements in technology allowing increasing flows of goods, knowledge and, most crucially, people, the interdependency of these networks, and therefore, the world events they contributed to, justify a need to analyse imperial history in a broader geographical framework. Moreover, a global approach not only allows scholars to see patterns of uniformity and hybridity emerging as a result of a growing interdependence, but also how such integration led to heightened ideas of difference, disconnections, and occlusions.¹¹⁷ Certainly, it is a useful tool in the analysis of the role of empires in the emergence of a 'global', 'modern', world.¹¹⁸

Global history, then, has the scope to cover a variety of topics – information, enterprise, migration, consumerism, environment, human rights, culture, disease, and terrorism.¹¹⁹ By assessing the global nature of these subjects, these histories seek to 'decentre analysis', highlighting the diversity of connections and exchange, thus allowing for the discussion of the interdependent nature of both western and non-western networks in facilitating the movement of 'goods, ideas, knowledge, languages and people'.¹²⁰ Thus these interconnected networks are crucial to understanding how empires, nations, peoples, cities, and businesses operated, exchanged, and were influenced by others in this period. This approach, in theory, therefore, removes the Eurocentric

¹¹⁵ C.A. Bayly, *The Birth of the Modern World, 1780-1914: Global Connections and Comparisons* (Oxford: Blackwell, 2004), 8.

¹¹⁶ Gary Bryan Magee and Andrew S. Thompson, *Empire and Globalisation: Networks of People, Goods and Capital in the British World, c.1850-1914* (Cambridge: Cambridge University Press, 2010), 16. Whether such a history of the 'British World' is truly global is perhaps questionable.

¹¹⁷ Bayly, *The Birth of the Modern World*.

¹¹⁸ Magee and Thompson, *Empire and Globalisation*.

¹¹⁹ Bruce Mazlish and Akira Iriye (eds), *The Global History Reader* (London: Routledge, 2005).

¹²⁰ A.G. Hopkins, *Globalization in World History* (London: Pimlico, 2002), 2.

dominance of studies of modernisation and globalisation, which often present both as a product of the West, and supplant it with a more complex view, reflecting the multifaceted nature of imperial and indigenous network intersections, interdependence, resistance and occlusions in the creation of a modern, global world.¹²¹

Much of the global history that has emerged has been concerned with the history of globalisation. It has been argued that this is 'currently the most important single debate in the social sciences: analysis of the origins, nature and consequences of globalization'.¹²² These scholars argue that global history is interdisciplinary, seeing cultural, political, and economic together helping new understandings of conventional subjects such as war and politics.¹²³ As a result of this focus, the crucial role of capital in the rise of the modern global has been heavily emphasised. Both Bayly and Magee and Thompson have suggested that although unfashionable, the economic analysis is vital to an understanding of the huge increase in the creation, growth and intersections of global networks, which were created by movements of people, technology, capital, commodities, and information.¹²⁴ Magee and Thompson's further assertion that as well as economics, migration and culture were crucial elements in the movement towards a global world suggest that oceanic analysis may have yet more to offer the field, with oceanic networks central to migration, and a significant place of cultural exchange.¹²⁵ Studies of how these physical networks functioned, however, are largely absent. Furthermore, such studies have thus far suffered from overly specific or vague definitions. Bruce Mazlish and Akira Iriye summarise the problem by analysing such a complex process as globalisation, describing it as a 'changing, many-faceted, historically

¹²¹ Hopkins, *Globalization in World History*.

¹²² Ibid., 1.

¹²³ Mazlish and Iriye (eds), *The Global History Reader*, 10-11.

¹²⁴ Magee and Thompson, *Empire and Globalisation*.

¹²⁵ Ibid.

evolving process, it cannot be captured in a single phrase'.¹²⁶ Such a focus also runs the risk of teleology, promoting the idea of European, or British, exceptionalism.

Scholars have taken a global approach in other ways, however, particularly in analysing flows of commodities, information, and knowledge. The distribution of commodities across the globe, via oceans, is a well-documented field of enquiry, and has emerged as a field of study in its own right.¹²⁷ Early examples, such as Lorna Weatherill's analysis of consumer behaviour in the early modern period and Sidney Mintz's study of sugar, both from 1985, have precipitated a wide variety of different histories of commodities.¹²⁸ Commodity histories have allowed scholars a unique insight into the networks and connections that existed, often across oceans, to facilitate trade.¹²⁹ Such histories have tended to fit into two fairly narrow and often overlapping categories, however. The first deals with luxury trades, such as silk, precious metals, porcelain, and jewels. The second analyse trades that involved oppression, slavery, exploitation, and/or colonial subjugation, particularly in the Atlantic world, such as the trade in tobacco, cotton, sugar, and rice.¹³⁰ Both tend to focus on the impact of these new products in terms of culture and consumption, and their role in the emergence of global markets and trades. As such, they are largely focused on the seventeenth and eighteenth centuries, or on the post Second World War 'consumer society'.¹³¹

¹²⁶ Ibid., 2.

¹²⁷ See, for example, 'Commodities, Empires, and Global History Special Edition', *Journal of Global History*, 4, no. 1 (2009). The issue includes papers on sugar, a port comparison, silk, coffee, oils and fats, and recipes.

¹²⁸ L.M. Weatherill, *Consumer Behaviour and Material Culture in Britain, 1660-1760* (London: Routledge, 1985); Sidney Wilfred Mintz, *Sweetness and Power: The Place of Sugar in Modern History* (New York, NY: Viking, 1985).

¹²⁹ Kenneth Pomeranz and Steven Topik, *The World That Trade Created: Society, Culture, and the World Economy, 1400-the Present* (Armonk, NY: M.E. Sharpe, 1999).

¹³⁰ For current research, see the projects at the Open University: <http://www.open.ac.uk/blogs/CommodityHistories/>; <http://www.open.ac.uk/Arts/ferguson-centre/commodities-of-empire/project.shtml>.

¹³¹ Frank Trentmann (ed.), *The Oxford Handbook of the History of Consumption* (Oxford: Oxford University Press, 2012), 3. Histories of single objects, such as shoes, chart the changes in consumer culture across centuries, analysing cultural meaning, relationships and connections between major

Many of these histories have sought to analyse some of the most important and influential trades, and cotton has been at the forefront of this. Beverly Lemire argues that cotton was ‘the driving force in global change’, and Giorgio Riello subtitled his study ‘the fabric that made the modern world’.¹³² There have, however, been few attempts to assess other important cargos that, though bulkier and less controversial, were crucial to trade and empire. As such, coal, ‘utterly lacking in glamour’, but perhaps the commodity most deserving of the title ‘the driving force in global change’, has largely been ignored, despite networks spanning the globe, and being crucial to trade, manufacturing, travel, and defence. Its importance cannot be underestimated, Barbara Freese argues that British coal ‘triggered the industrial revolution, became the most powerful force on the planet, and created an industrial society the likes of which the world had never seen’.¹³³ More poetically, Ralph Waldo Emerson suggested that ‘every basket is power and civilisation’.¹³⁴

Even outside commodity histories, a coal-blindness has been seen more generally in the last three decades. Older studies of coal are largely domestically focused, and many are economic histories, which centre on the growth of the industry and its markets, or are business histories of individual mining companies.¹³⁵ The remaining studies are largely social histories, examining the effect of the industry on local areas, workers, health, urban

civilisations. See Peter McNeil and Giorgio Riello (eds), *Shoes: A History from Sandals to Sneakers* (Oxford: Berg, 2006).

¹³² Giorgio Riello, *Cotton: The Fabric That Made the Modern World* (Cambridge: Cambridge University Press, 2013); Beverly Lemire, *Cotton* (Oxford: Berg, 2011), 1.

¹³³ Freese, *Coal: A Human History* (Oxford: Perseus, 2003), 2, 13.

¹³⁴ Ralph Waldo Emerson, *The Conduct of Life* (Boston, MA: Ticknor and Fields, 1860), 2.

¹³⁵ The exception to this is Freese, *Coal: A Human History*, an extensive look at the role of coal in world history. Those which deal with the naval coal of South Wales include Andrew Philip Barnett and David Willson Lloyd, *The South Wales Coalfield* (Cardiff: Business Statistics, 1921); R.A. Church, Alan Hall, and John Kanefsky, *The History of the British Coal Industry. Vol.3, 1830-1913: Victorian Pre-Eminence* (Oxford: Clarendon, 1986); M.J. Daunton, *Coal Metropolis: Cardiff 1870-1914* (Leicester: Leicester University Press, 1977); C. Knick Harley, ‘Coal Exports and British Shipping, 1850-1913’, *Explorations in Economic History*, 26, no. 3 (1989), 311-338; B.R. Mitchell, *Economic Development of the British Coal Industry 1800-1914* (Cambridge: Cambridge University Press, 1984); John Henry Morris and Lawrence Harding Williams, *The South Wales Coal Industry, 1841-1875* (Cardiff: University of Wales Press 1958); Q. Outram, *The British Coal Mining Industry: The 1924 National Wages Agreement* (Leeds: University of Leeds School of Economic Studies, 1982); R.H. Walters, *The Economic and Business History of the South Wales Steam Coal Industry, 1840-1914* (New York: Arno Press, 1977).

development, and migration.¹³⁶ In attempting new histories of coal, commodity histories are a useful place to begin. This thesis seeks, for example – to paraphrase Riello’s introduction about cotton – to be ‘a history of naval coal, but also a story narrated through naval coal’. In this way, it uses the global and interconnected nature of the commodity to explore both the local and the global in terms of empire, power, economics, and culture.¹³⁷

Many commodity histories have specifically looked at the role of trade in globalisation, but while the history of globalisation is, indeed, a global history, global history is not simply the history of globalisation.¹³⁸ Indeed, as Maxine Berg has suggested, global history should not always be led by a search for beginnings of globalisation, but also as a link with new imperial histories. In this way, it not only decentres Europe in the story of empire, allowing ‘subalterns’ greater limelight, but also allows histories of the interaction between different empires and peoples.¹³⁹ Furthermore, such an approach can be used to overcome the fact that ‘economic histories of early modern Europe and its colonial empires are still separated off from social and cultural histories of consumption and material culture’.¹⁴⁰ With no agenda to identify the seeds of globalisation, nor, therefore, to compare ‘the west and the rest’ this approach is less averse to teleology and to simply telling a story of English or British exceptionalism.¹⁴¹ Indeed, moving away from issues of

¹³⁶ J. Ginswick, *Labour and the Poor in England and Wales 1849-1851: The Mining and Manufacturing Districts of South Wales and North Wales* (London: Frank Cass, 1983); A.J. MacIvor and R. Johnston, *Miners' Lung: A History of Dust Disease in British Coal Mining* (Farnham: Ashgate, 2007).

¹³⁷ Riello, *Cotton*, 1.

¹³⁸ Kevin H. O'Rourke, *The International Trading System, Globalization and History* (Cheltenham: Edward Elgar, 2005).

¹³⁹ See, for example Bayly, *The Birth of the Modern World*; John Darwin, *After Tamerlane: The Global History of Empire since 1405* (London: Allen Lane, 2007); Jane Burbank and Frederick Cooper, *Empires in World History: Power and the Politics of Difference* (Princeton, NJ: Princeton University Press, 2010); Maxine Berg (ed.), *Writing the History of the Global: Challenges for the 21st Century*. (Oxford: Oxford University Press, 2013).

¹⁴⁰ Maxine Berg, ‘Global History: Approaches and New Directions’, in Berg (ed.), *Writing the History of the Global*, 10.

¹⁴¹ Osterhammel and Petersson, *Globalization: A Short History*; Berg, ‘Global History: Approaches and New Directions’ in Berg (ed.), *Writing the History of the Global*, 8. For a particularly extreme example of this, see Niall Ferguson, *Empire: How Britain Made the Modern World* (London: Allen Lane, 2003).

globalisation brings new questions about diasporas, trade, religion, material culture, and knowledge.¹⁴² This has been especially important in analysis of the movement of goods around the globe, allowing historians to make sense of the links between physical and conceptual places of production, distribution, purchase, and consumption. A global approach in this way dictates that historians have to consider space as well as time, avoiding ideas of 'globally advancing homogeneity' and 'local specificity', instead revealing complex and often contradictory connections between disparate places.¹⁴³

Other histories have addressed how this movement of commodities facilitated the spread of a whole range of ideas. Some were crucial to the physical process of travel, through knowledge of navigation, currents, geography, and cosmology, some informed of the knowledge of discoveries, through botany, anthropology, and racial beliefs, and some informed of politics of settlement and governance.¹⁴⁴ These sets of 'knowledge', and the networks which dispersed them, are crucial to the way contemporaries understood empires, travel, and indigenous lands and peoples, and are therefore crucial to understanding the politics, governance, culture, and military facets of imperial rule.

As a result of the role of the oceans in the rise of an integrated world, a global approach to history also gives opportunity to reflect upon the role of maritime infrastructure and processes in this change. Cannadine has argued it was Britain's maritime control, which was geographically larger and thus more encompassing than its official imperial influence, which enabled Britain to have such a great global presence. Therefore it was through the oceans that the networks of material and cultural exchange, the catalysts of a global world, occurred. Hence using a maritime perspective 'de-parochialises' studies

¹⁴² Berg, 'Global History: Approaches and New Directions', in Berg (ed.), *Writing the History of the Global*, 10.

¹⁴³ John Brewer and Frank Trentmann (eds), *Consuming Cultures, Global Perspectives: Historical Trajectories, Transnational Exchanges* (Oxford: Berg, 2006), 2-13.

¹⁴⁴ Donald B. Freeman, *The Pacific* (London: Routledge, 2010); R. Drayton, 'Maritime Networks and the Making of Knowledge', in David Cannadine (ed.), *Empire, the Sea and Global History: Britain's Maritime World, c.1760-c.1840* (Basingstoke: Palgrave Macmillan, 2007), 72-82.

of globalisation, by highlighting the hybridity of its manifestations and origins.¹⁴⁵ The fact that it was through oceanic networks, the arteries of European expansion and empire, that a globalised world was able to exist in any tangible way, has led scholars to identify the key role of oceans, Johnman and Murphy describing it as the 'original motor of globalisation'.¹⁴⁶

However, whereas empires have formed a focus for some global histories, few have considered their the oceanic nature of their networks, a situation which needs to be addressed, not least because as the prominent theatre of imperial infrastructures, they lend themselves ideally to a global approach.¹⁴⁷ As Peter Coclanis has pointed out, all of the leading 'Atlantic powers', bar perhaps France, had major economic interests in the East, which suggests that an Atlantic centred analysis skews the reality of what was, in fact, a series of flows around the globe, which were often integrated or interdependent, which especially true in the nineteenth century.¹⁴⁸

Bayly has suggested that a global history of the emergence of a modern world should assess 'how historical trends and sequences of events, which have been treated separately in regional and national histories, can be brought together'.¹⁴⁹ Much still needs to be done to fulfil this vision, however. Although the level of interconnectivity between networks across the globe increased during the previous two centuries, perhaps the best examples are found in the nineteenth century. In this period, early connections grew and strengthened, assisted by an increasingly global trade of commodities, including goods, religion, information, tourists, and disease facilitated by increasingly global systems of

¹⁴⁵ David Cannadine, 'Introduction', in David Cannadine (ed.), *Empire, the Sea and Global History*, 1-22.

¹⁴⁶ Lewis Johnman, and Hugh Murphy, 'Maritime and Business History in Britain: Past, Present and Future?', *International Journal of Maritime History*, XIX, no. 1 (2007), 241.

¹⁴⁷ Both oceanic analysis and studies from a global perspective share a common influence as their starting point, that of Braudel and the Annales School he led. See Magee and Thompson, *Empire and Globalisation*; Braudel, *The Mediterranean*.

¹⁴⁸ Peter A. Coclanis, 'Drang Nach Osten: Bernard Bailyn, the World-Island, and the Idea of Atlantic History', *Journal of World History*, 13, no. 1 (2002), 169-182.

¹⁴⁹ Bayly, *The Birth of the Modern World*, 1.

labour.¹⁵⁰ The great technological strides of the nineteenth century, in particular the railways, the steamship, and the telegraph, made the scale of the global increasingly more manageable, and thus a global framework of analysis an obvious option.¹⁵¹ Yet this is perhaps the most omitted period of global history, as scholars have primarily concentrated on the nascence of globalism and the consumer age.

Moreover, little is understood about the very nature of the networks and interactions, and the reality of the power structures that created and controlled them.¹⁵² Global history still requires a greater emphasis on the interactions and disconnections between oceanic and land networks, and the effect each had on the other. As van der Vleuten and Kaijser rightly assert, too often global history tends to assume the integrative power networks and infrastructure, without critically examining their development, or indeed maintenance, thus omitting their entanglement with wider changes from their histories.¹⁵³

Conclusions

Through assessing the fields of naval, imperial, and global history as they now stand, it is apparent that all three have not fully explored their links and connections with each other. In particular, there still exists a gap between the historiographies of the empire and navy in the nineteenth century, despite the close and fundamental links that exist.

¹⁵⁰ For examples of texts examining earlier periods, see Bailyn and Denault, 'Introduction', in Bailyn and Denault (eds), *Soundings in Atlantic History*; Jerry H. Bentley, 'Sea and Ocean Basins as Frameworks of Historical Analysis', *Geographical Review*, 89, no. 2 (1999), 215-224; Dirk Hoerder, *Cultures in Contact: World Migrations in the Second Millennium* (Durham, NC: Duke University Press, 2002); Linebaugh and Rediker, *The Many-Headed Hydra*; Pearson, *The Indian Ocean*.

¹⁵¹ Blank, 'The Pacific: A Mediterranean in the Making?', 265-277.

¹⁵² Trevor Burnard, 'The British Atlantic', in Greene and Morgan (eds), *Atlantic History: A Critical Appraisal*, 111-136.

¹⁵³ van der Vleuten and Kaijser, 'Introduction', in van der Vleuten and Kaijser (eds), *Networking Europe*, 7.

As a result of this disconnection, there has been little consideration in studies of global flows of how capital, goods, people, and ideas were allowed to pass largely unimpeded in the nineteenth century. Thus it is imperative to recognise the importance of the Royal Navy in the maintenance of *Pax Britannica*, and the boom in global flows that resulted. Furthermore, both commercial and naval ships relied on key physical infrastructure which allowed the processes, flows, and power projections possible. Despite this, no studies have truly explored how the huge changes in technology, international relations, and volume of trade in this period necessitated the establishment and maintenance of huge networks and infrastructure. To assume that these pieces of infrastructure merely appeared, remained static, and suffered no disruptions nor had any effects, is to exclude key questions about how the nineteenth century navy, empire, and world functioned.

Similarly, even considering its lack of glamour and controversy, that coal is largely absent from all three historiographies is surprising, as it is a commodity of utmost importance for navy, empire, and global trade and industry. It is, of course, particularly important for the navy, as this thesis explores, but was also a key commodity for industry, trade, and travel. There is clearly much scope, and much need, for an understanding of how networks and infrastructure facilitated the movement and use of this crucial fuel.

This thesis, therefore, seeks to fill some of these gaps, and also to point to approaches for further study. In this way, it not only illustrates the importance of naval coaling in terms of imperial defence, but also highlights the transnational and global infrastructure, oceanic flows of people and goods, and knowledge and power networks created by naval coaling. By doing so, moreover, it aims to understand how these networks and contact zones reconstituted those places and people who were part of, or touched by, these webs of connections.

Chapter 3: The Rise of Coal Consciousness: Imperial Philosophies, Knowledge, and Bureaucracy

The 1870s saw a dawning realisation about the crucial part that the security of coal and coaling infrastructure played in the protection of British interests abroad. What might be termed a 'coal consciousness' grew amongst government officials and naval experts as Britain entered the last decades of the nineteenth century, and this was especially augmented by the work of the Carnarvon Commission, which sat between 1878 and 1882. This was the first instance that an official body had attempted to assess and make recommendations for the permanent security of British shipping and naval fuel infrastructure. The coal question, as it became known, had consequences that went far beyond the navy, however, and this chapter explores how the development of coal consciousness and the work of the Carnarvon Commission can be situated in the wider context of the last quarter of the nineteenth century. In particular, it will assess how the coal question was intrinsically connected to and affected by changes in imperial politics, knowledge collection, and the state apparatus. Furthermore, it will assess how these wider changes allowed coal consciousness to develop from the writings of a small number of naval men into what could be considered a 'coaling consensus' by the 1890s and the effects this had, both on measures to alleviate the coaling problem, and on wider changes in imperial and domestic governance. By assessing these factors, it concludes that coal consciousness was more than just a reaction to these changes in politics and the state – it also played a part in profoundly changing them. Finally, it shows that the effects of a coaling consensus were wide-ranging. Not only were the measures that resulted from it a largely successful deterrent to attacks on British naval coal supplies, but the issues it raised were key to the establishment of important governmental bodies for imperial defence, naval intelligence, and mobilisation in war.

In assessing the wider context for the growth of a coaling consciousness, it is particularly important to see that it was intrinsically entwined with the effects of the decline of a liberal attitude to imperial defence.¹ This imperial indifference, almost ubiquitous in the mid-Victorian period, was conspicuous by colonial issues being given very little attention by politicians, except in times of significant crisis. Crucially, those in the top echelons of power, and especially Gladstone, 'appear[ed] not to have much time for the colonies' at all.² Instead, governments relied on the 'soft power' of diplomacy as a basis for imperial defence.³

The 1870s, however, marked the beginning of a loss of confidence in this liberal foreign policy, and the ascendant Disraelian Conservatism built on the issues of 'the Empire and social reform'.⁴ The development of this pro-imperial rhetoric in the Conservative party reflected the emergence of an imperial angle to domestic politics, and looked to exploit a heightened imperial sentiment in order to secure Britain's global pre-eminence. This pro-imperialism can largely be separated into aggressive foreign policy and a renewed interest in imperial defence, both caused by a growing fear of the expansion of Britain's rivals and a feeling that Britain was losing its prestige by neglecting the empire. Although both are connected, it is the attitudes towards imperial defence that best explains the rise of coal consciousness.

As well as the perceived strength of potential rivals, the reassessment of imperial defence was also influenced by the huge increase in Britain's merchant marine, which was viewed as vulnerable in a potential war. Fears over imperial defence were therefore not

¹ See J.P. Parry, 'Liberalism and Liberty', in Peter Mandler (ed.), *Liberty and Authority in Victorian Britain* (Oxford: Oxford University Press, 2006), 99; John M. MacKenzie, *Popular Imperialism and the Military, 1850-1950* (Manchester: Manchester University Press, 1992), 12.

² Stanley R. Stenbridge, *Parliament, the Press, and the Colonies, 1846-1880* (New York: Garland, 1982), 182.

³ T.G. Otte, 'The Foreign Office and Defence of Empire 1856-1914', in Greg Kennedy (ed.), *Imperial Defence: The Old World Order 1856-1956* (London: Routledge, 2008), 10.

⁴ Malcolm Pearce and Geoffrey Stewart, *British Political History, 1867-1990: Democracy and Decline* (London: Routledge, 1992), 74.

just limited to the safety of those areas under direct British rule, but included British and imperial interests worldwide, and most notably the maritime spaces used by British commercial interests.⁵ These worries were exacerbated by rapid changes in naval technology, which benefited not only Britain, but also its rivals. Improvements in warship design and efficiency increased the ability of foreign navies to wage war on an unprecedented scale and at a significant distance away from their home bases, escalating the risk to the British Empire at large.⁶

Such threats led to calls for urgent action to rectify weaknesses in imperial defence. The only way to remedy the situation, it was argued, was through an increase in defence spending, particularly for the Royal Navy, and the assertion of British power around its empire through the show of force.⁷ It was the navy that was the most important and obvious form of British power in the wider world, and thus it 'was intellectually, physically, symbolically and intuitively regarded as the embodiment of the martial nature of imperial defence'.⁸ An increase in defence spending therefore largely meant an increase in naval estimates. The most obvious use of this extra funding would be to provide a larger fleet of modern warships to perform these functions of defence, but there was also a need to ensure that this fleet could be adequately coaled and serviced throughout the British Empire. Thus, it was suggested that measures be taken to secure the supply of coal to the navy through the defence of Britain's far-flung naval and coaling stations.

It was these fears and mooted solutions that allowed coal consciousness to gain credence, and, moreover, placed coal at the centre of worries about imperial defence. Indeed, when these fears reached a peak during the Russian war scare of 1878, it was a perceived vulnerability of naval coal that was the focus of both the resultant bodies: the

⁵ Andrew Lambert, 'The Royal Navy and the Defence of Empire 1856-1918', in Kennedy (ed.), *Imperial Defence*, 115.

⁶ Greg Kennedy, 'The Concept of Imperial Defence 1856-1956', in Kennedy (ed.), *Imperial Defence*, 1.

⁷ Burroughs, 'Defence and Imperial Disunity', in Porter (ed.), *The Oxford History of the British Empire. Vol. 3, the Nineteenth Century*, 334.

⁸ Kennedy, 'The Concept of Imperial Defence 1856-1956', in Kennedy (ed.), *Imperial Defence*, 2.

Colonial Defence Committee and the Carnarvon Commission. The reports of these official government enquiries, especially the latter, were key catalysts to changes in imperial defence policy in the 1880s. These bodies were able to present a compelling case for an increase in funds to address the issue through the collection and organisation of a large amount of data about the coaling issue. By organising this data, the Carnarvon Commission created a formalised and legitimised coaling knowledge that endured as the basis of coal consciousness, and indeed largely as the basis of imperial defence strategy. This data included the current status of the defence of coal supplies for the navy, and the recommendations of experts. It is testament to the depth of analysis of the Carnarvon Commission that it remained the chief source for coaling knowledge, and indeed a much-cited source in discussions on wider imperial defence.

The creation of this coaling knowledge has led Peter Burroughs to describe the Carnarvon Commission as 'a turning point in official [imperial defence] policy', but this chapter will argue that although important, it was both a victim of Gladstone's attitude towards imperial defence, and then, in the mid-1880s, a beneficiary of wider support for action on imperial defences.⁹ That is not to say that the work of the Commission, not least the key details that were leaked to the press, did not have a significant impact on the shift away from Gladstonian attitudes towards imperial defence. However, the slow pace at which measures were implemented suggests that it merely acted as a catalyst for change. Although it was essential to the rise of coal consciousness, the Commission was not able to effect immediate change, and it was only through the presence of a Conservative majority after 1886 that a long-term spending strategy approximating its recommendations was achieved through the 1888 Imperial Defence Act.

That the Carnarvon Commission was not a turning point in imperial defence policy was largely a result of the return of Gladstone as Prime Minister while it was still producing

⁹ Burroughs, 'Defence and Imperial Disunity', in Porter (ed.), *The Oxford History of the British Empire*. Vol. 3, *the Nineteenth Century*, 335.

its reports. While the creation of a coaling knowledge was a powerful tool for those advocating coal consciousness, and later in creating a coaling consensus, it was also damaging for those exponents of a more Gladstonian, low-spending defence strategy. The ability of Gladstone's Liberals to suppress the Carnarvon Commission reports was crucial in the obstruction of any progress on the scale recommended in the findings. The suppression was temporary, however, with the leaking of confidential documents to the press severely weakening Gladstone's position. Because of this, it is imperative to note the role of the emerging field of investigative journalism, which sought to uncover issues seen to be in the public interest, as well as a general upsurge in enthusiasm for both the empire and the navy. As a result, there was no widespread press condemnation, even though the revelation of these reports represented a serious breach of government confidentiality. Indeed, a growing coaling consciousness began to question the idea of who could or should control knowledge, what was acceptable to publish, and what was in the public interest. This allowed the 'blue-water school', advocating huge naval expenditure, to gain the ascendancy, and, with the fall of Gladstone, spending on imperial defence increased accordingly and committees for imperial defence were established in the later 1880s.

Although these events allowed coal consciousness to develop into an almost complete coaling consensus, the coaling knowledge created by the Carnarvon Commission was static: a series of reports made by a non-permanent body. If coal consciousness was to be transformed into a coherent defence and infrastructural strategy after 1882, more permanent bodies were needed to constantly collect, collate and analyse data, which could then inform government actions. Thus developments within the state apparatus were necessary in order both to inform and carry out the policies of coaling defence. The growing need to implement and maintain the infrastructure and defence of coaling increasingly necessitated the creation of bodies with specialised roles. This was manifested through the Colonial Defence Committee and the Naval Intelligence Department, both

permanent standing government organisations which facilitated an ongoing debate about the defences and maintenance of coaling infrastructure, amongst other naval and imperial defence issues. Furthermore, these bodies allowed improvements in the interactions between bodies of government. The emergence of these specialist committees dealing with the coal question was not an isolated occurrence but can also be situated in the wider development and growth of what might be termed a modern state apparatus in the late nineteenth century.¹⁰ This was typified by two interrelated phenomena: a growth in government bureaucracy and increased specialisation in civil service positions. These changes were responses to the challenges faced by Britain as the nineteenth century came to a close. For imperial defence, it was the rise of coal consciousness that was a key part of the creation of these bodies, and thus we can see increasing concern about the coaling issue as a catalyst for the development of a more extensive imperial defence bureaucracy.

This chapter argues that it is imperative to see the wider context of the last quarter of the nineteenth century in order to understand the rise of coal consciousness. The coaling consensus that emerged in the later 1880s, and its important effects in terms of imperial defence and naval mobilisation, were not a simple result of concern about the safety of coaling in war. Instead, the acceptance of coal's importance in imperial defence was a result of a combination of interdependent changes in state, politics, and popular opinion. Indeed, the resultant formation of bodies to consider the coaling issue, and the subsequent high naval spending that occurred, were profoundly advanced and impeded by party politics, economics, and popular views of imperial and naval weakness.

¹⁰ See, for example, James C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven, CT: Yale University Press, 1998). For a history of the Admiralty, see Hamilton, *The Making of the Modern Admiralty*.

Development of Pro-Imperial Politics and Coal Consciousness

The repeal of the Corn Laws in the 1840s led to around thirty years of British commercial success, creating a general confidence in the political-economic orthodoxy of free trade. As part of this policy, Britain began to drive down defence costs around the empire.¹¹ As the Marquess of Salisbury remarked in 1877, 'English [foreign] policy is to float lazily downstream, occasionally putting out a diplomatic boat-hook to avoid collisions'.¹² Britain's imperial position began to change in the 1870s, however, and E.H.H. Green has argued that, to reflect this, the Conservative Party under Benjamin Disraeli reinvented itself as the 'imperial party'.¹³ This was epitomised by Disraeli's Crystal Palace speech of 1872 where he announced that one of the aims of his party was 'for maintaining the greatness of the kingdom and the empire'.¹⁴ The 'mid-Victorian liberal consensus', in which both parties had accepted free trade economics and a detached foreign policy, was at an end.

The popularity of the Conservative reinvention and subsequent pro-imperial rhetoric was a result largely of a growing sense of 'imperial crisis'. Unease had arisen from unrest in the formal and informal empires, including major rebellions in Jamaica and New Zealand in the 1860s, which had seemingly been exacerbated by concurrent troop withdrawals from the self-governing colonies. This acute imperial anxiety was heightened by the growth of other powers, both in a commercial and in a military sense. This led to what have often been seen as defensive annexations, prompted by fear of a rival power

¹¹ E.H.H. Green, *The Crisis of Conservatism: The Politics, Economics, and Ideology of the Conservative Party, 1880-1914* (London: Routledge, 1995), 2.

¹² Pearce and Stewart, *British Political History*, 143.

¹³ Green, *The Crisis of Conservatism*, 67-69.

¹⁴ Disraeli suggested that the working classes 'are for maintaining the greatness of the kingdom and the empire, and they are proud of being subjects of our Sovereign and members of such an Empire. Well, then, as regards the political institutions of this country, the maintenance of which is one of the chief tenets of the Tory party, so far as I can read public opinion, the feeling of the nation is in accordance with the Tory party'. Speech at banquet of the National Union of Conservative and Constitutional Associations, Crystal Palace, London (24 June 1872), cited in 'Mr. Disraeli at Sydenham,' *The Times*, 25 June 1872.

taking control of territories and denying Britain access to its trade.¹⁵ There was, therefore, a growing discontent towards a Liberal foreign policy that appeared to be based on peace at all costs, which Disraeli termed as Gladstone's 'strange mania for eating dirt' and his policy of 'living in a blaze of apology'.¹⁶ While extra-European foreign policy had not been an electoral issue in the mid-nineteenth century, the development of an 'imperial angle' to European politics in the 1870s changed this. Disraeli's ability to exploit this move away from eurocentricism in the popular consciousness meant that Gladstone's imperial policies soon became synonymous with 'penny-pinching commercialism', and the Conservatives were returned to power in the 1874 election with their first absolute majority since the 1840s.¹⁷

The emerging imperial awareness in Britain, epitomised by the rise of the newly pro-imperial Conservative Party, also coincided with the emergence of 'coal consciousness', which developed steadily in the second half of the 1870s. This was initiated by naval thinkers concerned by the defensive and infrastructural problems caused by the widespread use of steam battleships from the early 1870s. Unlike sail ships, steamships required constant expert maintenance and, most importantly, fuel.¹⁸ Those advocating an awareness of these issues, emphasised not only the importance of a good supply of coal, but also argued that the security of coal supplies in war was of paramount importance, as they would undoubtedly be a target for enemy cruisers. John Beeler suggests that because of these worries, by the mid-1870s there existed a 'body of doctrine on the connection between Empire, trade, coal and defence'.¹⁹ There appeared to be good reason for these

¹⁵ Green, *The Crisis of Conservatism*, 67.

¹⁶ Pearce and Stewart, *British Political History*, 39.

¹⁷ Anna Gambles, *Protection and Politics: Conservative Economic Discourse, 1815-1852* (London: Royal Historical Society, 1999), 230; J.P. Parry, *The Politics of Patriotism: English Liberalism, National Identity and Europe, 1830-1886* (Cambridge: Cambridge University Press, 2006), 3-10.

¹⁸ The importance of dry docks has been discussed in Andrew Lambert, 'Economic Power, Technological Advantage, and Imperial Strength'.

¹⁹ Beeler, 'Steam Strategy and Schurman', in Kennedy, Neilson, and Schurman (eds), *Far-Flung Lines*, 326.

fears. The devastating activities of the Confederate SS *Alabama* in the American Civil War showed how effective single cruisers could be even against superior navies, and Britain appeared to be vulnerable to this kind of attack, especially in its wider empire. Bar the Imperial Fortresses of Halifax, Bermuda, Gibraltar, and Malta, few naval coal depots had any defences at all, and thus it was feared that even a few enemy cruisers could cripple the ability of the Royal Navy to refuel in large parts of the world.²⁰

In the mid-1870s only a small minority of navalists, led by Sir J.C.R. Colomb and Sir Alexander Milne, fully grasped the implications of the naval coaling problems Britain would face in the event of war. Colomb, a prolific writer on naval strategy had, as early as 1867, recognised 'the fact that modern trade movements and modern society depended on the constant abundance and availability of coal'. He advocated an organised chain of coaling stations with adequate defences. This would ensure the 'wartime availability of coal supplies which would enable the squadron to operate effectively while at the same time denying these coaling facilities to enemy cruisers'.²¹ However prescient his ideas, Colomb had no official governmental role, and thus his concerns remained marginal. Milne, however, who served as First Naval Lord in 1866-1868, and again in 1872-1876, held much more influence as a central figure in the Admiralty.²² Advocating similar ideas to Colomb, he suggested that 'coaling stations would be the great problem in a future war and they must be maintained and extended ... We could get no coal except from our own colonies, where new depots would have to be established'.²³

Despite his position, Milne could do little to promote coal consciousness in higher governmental circles, as the Admiralty had limited influence over government policy. This was perhaps exacerbated by the fact the Admiralty itself could not present a united front

²⁰ See, for example, 'Memorandum on Colonial Defences', TNA, CO 537/208.

²¹ Quoted in Beeler, 'Steam Strategy and Schurman', in Kennedy, Neilson, and Schurman (eds), *Far-Flung Lines*, 33.

²² *Ibid.*, 34.

²³ Milne, quoted in *ibid.*, 34.

on the issue; the rapid technological change in warships led to a great deal of uncertainty and disagreement about the future of the steam fleet. Even Milne himself had advocated a return to sail to deal with the coal question.²⁴ This lack of cohesion, Donald Schurman has suggested, meant that the Admiralty's 'representatives on the Defence Committee lacked the wit or interest to advise the fortification experts on naval needs'.²⁵

The Admiralty's attitude towards coaling station defence is perhaps best summarised by the fact it considered it to be a question of land defence and therefore to be outside of its responsibilities, effectively passing the issue to the War Office. Indeed, it was the War Office which, through the then Deputy Director of Works, Sir William Jervois, published *The Defenceless Condition of our Coaling Stations and Naval Establishments Abroad* in 1875. Jervois had the backing of his immediate superior, the Inspector General for Fortifications, Sir J.L.A. Simmons, but the enthusiasm for coaling station defence did not extend to the top echelons of the War Office. Indeed, the Defence Committee, headed by the Duke of Cambridge, rejected the suggestions he made outright. Cambridge, an army man who often ignored the whims of the Cabinet, gave short shrift to anything except home defence, and thus the concept of spending funds on the defence of coaling stations fell on deaf ears.²⁶ This attitude reflected the accepted governmental imperial policy of the mid-Victorian liberal consensus – foreign policy was Eurocentric, and moreover mostly concerned with the defence of Britain itself, based on the belief that Britain's naval supremacy was assured, as it had been since 1815.

This standpoint was understandable, due to the enormous success of an imperial indifference in the mid-Victorian period, and this acted as the greatest obstacle against implementing hugely expensive recommendations for coaling station defence. Britain had successfully avoided large-scale war on the continent since 1856, and with its battleship

²⁴ Ibid.

²⁵ Schurman and Beeler, *Imperial Defence*, 55-56.

²⁶ Ibid., 48-49.

fleet unchallenged until the 1880s, an unwillingness (especially by the Liberals) to invest in the Royal Navy and its infrastructure had allowed Britain to spend little on defence while remaining in control of a large empire.²⁷ Andrew Lambert suggests this allowed careful control of naval estimates, while developing the 'core capabilities of a true global strategy'.²⁸ Furthermore, by restricting funds given to 'non-productive activities, like defence', the government could lessen the tax burden on private enterprise, the lifeblood of the imperial and British economy.²⁹ Thus, although Jervois' report was published during the first government of Disraeli's newly imperial Conservatives, there was little enthusiasm to address hugely expensive imperial defence issues from them.

By the late 1870s, however, the growing threat from rival European navies to Britain's hegemony of the oceans was creating cracks within the consensus over liberal foreign policy. These tensions came to a head with the Eastern Crisis, which peaked in 1877-1878, and made a large-scale war involving Britain a real possibility for the first time since 1856. The gradual and protracted disintegration of the Ottoman Empire led to a fear of Russian aggression towards Britain in the eastern Mediterranean, with the possibility of a pincer movement from France. This was a particular worry to Britain, which had huge amounts of trade travelling through the Suez Canal, increasing the importance of protecting commerce in the eastern Mediterranean, and the potential danger to the trade of India made the issue even more fraught. For many, the clear threat to Britain and its interests made free trade and minimal military and naval intervention, both at the core of liberal economics, seem incompatible. To protect trade, navalists increasingly suggested that Britain would have to both escalate defence spending and make its presence felt in the

²⁷ Beeler, 'Steam Strategy and Schurman', in Kennedy, Neilson, and Schurman (eds), *Far-Flung Lines*, 41-44; Lambert, 'The Royal Navy: 1856-1914', in Neilson and Errington (eds), *Navies and Global Defense*, 74; Jeremy Black, *The British Seaborne Empire*, 209.

²⁸ Lambert, 'Economic Power, Technological Advantage, and Imperial Strength'.

²⁹ George Peden, 'The Treasury and Defence of Empire', in Kennedy (ed.), *Imperial Defence*, 73. By doing so, successive governments were also able to pursue a liberal economic policy, fundamental to which was low taxation. See, for example Philip Harling, 'The Powers of the Victorian State', in Mandler (ed.), *Liberty and Authority in Victorian Britain*, 28.

Mediterranean.³⁰ To achieve these aims there was a clear need to continue the naval reforms undertaken by the Admiralty in the late 1860s. Although these earlier reforms had cut costs and improved efficiency, which had complemented the dominant mid-Victorian liberal ideology, those seeking naval reform in the late 1870s were also looking for investment in new warships, improvement of docks, and increased naval defences in order to maintain Britain's naval advantage. All three were costly and thus required an escalation in defence estimates. Increasingly, naval reform became incompatible with the low defence spending at the core of the mid-Victorian liberal consensus.

Although the Conservative government, and in particular the Defence Committee, had consistently rejected War Office plans for the defence of coaling stations, reaction to the Eastern Crisis shook their liberal imperial indifference to its core. This was because, as Beeler has argued, the crisis 'caught the Empire woefully unprepared'.³¹ Even if the Russian threat was wholly military, as it had no fleet in the Black Sea or Mediterranean in 1877-78, the situation in the Eastern Mediterranean was still of grave concern to the British. During the crisis the Royal Navy had 'proved practically useless' and Britain had been shown to be unable to act unilaterally in the defence of its imperial possessions.³² This fear of Russian aggression in the Eastern Mediterranean and the perception of British naval weakness allowed navalist agendas to come to the fore, and thus pressure built to act on coaling station defence.

This pressure came not only from navalists but also from commercial shipping companies, which would suffer immeasurably should Britain lose control of the ocean in a

³⁰ Peter Baldwin, 'The Victorian State in Comparative Perspective', in Mandler (ed.), *Liberty and Authority in Victorian Britain*, 65; Simon Gunn and James Vernon, 'Introduction', in Simon Gunn and James Vernon (eds.), *The Peculiarities of Liberal Modernity in Imperial Britain* (Berkeley, CA: University of California Press, 2011), 8.

³¹ Beeler, 'Steam Strategy and Schurman', in Kennedy, Neilson, and Schurman (eds), *Far-Flung Lines*, 35; Roger Parkinson suggests that this is the closest Britain came to war in the period 1856-1914: Parkinson, *The Late Victorian Navy*, 41.

³² Otte, 'The Foreign Office and Defence of Empire 1856-1914', in Kennedy (ed.), *Imperial Defence*, 11.

potential war. Sir Donald Currie, the owner of the Castle Mail Packet Company plying the route to South Africa, used his 1877 lecture to the Royal United Services Institute entitled 'Maritime Warfare: The Importance to the British Empire of a Complete System of Telegraphs, Coaling Stations and Graving Docks' to reiterate the arguments that had been put forward by Milne and Colomb in previous years. Currie emphasised the potentially crippling possibility of not defending naval coal and asked the question of the government: 'in the event of war, will not the enemy be able to step in and help themselves with coal, and perhaps destroy the remainder?'³³ Currie's interest in the coaling question reflected how naval coaling affected both the navy and the merchant marine. Shipowners were particularly concerned about how an inability to coal warships might remove the Royal Navy's protection of British maritime trade, leaving it vulnerable to the predations of rival powers. Thus, in order to guarantee access to trade, they generally supported anything that would maintain Britain's maritime hegemony, and consequently were in favour of increases in naval power and British territorial expansion.³⁴

More importantly, the government's attitude towards coaling defence was increasingly questioned in Whitehall, and a further paper advocating coaling station defence was produced by the Secretary of the Duke of Cambridge's Defence Committee, C.H. Nugent.³⁵ The 'Memorandum on the Relative Importance of Coaling Stations' was particularly noteworthy for developing the speculative writings of Milne and Colomb by attempting to assess the importance of individual overseas stations to the navy and British interests; and then determining which stations' defences should take precedence. The paper's use of a logical preferential system, based on a station's proximity to trade, British fleets, and likely sources of enemy attack, was further developed by Sir J.L.A. Simmons, the

³³ The lecture was published as Donald Currie, *Maritime Warfare: The Importance to the British Empire of a Complete System of Telegraphs, Coaling Stations and Graving Docks. A Lecture* (London: Harrison and Sons, 1877).

³⁴ A.N. Porter, *Victorian Shipping, Business, and Imperial Policy: Donald Currie, the Castle Line, and Southern Africa* (Woodbridge: Boydell, 1986), 7-8.

³⁵ C.H. Nugent, 'Memorandum on the Relative Importance of Coaling Stations', TNA, PRO 30/6/122.

Inspector General of Fortifications, when he drew up plans for the defence of coaling stations in 1877. The resulting report recommended an unprecedented amount be spent on permanent defences, some £2,297,412, and was ratified by the Defence Committee, but rejected by the Conservative government.³⁶ Despite this rejection, the issue did not disappear, but was championed by the Colonial Secretary, Lord Carnarvon, who took a lasting interest in the coaling debate.

Despite failing to convince his government colleagues to increase expenditure for naval defences, Carnarvon was able to use his position to push for interdepartmental consideration of the coaling question, making significant progress towards a proper assessment of the issue. This progress was assisted by a deepening sense of urgency surrounding the government's foreign policy resulting from the effects of the Eastern Crisis. A disagreement with Disraeli over the government's support of the Ottoman Empire, however, forced Carnarvon's resignation from the Colonial Office. By then, though, his influence had ensured that discussions with the War Office about the defence of coaling infrastructure had reached such a stage that soon after his replacement, Sir Michael Hicks-Beach, had been installed the Colonial Defence Committee was formed.³⁷

The Colonial Defence Committee

The Colonial Defence Committee met for the first time on 5 March 1878 and, less than a month later, on 4 April, it submitted four short reports, totalling thirty pages, to the Under-Secretary of State for the Colonies. Despite their brevity, they were geographically wide-ranging. The first report covered the defences of the Indian Ocean stations of Cape of Good Hope, Mauritius, Ceylon, Singapore, and Hong Kong. The second concentrated on the Australian colonies, Tasmania, and New Zealand. The third made recommendations for

³⁶ Schurman and Beeler, *Imperial Defence*, 55-56.

³⁷ *Ibid.*, 61-63.

Esquimalt and Victoria, British Columbia. The fourth reported about the defences of Heligoland, St Helena, Sierra Leone, Barbados, Jamaica, and Newfoundland. A further report, totalling five pages, was published separately in May, and made recommendations for the defences of the principal Canadian Atlantic ports.³⁸

To produce these reports in such a short time required the Committee to use a great deal of existing knowledge. Indeed, after it was set up, Milne, who was leading the Committee, was quick to meet with the Director of Artillery and Stores, Major-General Campbell, to establish what existing armaments could be sent. The Committee then used a combination of Colonial Office figures and telegraphic replies from colonial governors to establish the numbers of existing militia, armaments, and defensive works at each station. Once these facts had been established, the Committee set to work on its recommendations.³⁹ It was not just the figures that were gleaned from elsewhere – many of the Committee's recommendations were taken from existing reports on the defence of naval stations, in particular those produced for various colonies by Major-General Sir William Jervois and Lieutenant-Colonel Peter Scratchley.⁴⁰

The instigation of the Committee, and the publication of the reports it produced, initially appeared to be a key moment of progress for those advocating a better-funded and well-managed system of imperial defence. Indeed, it was the first real concerted effort at providing recommendations, many at high expense, for a complete system of coaling station defence – very different from the apathetic attitude which had been the mid-century norm. The costs were equally as ambitious: even without accounting for the provision of garrisons, the estimation of the Committee for the temporary defence of the twelve most important coaling stations came to £2,300,000. This amount was huge,

³⁸ 'Reports and Correspondence of the Colonial Defence Committee', TNA, CAB 7/1.

³⁹ 'Correspondence Respecting the Defences of the Colonies', TNA, CAB 7/1.

⁴⁰ Peter Dennis, *The Oxford Companion to Australian Military History* (Oxford: Oxford University Press, 1995), 163.

considering total annual naval estimates were around £11,000,000.⁴¹ Moreover, the make-up of the committee suggested its findings would be prescient and far-reaching. Particularly significant was the presence of two of the key navalist agitators, Milne, representing the Admiralty and leading the commission, and Simmons as the representative of the War Office. As the War Office was responsible for the defence of coaling stations, it was imperative that a senior and experienced representative was on the Committee and Simmons had not only published papers on the defence of coaling stations, but also had huge military and diplomatic experience. His presence did, however, guarantee that the recommendations would largely be based on physical fortifications, rather than naval strategy.⁴² They were joined by a veteran of the Colonial Office, Henry Barkly, 'one of the most experienced of imperial officials in handling responsibly governed colonies'.⁴³ The Committee was thus well versed in the magnitude of the problem they faced. Simmons warned:

In the absence of such positions being provided with adequate means of defence, the operations of H.M.'s fleets for the protection of the vast interests of Great Britain, commercial as well as political, all over the world, might possibly have been greatly embarrassed, if not crippled, even by a few cruisers handled with activity and energy.⁴⁴

Despite these factors, it would be misleading to suggest that the Colonial Defence Committee had a decisive impact, even more so to propose that it marked the end of a detached imperial policy. From the outset it faced difficulties that fundamentally lessened

⁴¹ British Parliamentary Papers, 1878 (26) *Navy estimates for the year 1878-79, with appendix. [Account of naval old store moneys and extra receipts in 1876-77]*.

⁴² R.H. Vetch, 'Simmons, Sir John Lintorn Arabin (1821–1903)', rev. James Lunt, *Oxford Dictionary of National Biography*, Oxford University Press, 2004; online edn, Jan 2008 [<http://www.oxforddnb.com/view/article/36094>, accessed 3 July 2012].

⁴³ John Benyon, 'Barkly, Sir Henry (1815–1898)', *Oxford Dictionary of National Biography*, Oxford University Press, 2004; online edn, Jan 2008 [<http://www.oxforddnb.com/view/article/1424>, accessed 25 Oct 2011].

⁴⁴ 'Memorandum of Inspector General of Fortifications', TNA, CO 537/208.

its ability to significantly influence governmental policy. The feeling of imminent threat, and thus a need for immediate action on coaling station defence, meant the recommendations, far from representing a considered and long-term approach to an empire-wide system of defence, were short-term, limited, and often farcical. The failure of the Committee to provide proposals that measured up to its original purpose was further hampered by only having three members, lacking the workforce to consider effectively the complexity and depth of the problem. Like the recommendations, the subsequent works, where they were carried out, were ad hoc responses. The report highlighted the 'deplorable state of the defences of our principal coaling stations and colonial ports in our colonies', but years of neglect meant there were few armaments actually to send.⁴⁵

It would be wrong to suggest that these factors made the Committee completely valueless, however. Perhaps its greatest legacy was a result of its own inadequacy, showing that this was not a problem that could be solved with stop-gap measures and low spending, which had served Gladstone so well in the mid-Victorian period. Indeed, the Committee suggested 'the question of Colonial defence should be considered as a whole with reference not only to the works and their armaments but also to the forces necessary for manning them'.⁴⁶ Thus, although the Colonial Defence Committee did not mark an end to the issue of coaling station defence, it laid the foundations for how such a problem might be approached. To this end, Schurman has argued that the development and implementation of a system of imperial defence in the last fifteen years of the nineteenth century 'owed much to [the] Colonial Defence Committee', laying down many of the principles of imperial defence, in particular the concept of interdepartmental and inter-colonial co-operation.⁴⁷ Indeed, the interdepartmental nature of the Committee and the recognition of the need for a wider, integrated vision of imperial defence anticipated the

⁴⁵ Ibid.

⁴⁶ Ibid.

⁴⁷ Schurman and Beeler, *Imperial Defence*, 63.

committees for imperial defence from the late 1880s onwards, when there was popular support for imperial defence, and the imperialist Conservatives dominated government.⁴⁸ Furthermore, the co-operation between departments of the British Government and those of its self-governing colonies exhibited in the Committee could be seen as the beginnings of the movement towards a more integrated empire manifested through defence policy, something which gained momentum years later.⁴⁹

The Committee could not achieve an integrated system of imperial defence despite establishing these principles, however, as to do so required permanent, dedicated, and well-funded bodies that could manage a structure that was expensive and complex to implement and maintain. Indeed, without rejecting the liberal philosophy of low imperial defence spending, the issue of a permanent defensive system would remain unresolved.

The Establishment of the Carnarvon Commission

Once the Eastern Crisis had passed, the Colonial Defence Committee was dissolved, and no more reports were made. Nevertheless, the Committee had made enough of an impression that the Colonial Office did not abandon the issue. It suggested that:

It is now proposed that a new Committee or Commission should be appointed to take up the questions left unsettled by the old Committee, and to advise as to the means which should be adopted for converting the temporary defences into permanent defences, and with respect to the provision of adequate garrisons and other accessories for them.⁵⁰

⁴⁸ For example, the permanent Colonial Defence Committee founded in 1885.

⁴⁹ 'Memorandum of Inspector General of Fortifications', TNA, CO 537/208; Brian P. Farrell, 'The Dominions and Imperial Defence 1856-1919', in Kennedy (ed.), *Imperial Defence*, 263.

⁵⁰ 'Carnarvon Commission Correspondence', TNA, CO 323/356.

Following this suggestion, the new Conservative Colonial Secretary, Sir Michael Hicks-Beach announced the creation of Royal Commission on the Defence of British Possessions and Commerce Abroad in early September 1879. The Royal Commission is usually referred to as the Carnarvon Commission after its head who had remained interested in the naval coaling issue, but was now free of an official position.

The lack of impact caused by the Colonial Defence Committee meant that the instigation of a new enquiry was by no means a certain development. Thus its formation suggests a level of concern within the government about the coal question.⁵¹ Certainly, the Commission could be viewed as merely a way to shelve the issue for a few years, but to do this it would have been far easier to have simply ignored the findings of the Colonial Defence Committee, as there was little public clamour for action. In fact, to instigate such a process without genuine concern would certainly have been politically reckless. It was highly likely such a commission would make expensive recommendations, and this would either force an increase defence spending, or question the effectiveness of the government to defend the empire properly. As there was little room to manoeuvre with budgets in the late 1870s, as substantial deficits and war caused problems with the Treasury, such an increase in defence spending would cause an inevitable increase in taxation, making such a commission a real electoral risk.⁵² The most obvious purpose for instigation of the

⁵¹ In their study of Royal Commissions, Hugh Clokie and J. William Robinson have suggested other reasons why a government may wish to instigate such an investigation. While these factors are quite general, they provide a useful toolbox with which to assess the different motives behind both the Conservatives initiating the Carnarvon Commission. See Hugh M. Clokie and J. William Robinson, *Royal Commissions of Inquiry: The Significance of Investigations in British Politics* (London: Octagon Press, 1969), 75, 123.

⁵² Such an ambitious defence plan was always going to be expensive. Even with popular support, as the Conservatives had when they returned to power in the 1880s, an increase in defence spending was only made possible by careful management of the Treasury, with the liquidation of war debts in 1885 was followed by a conversion of the national debt in 1888. Combined with limited military activity, this allowed the Government to spend heavily without having to raise taxes. See Sumida, *In Defence of Naval Supremacy*, 12-14; Lambert, 'Economic Power, Technological Advantage, and Imperial Strength'.

Commission, therefore, appears to have been to expose and address an issue that the government felt could not continue to be ignored.⁵³

That a Royal Commission was chosen as the means to investigate the defence of coaling stations seems to suggest lessons had been learnt from the Colonial Defence Committee, which had shown that such an ambitious enquiry required substantial resources. Thus, in order for the government to assess the coal question properly, using expert opinion, it needed an independent body to investigate the matter, as it felt that the Cabinet did not have the time, expertise, or inclination to settle the matter itself.⁵⁴ This reasoning is supported by the fact that Hicks-Beach could not deal with the coal question himself, being far too engaged in efforts to restrain the ambitions of Sir Bartle Frere, the High Commissioner at the Cape, who was keen to extend British interests in South Africa.⁵⁵

The instigation of a Royal Commission to investigate this specific problem was not unusual as their use had notably increased in the nineteenth century as a whole.⁵⁶ The Carnarvon Commission was one of 388 Royal Commissions that occurred between 1830 and 1900, the 'heyday of the Royal Commission'.⁵⁷ By their nature, these Commissions were transient and ad hoc, responding to a particular problem or policy. Thus it is difficult to assess how 'typical' the Carnarvon Commission was, as such a thing does not exist, but in terms of length it was not particularly long at three years and in terms of personnel it was unexceptional with eight members.⁵⁸ In essence, these details merely reflected what the

⁵³ Oliver MacDonagh, 'The Nineteenth Century Revolution in Government: A Reappraisal', in Peter Stansky (ed.), *The Victorian Revolution: Government and Society in Victoria's Britain* (New York: New Viewpoints, 1973), 13, suggests more specifically that 'the most common origin of this sort of process was the exposure of a social evil', but this can be extended in this case to include dangers to British security.

⁵⁴ Clokie and Robinson, *Royal Commissions of Inquiry*, 123.

⁵⁵ Martin Pugh, 'Beach, Michael Edward Hicks, first Earl St Aldwyn (1837–1916)', *Oxford Dictionary of National Biography*, Oxford University Press, 2004; online edn, May 2010 [<http://www.oxforddnb.com/view/article/33859>, accessed 3 July 2012].

⁵⁶ Clokie and Robinson, *Royal Commissions of Inquiry*, 201.

⁵⁷ *Ibid.*, 75.

⁵⁸ Seventeen Royal Commissions between 1850 and 1914 had lasted six years or longer. The membership of Royal Commissions had numbered between a single member and twenty-one in this period. *Ibid.*, 202.

government deemed appropriate for the purposes of the work in hand, and this allowed the Commission to collect a large, but manageable amount of data, without the issue being confused by a body which was too unwieldy.⁵⁹ Even if the make-up or length of the Commission were unremarkable, its subject matter and scope were unprecedented. Royal Commissions on imperial matters made up less than a tenth of the total that sat between 1860 and 1935, some thirty from 328, and amongst those, there was only one other Commission that dealt with a large proportion of the empire.⁶⁰ Furthermore, the nascence of self-governing colonies, and subsequently dominions, meant that from 1887 topics which would have previously come under the auspices of Royal Commissions instead were dealt with by Colonial (later Imperial) Conferences, and thus it was the last such Commission to deal with imperial defence as a whole.⁶¹

Royal Commissions were particularly important to the state, especially in reacting to pressing issues, allowing matters to be examined by those with 'specialist knowledge and consideration' who could offer 'trained minds, impartial judgement, and disinterested study'.⁶² They also offered the opportunity to gather raw data and to formalise it into 'knowledge'. Tacit knowledge of coaling station defence existed in the 1870s through the works of naval thinkers and the various local colonial reports that had been produced, but this lacked any real authority.⁶³ Importantly, therefore, we can see that the Carnarvon Commission allowed data and tacit knowledge about imperial coaling to be formalised and made authoritative.

⁵⁹ Ibid., 156-158.

⁶⁰ Figures taken from those listed under 'Colonial and Dominion Problems' in Bernard Luthard Gabine and Arthur Harrison Cole, *A Finding-List of British Royal Commission Reports: 1860 to 1935* (Cambridge, MA: Harvard University Press 1935).

⁶¹ Arthur Harrison Cole, *A Finding-List of Royal Commission Reports in the British Dominions* (Cambridge, MA: Harvard University Press, 1939).

⁶² Ibid., 2-4.

⁶³ Perhaps most prolific in planning defences was William Jervois, a key military engineer of the period, who produced, in 1875, a report with suggestions for security of inadequately defended naval bases and coaling stations, entitled *The Defenceless Condition of Our Coaling Stations and Naval Establishments Abroad*, as well as local defence plans in Australasia.

The Recommendations of the Commission

Much more than the Colonial Defence Committee, the Carnarvon Commission represented a change in approach for imperial defence policy. A great deal of the importance of the Carnarvon Commission lay not in its originality, as it largely built on the foundations laid by the Colonial Defence Committee, but in its make-up, depth of research, and, in particular, its attempts to make long-term recommendations which could cope with most future eventualities. Much of this lay in that fact that importantly, unlike its predecessor, it was far larger and therefore more suited to its task.

Although Milne may have felt aggrieved not to have led the Commission after heading the previous Committee, Carnarvon, as a former Cabinet minister, held much more political clout, which was imperative if the reports were to be taken seriously. Carnarvon was perhaps a risky choice for Disraeli, who had already had serious disagreements with the former Colonial secretary that had twice led to Carnarvon's resignation. A critic of Disraeli's 'false imperialism', which he deemed militaristic and continental, Carnarvon advocated what he saw as a 'true' imperialism which spread the benefits of European civilisation, allying him with some Liberals. Indeed, Carnarvon was widely seen as 'more of an aristocratic whig than a party man, attracting enemies among his colleagues for his independence of thought'.⁶⁴ While he may have not always toed the party line, he had performed well enough during his two terms as Colonial Secretary for Disraeli to feel sufficiently comfortable to leave colonial policy largely to him. Carnarvon's experience of dealing with colonial representatives, having been heavily involved in the federation of Canada and an unsuccessful attempt to federate South Africa, was undeniably crucial to a

⁶⁴ P.J. Cain, 'Radicalism, Gladstone, and the Liberal Critique of Disraelian "Imperialism"', in Duncan Bell (ed.), *Victorian Visions of Global Order: Empire and International Relations in Nineteenth-Century Political Thought* (Cambridge: Cambridge University Press, 2007).

Royal Commission that would have to gather such a large amount of colonial data.⁶⁵ Moreover, his stance on the federation of colonies also suggested that he would aim to create an integrated and empire-wide defence policy for coaling infrastructure.

Continuity was assured by the presence of Milne, Simmons, and Barkly. Once again, Captain Jekyll served as Secretary. The appointment of Barkly in particular suggests that Carnarvon was more concerned about expertise than personal relationships between those on the Commission: they had previously shared a fairly hostile relationship when they had worked closely together as High Commissioner of South Africa and Colonial Secretary.⁶⁶ The rest of the Commission was largely chosen by Carnarvon.⁶⁷ As was customary with cross-party commissions, although headed by the Conservative Carnarvon, the Commission also included two Liberals, Hugh Childers and Thomas Brassey, both of whom had a keen interest in the modernisation and reform of the Admiralty and Royal Navy. Childers had used his time as First Lord of the Admiralty (1868–1871) to improve both the administration and the economy of the Admiralty, and to implement a new programme of ironclad production.⁶⁸ Brassey was instrumental in the transformation from a sail to a steam navy and had written widely on the navy, especially over his concern about its size and strength.⁶⁹ While both were members of the Liberal party, neither had much time for party politics, and rarely involved themselves in anything but naval matters in Parliament. It is particularly important, therefore, to highlight that not all Liberals adhered to the orthodoxy of the mid-Victorian liberal foreign policy, based on decreasing naval budgets and a concentration on home waters, while keeping foreign intervention to a minimum.

⁶⁵ Peter Gordon, 'Herbert, Henry Howard Molyneux, fourth earl of Carnarvon (1831–1890)', *Oxford Dictionary of National Biography*, Oxford University Press, 2004; online edn, Jan 2008 [<http://www.oxforddnb.com/view/article/13035>, accessed 3 July 2012].

⁶⁶ Gordon, 'Herbert, Henry Howard Molyneux'; Benyon, 'Barkly, Sir Henry'.

⁶⁷ 'Carnarvon Commission Correspondence', TNA, CO 323/356.

⁶⁸ William Carr, 'Childers, Hugh Culling Eardley (1827–1896)', rev. H.C.G. Matthew, *Oxford Dictionary of National Biography*, Oxford University Press, 2004; online edn, Jan 2008 [<http://www.oxforddnb.com/view/article/5296>, accessed 13 March 2012].

⁶⁹ V.W. Baddeley, 'Brassey, Thomas, first Earl Brassey (1836–1918)', rev. H.C.G. Matthew, *Oxford Dictionary of National Biography*, Oxford University Press, 2004; online edn, May 2006 [<http://www.oxforddnb.com/view/article/32047>, accessed 13 March 2012].

Indeed, growing worries about Britain's naval strength and the emerging threat of Britain's maritime rivals increasingly led some Liberals to question Gladstone's stance on foreign policy and imperial defence. The final politician on the Commission, Henry Holland, was another Conservative MP, but was probably more notable in this context for serving as a legal adviser at the Colonial Office, and Assistant Under-Secretary for the Colonies while Carnarvon was in office.

There were, therefore, two notable features of those Commissioners with political ties. The first, and most important for the success of the Commission, was that they had experience of the three most relevant offices of government: the Admiralty, War Office, and Colonial Office. Secondly, none appeared to have much interest in toeing the party line, but held their own views on either foreign policy or the navy, reducing potential tensions. In fact, the Commission shared a largely similar colonial and naval vision for Britain, one of increased naval spending and a worldwide defence strategy, which certainly shaped the Commission's reports. In fact, little changed in terms of the Commission's outlook even when both Brassey and Childers returned as part of the newly elected Liberal government in 1880 as Civil Lord of the Admiralty and Secretary of State for War respectively. Their replacements – the Earl of Camperdown and Samuel Whitbread – again Liberals, had both served as Civil Lord of the Admiralty. Although perhaps less high profile, they were, again, both men with considerable experience in naval matters, and thus the dynamic of the Commission was changed little.

The only member of the Commission who would potentially be opposed to this vision was Sir Robert Hamilton, who represented the Treasury as a financial expert, and whose job was largely to limit spending estimates as much as possible. He was well suited to this task, widely being seen as one of the most able civil servants of his era, and had already had experience serving on the Playfair Commission.⁷⁰ Furthermore, as Accountant-

⁷⁰ This looked into reform of the Civil Service and sat 1874–75.

General of the navy, he had gained great credit for simplifying naval estimates into an intelligible form, and thus had considerable experience in naval financial matters.⁷¹ Although an able civil servant, his close connection with the Admiralty (he would return as Permanent Secretary after the Commission), may still have given him some sympathy to views of the other commissioners.

Although the Commission included both sides of domestic politics, the Commission did not include, at Carnarvon's insistence, any representatives from the Colonies, perhaps because the Commission already had eight members and risked overcrowding.⁷² Furthermore, the problem of a lack of Colonial presence was negated to some extent by the Commission stating very early on that Colonies should be asked to send delegates to communicate with them, adding to the multitude of Colonial sources used as evidence.⁷³ This does not, however, alter the fact that the Commission lacked any colonial representative actually involved in assessing the evidence and compiling the report. While it can be accurately described as 'the first comprehensive study of Imperial defence', it is important to recognise it was not an imperial body as, for instance, the Colonial Conferences were from 1887.⁷⁴

The Commission sat for three years, from 1879 to 1882, in which time it produced three reports. The Commission, therefore, had far more time to assess the issues surrounding coaling than the Colonial Defence Committee, as the urgency of a war scare had now passed. Thus, there was no pressing need to solve the issues immediately and it was able to make recommendations that were both permanent and well informed. Before the Commission had been instigated, however, Carnarvon had ensured several demands

⁷¹ A.F. Pollard, 'Hamilton, Sir Robert George Crookshank (1836–1895)', rev. David Huddleston, *Oxford Dictionary of National Biography*, Oxford University Press, 2004; online edn, Oct 2005 [<http://www.oxforddnb.com/view/article/12124>, accessed 18 May 2011].

⁷² Schurman and Beeler, *Imperial Defence*, 85-87.

⁷³ This may also explain the rejection of Colomb's claims to be included. TNA, CO 323/356.

⁷⁴ Burroughs, 'Defence and Imperial Disunity', in Porter (ed.), *The Oxford History of the British Empire. Vol. 3, the Nineteenth Century*, 334.

were met in the scope of the work. First and foremost, especially in the course of events which followed, was an insistence of secrecy for the reports. Second was the removal of India from the remit of the Commission, and third the need for access to full details of current works and defences, including highly sensitive documents.⁷⁵ This last point was especially directed at the Australian Colonies, who had employed Sir William Jervois to compile reports on their port defences, and had consequently begun some works under their own initiative.⁷⁶ As the imperial fortresses of Malta, Gibraltar, Halifax, and Bermuda were already well defended and usually grouped with the home fortresses, they were not considered in the enquiry at all.⁷⁷

The Commission gathered information in a variety of ways. Like the Colonial Defence Committee, it made use of existing figures by requesting existing statistics from the War Office and Colonial Office. It used telegraphic communication with colonial governors to establish the defensive situation in their respective ports, and, where telegraphs did not exist (in Diego Garcia, for example) ships were sent to gather the required information.⁷⁸ In many colonies sub-committees were established to provide the Commission with as detailed and up-to-date data as possible.⁷⁹ These sources provided a large amount of data, but the bulk of the Commission's evidence was gleaned by interviewing a variety of witnesses. In total, between 25 November 1879 and 19 May 1882, the Commission interviewed thirty-nine witnesses, and in asking 5749 questions it produced 255 pages of evidence.⁸⁰

⁷⁵ The reason for the removal of India from the enquiry is never explained. It may reflect the fact that Bombay, the main open coastal port was already very well defended by two ironclads and gun batteries. Furthermore, there was only a small naval presence there, and the India Office was quasi-independent.

⁷⁶ 'Letter from Carnarvon to Hicks-Beech', 19 August 1879, CO 323/356.

⁷⁷ Schurman and Beeler, *Imperial Defence*, 14.

⁷⁸ 'No. 8, Appendix 1, First Report of the Carnarvon Commission', TNA, CAB 7/2.

⁷⁹ W.T. Stead, 'The Truth About the Navy and Its Coaling Stations by One Who Knows the Facts', *Pall Mall Gazette*, 16–17 October 1884.

⁸⁰ 'Minutes of Evidence, First Report of the Carnarvon Commission', TNA, CAB 7/2; 'Minutes of Evidence, Third Report of the Carnarvon Commission', TNA, CAB 7/4.

The Commission was given free rein over whom it could call upon for evidence and over any plans and designs it wished to see. Prominent figures among those giving evidence were shipping interests such as Donald Currie (Castle Mail Packets Company), Alfred Holt (Blue Funnel Line), Charles McIver (Cunard) and T.H. Ismay (White Star), colonial representatives such as Thomas George Baring (politician and Viceroy of India), Henry Bartle Frere (High Commissioner for Southern Africa), and Sir John Alexander Macdonald (Prime Minister of Canada), and high-ranking members of the armed forces such as the Duke of Cambridge (Commander-in-Chief of the British Army), and Admiral Sir Astley Cooper Key (First Naval Lord). Just as important was the evidence of technical experts such as Thomas Gallwey (Inspector General of Fortifications), Sir Charles Tilston Bright (telegraph engineer), Sir Peter Scratchley (military engineer and colonial administrator) and the chief engineers of various colonial ports.

The Commission asked each witness a series of questions in order to gain evidence for their recommendations. While each interview was different, the questions asked by the Commission can be broadly grouped by type of witness. Colonial representatives were asked about the current status of the colony, including its trade and revenue, the location of ports and docks, and what defences and garrisons were currently in situ. Furthermore, they were asked their recommendations for the improvement of defences, the apportionment of costs, and the proposals for locations for new stations where appropriate. Ship magnates were asked about the speed and endurance of their ships, the risk to them from hostile cruisers and consequently what protection was needed, the location of coal depots used by their ships and where that coal was supplied from, the main trade routes, and where stations were connected to telegraph and railway networks. Those high-ranking military officers interviewed were asked about global strategy, including plans for the supply of coal for warships and the protection of commerce in war. Engineers and

other fortification experts were asked for recommendations on the needs of particular ports and stations for armaments, defensive works, and garrisons.

Clearly many of these witnesses would have their own agendas: shipping line owners would want as much protection for their ships as possible; governors would always argue for more defences but fewer contributions; and government officials would wish to avoid expenditure as much as possible. Even so, the use of these men's statements, along with those with who had technical knowledge of both fortifications and communications, allowed the Commission to analyse a wide variety of evidence in order to form a global strategy for the defence of coaling stations, and therefore British interests and commerce. The depth of evidence allowed them to look beyond solely installing permanent defences at coaling sites, but to consider this alongside provisions for garrisons, gunships, torpedo boats, and mines, as well as protection from nearby fleets.

The Committee was charged with making recommendations for 'the best means ... of providing for the defence and protection of Our Colonial Possessions and commerce ... special attention being given to necessity of providing safe coaling, refitting and repairing stations ... in time of war'.⁸¹ The majority of the recommendations were, therefore, for defensive works at British coaling stations. Interestingly, there are few specific mentions in the reports relating to any defence of the ships supplying the coaling stations, although, as slow cargo ships, the Commission would have considered them along with any shipping likely to be attacked or captured by enemy cruisers. Thus by properly defending coaling stations, it was supposed that they would be adequately protected by those naval warships that could safely coal around the empire.⁸² Furthermore, in an appendix, Milne briefly addressed the question of supply, arguing that there was a need for screw colliers and local

⁸¹ *London Gazette*, 12 September 1879.

⁸² In the appendix to the Third Report, Milne does suggest that unless all coaling stations listed were fully stocked, the navy would be paralysed, 'Coal being as essential to Her Majesty's service as ammunition'. He argued that warships should not be withdrawn from their stations to go to a distant station to refuel, therefore the Admiralty needed to invest in screw colliers capable of carrying 800 to 1,000 tons of coal attached to principal stations. TNA, PRO 30/6/125.

sources of supply in order to supply coaling stations in war.⁸³ Even so, it is noticeable how infrequently coal supply was mentioned in the reports, especially considering how much the Commission stressed the importance of coal to imperial security.

While it is not within the scope of this chapter to discuss in forensic detail all the data that the Commission collected for each of the twenty-eight sites discussed in the three reports, it is worth exploring the nature of the data the Commission gathered, and the methods used to analyse it.⁸⁴ As well as interviews, the Commission used a wide range of current statistical data, including empire-wide figures such as trade statistics, fleet positions and numbers, and the positioning of telegraph networks, to give an overall picture of the global implications of the coaling problem. The Commission also recognised that each station needed unique recommendations and took great care in assessing specific data for the requirements of each station. The importance attributed to a station, and thus the amount of money the Commission would recommend for it, was largely determined by its strategic significance, both to the Royal Navy and trade, and its proximity to rival naval stations and other British stations. The depth of these considerations is remarkable: despite the fact that only France could hope to challenge Britain on a global scale, the reports used War Office intelligence to consider the relative strengths and locations of all rival foreign stations, including those of France, Spain, Portugal, Russia, Italy, China, Japan, Brazil, Uruguay, Argentina, Honduras, Netherlands, United States, and Denmark.⁸⁵ In addition to strategic importance, the distinctive nature of each station – its climate, the size of the surrounding settlements and colony, the geography of the station, and especially what already existed at the station – also had huge implications for the costs and scale of the

⁸³ 'Appendix 1, Third Report of the Carnarvon Commission', TNA, CAB 7/4.

⁸⁴ The index names these as: Aden, Cape, Ceylon, Esquimalt, Hong Kong, Jamaica, Mauritius, Singapore, Antigua, Ascension, Bahamas, Barbados, Chagos Archipelago, Cocos or Keeling Islands, Cyprus, Falkland Islands, Fiji, Gambia, King George's Sound, Labuan, Penang, Perim, Seychelles, Sierra Leone, St Helena, St John's Newfoundland, St Lucia, and Torres Straits. See TNA, PRO 30/6/125.

⁸⁵ 'Appendix 1 of Second Carnarvon Report', TNA, PRO 30/6/131; Appendix 9, Third Report of the Carnarvon Commission, TNA, CAB 7/4.

recommendations. The reports are thus recognition of the fact that in order to create a worldwide system of imperial defence, the local had to be considered along with the global.

As well as tables and written recommendations, the Commission made ample use of mapping. Although it represents just one medium with which the Commission presented its findings, exploring the use of maps goes some way to show the range and amount of data collected and of the recommendations contained in the reports. By utilising existing and gathered data, they were able to produce maps which illustrated the global, regional, and local nature of naval coaling infrastructure. Through these maps, the Commission was able to 'reduce the world to order', and thus assume power over it.⁸⁶ The Commission produced several global maps (see Figure 3.1) which plotted variously the location of British naval coaling stations, commercial coaling stations, foreign naval stations, trade routes, and telegraphic connections. Together these allowed the Commission to substantiate why they considered certain sites invaluable, and furthermore illustrate how recommendations for each station translated into a global strategy. Similarly, the Commission produced several smaller scale regional maps, of oceans, naval patrol areas, and other discrete maritime spaces. These maps allowed the Commissioners to examine and illustrate these connections and strategies clearly and in more detail, and to connect the global and local more easily (see Figure 3.2).

⁸⁶ Lambert, 'The Royal Navy and the Defence of Empire 1856-1918', in Kennedy (ed.), *Imperial Defence*, 126.

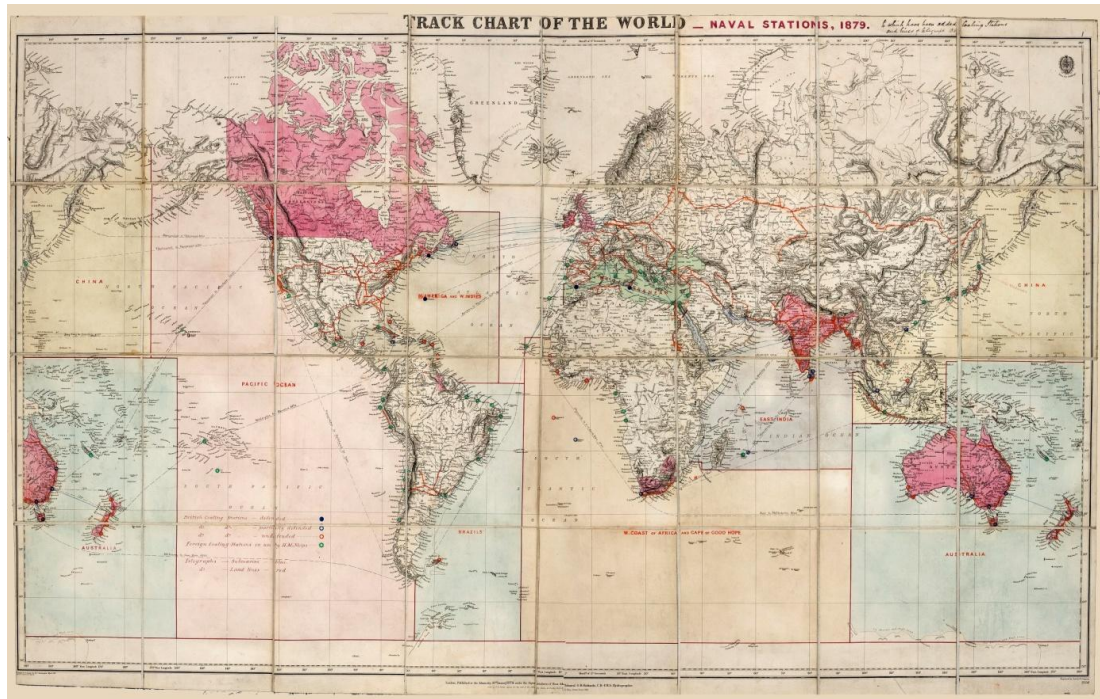


Figure 3.1: 'Track Chart of the World Showing Naval Stations, 1879'. TNA, PRO 30/6/131. The map also shows telegraph lines and stations, as well as dry docks.



Figure 3.2: Map showing European possessions and distances between stations in the Pacific. Produced for the Carnarvon Commission, 1879–1882. TNA, PRO 30/6/131.

The third main type of map included in the Commission's reports, the local (see Figure 3.3), allowed the Commissioners to represent information gathered from local administrators, military and fortification experts, and commercial shipping agents. Not only do the plans show in some detail the locale of the coaling station, but also include details of the proposed armaments and defensive works, and even the expected range of the guns once installed, demonstrating the level of protection that implementation would bring to coaling infrastructure. It was this breadth and depth of data and analysis that made the Commission's reports so ground-breaking. As a result, W.C.B. Tunstall has argued that the recommendations were 'of special importance because they lay down the general principles of imperial defence'.⁸⁷

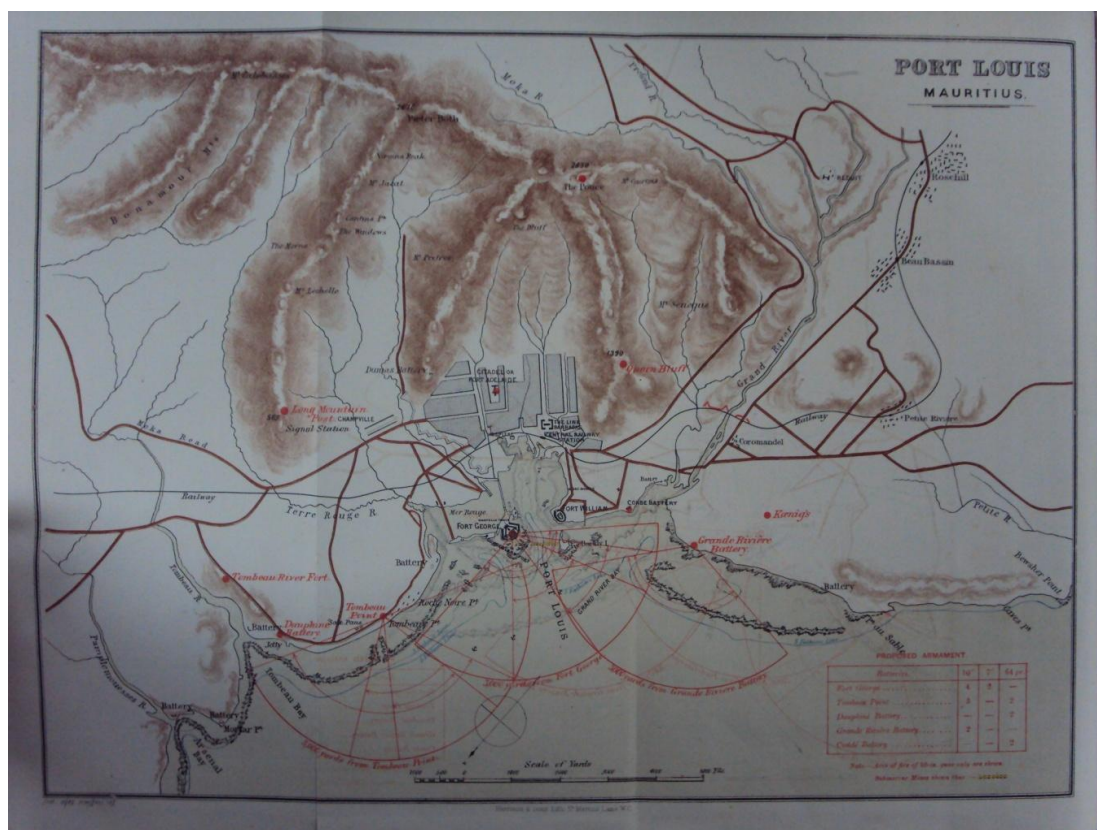


Figure 3.3: Map showing Commission recommendations for Port Louis, Mauritius. Produced for the Carnarvon Commission, 1879–1882. TNA, 30/6/131.

⁸⁷ W.C.B. Tunstall, 'Imperial Defence, 1870-1897', in J.H. Rose, A.P. Newton, E.A. Benians, and H. Dodwell (eds), *The Cambridge History of the British Empire. Vol. 3* (Cambridge: Cambridge University Press, 1959), 232-234.

The recommendations themselves were divided into three separate reports. The first dealt with trade and shipping, the second made recommendations on the duties and strength of the navy as well as Australian defences, and the third looked to proposals for the defences of the remaining coaling stations and commercial harbours. These reports might well be described as a blueprint for an imperial defence policy, and thus demonstrate the centrality of coal and coaling infrastructure played in the wider defence of empire. The subjects covered by the reports also show the crucial importance of commercial markets and trade routes, both inside and outside the empire, emphasising that imperial defence was not necessarily about land and people, but trade and markets.⁸⁸ Thus, the reports of the Commission extend the idea of imperial defence beyond those areas under direct British rule, and in fact beyond those land areas under British influence as part of an 'informal empire', to include the vast maritime spaces used by British commercial interests. The Commission therefore recognised imperial defence as a global, oceanic construct, rather than a collection of local defences.⁸⁹

As the Commission was charged with 'the defence of commerce abroad', it began by investigating imperial trade routes. The value of British maritime trade was enormous: the Commission estimated that it was worth £900,000,000 annually, with around £144,000,000 afloat at any one time. Furthermore, as Britain imported essential food and raw materials from abroad, a lack of protection would be ruinous not only to the economy, but also to the populace.⁹⁰ It illustrated these figures with a map (Figure 3.4), which highlighted key trade routes, and the strategic points on them. Although this knowledge was not new, the Commission warned of the growing threat to British trade. France in particular, it cautioned, was 'making rapid strides towards placing herself on a dangerous

⁸⁸ Lambert, 'The Royal Navy and the Defence of Empire 1856-1918', in Kennedy (ed.), *Imperial Defence*, 112. For the importance of trade to the empire, see Cain and Hopkins, *British Imperialism*; Robinson, Gallagher, and Denny, *Africa and the Victorians*.

⁸⁹ Lambert, 'The Royal Navy and the Defence of Empire 1856-1918', in Kennedy (ed.), *Imperial Defence*, 115.

⁹⁰ 'Summary of Carnarvon Reports', TNA, PRO 30/6/131.

equality with Great Britain, whether we consider the far smaller and more concentrated duties which her navy has to discharge, or whether we look to the greater rate at which her ship-building is now carried on'.⁹¹ A policy of *guerre de course*, the deliberate targeting of maritime trade, from French naval vessels was the greatest fear, but it was not necessarily the capture or destruction of first-class steamers that was the biggest danger. In fact, much of the evidence the Commission collected suggested that the trade carried in first-class steamers had little need for naval protection, as those vessels could outrun nearly all naval ships and had little need for coaling en route.⁹² They were still reliant on Britain commanding the ocean and possession of protected refuge ports, however, and this necessitated a secure chain of coaling stations for the navy. Furthermore, slower cargo ships, including those carrying coal, were still liable to capture.⁹³ Although perhaps worth less in terms of trade, these ships were essential to the British imperial economy, as they carried many of the key resources for British and colonial industry. Of course, coal was especially important to the defence of oceanic trade, for without coal, the merchant marine and navy would be left stranded.

⁹¹ 'Summary of Carnarvon Reports', TNA, PRO 30/6/131.

⁹² 'Evidence of T.H. Ismay, Minutes of Evidence, Third Report of the Carnarvon Commission', TNA, CAB 7/4.

⁹³ 'Evidence of William Young, Underwriter, Minutes of Evidence, Third Report of the Carnarvon Commission', TNA, CAB 7/4.

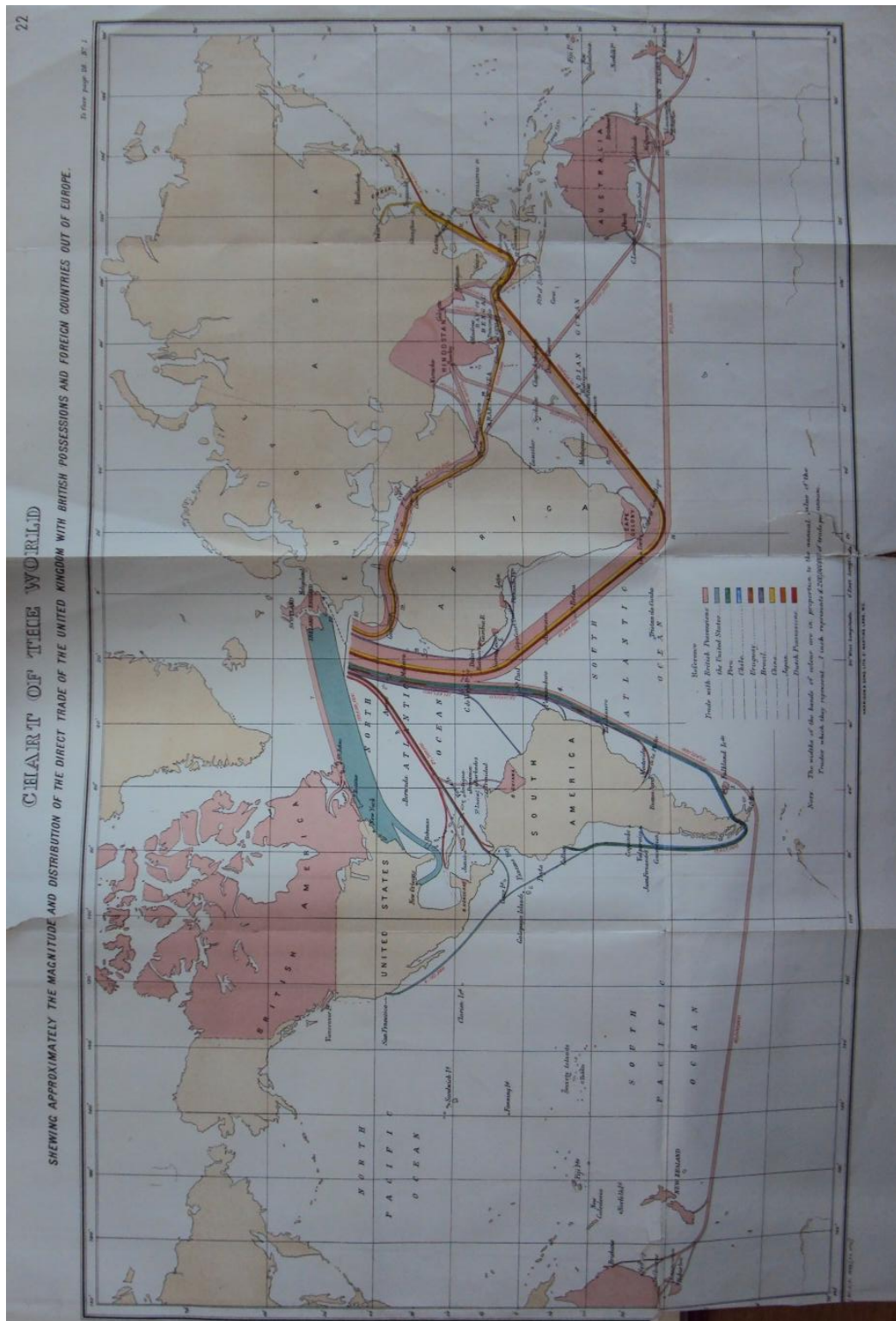


Figure 3.4: 'Chart of the World Showing Approximately the Magnitude and Distribution of the Direct Trade of the United Kingdom with British Possessions and Foreign Countries out of Europe'. Produced for the Carnarvon Commission, 1879-1882. TNA, CAB 7/2.

The Commission suggested that 'looking to the action of other countries, the strength of the navy should be increased with as little delay as possible'.⁹⁴ Its recommendation to build more ships was based on the fact that although it would be expensive, it would be more effective and less costly than increasing garrisons and fixed defences. Furthermore, it stated that all the recommendations in the reports for defences at major ports were based on the assumption that the 'navy will hold the seas', something that would not be possible without an increase in warships.⁹⁵ Importantly, their recommendations also included the crucial caveat that 'no addition to the number and fighting power of your Majesty's ships will make up for the want of coaling-stations'. This point was so fundamental, in fact, that 'the Commission state[d] their belief that the command of the sea resolves itself very much into a question of coal supply – how to deprive an enemy of his supplies, while securing ample supplies for our own ships'.⁹⁶

To this end, the Commission listed the four ways it considered that an enemy might obtain coal for its navy in war. First, and most obvious, was in its own ports, or in those of an ally. Second was in the ports of a neutral state. Third was by seizing coal from British ports or from captured vessels, and fourth by rendezvousing with colliers at sea. It is worth exploring these final three ways. For the second, using ports of a neutral state, the report states that, because of the Treaty of Paris of 1856, 'the supply of coal to belligerents in the ports of neutral states is regulated by the laws of those states subject only to the condition that a neutral state must give equal facilities to all belligerents'. This was generally understood to be a maximum of twenty-four hours in port. It went on to say, however, that 'rules ... would not prevent a belligerent ship from obtaining a full supply of coal in a neutral port'. This was because the Commission predicted that it would be 'difficult to enforce the rules; and it is doubtful whether the ships of a strong naval power would

⁹⁴ 'Summary of Carnarvon Reports', TNA, PRO 30/6/131.

⁹⁵ Ibid.

⁹⁶ Ibid.

submit to their operations being crippled for want of coal by the regulations of a small state in a distant port'.⁹⁷

The Commission's report then assessed what the agreement might mean for British warships, concluding that the ramifications could be disastrous. Of the forty-seven stations now in use by Royal Navy ships, twenty-six were in foreign territory. For Britain, which not only had a huge overseas empire scattered across the globe, but also relied heavily on neutral ports, coaling in war could therefore be a particular problem. In some parts of the world, foreign stations were habitually used by the Royal Navy as no British possession existed in the vicinity. For example, on the route to the Cape, Portuguese stations plugged the gaps between British stations. As most ships could only steam for 3,000 miles, at least in the 1870s, earlier reports had suggested a war would present extreme difficulties for coaling the fleet, and thus protecting British interests in some key places.⁹⁸ As coal was readily available in the foreign commercial stations which occupied the gaps between British stations, the Admiralty had made little attempt to rectify this situation with a coherent strategic plan. Thus, that coaling in neutral stations might not be possible in times of war was part of the Commission's argument for the defence of existing coaling stations and the acquisition of new ones.⁹⁹ The Commission's fears were founded on convincing evidence, not least that in the Franco-Prussian war, one of a few steam navy engagements to occur since the Crimean War, the neutral power of Denmark had denied the French navy the option of coaling in its stations.¹⁰⁰ Its findings somewhat contradicted its previous

⁹⁷ Ibid.

⁹⁸ 'Colonial Defence Committee memorandum on Colonial Defences', TNA, CO 537/208. This paucity of coaling stations in some areas was mainly due to the ad hoc nature of their acquisition and establishment, many being spoils of the Napoleonic Wars. See Willock, *Bulwark of Empire*, 1-3.

⁹⁹ Few new stations are actually founded in this period. As the steaming distances of warships increase there was less need, but in some areas, like South America, the Royal Navy remained reliant on neutral stations.

¹⁰⁰ The French fleet had wrongly assumed they would be able to coal at the neutral Danish port of Kjøge, but the Danish, considering coal to be contraband of war, argued that the Treaty denied them the ability to supply either hostile power as Denmark was a neutral state. Unable to coal, the fleet was rendered impotent. See Friedrich Wilhelm Rüstow, *The War for the Rhine Frontier 1870: Its*

argument about foreign vessels, however. It seems highly unlikely that if an enemy were to breach the Treaty, Britain would not respond in kind. Perhaps the Commissioners were looking to a worst case scenario, but it is hard to imagine that Britain would not coal at neutral ports if its enemy did. Although it was not the sole reason used to promote the defence of coaling stations, this does suggest that the Commission's recommendations had a clear agenda, which sometimes bordered on alarmism.

Whereas there was little, bar exerting economic pressure, that Britain could do to prevent an enemy coaling at its own or neutral ports, the third and fourth ways for an enemy to obtain coal were those which the Commission could hope to recommend measures against.¹⁰¹ The third, seizing coal in British ports or in captured trading vessels, and the fourth, by supply from colliers at sea sent on a prearranged rendezvous, could both be prevented with proper defensive works and armaments at British ports and naval control of the oceans. The Carnarvon Commission, like the Colonial Defence Committee, acknowledged that imperial funds would not stretch to the defence of commercial coaling stations, but recognised that coal left undefended at British stations would be at the mercy of foreign ships. To counteract this, it suggested that it might be necessary in some circumstances to destroy coal stocks or move it away from wharves.¹⁰²

Although fortifying commercial stations was not viable, far more pressing, and achievable, the Commission argued, was the need to defend British naval coaling stations properly. These stations, due to their strategic importance, were crucial to the ability of the Royal Navy to protect British interests. Of the twenty-one foreign stations in British territories, just four were defended (and all of these Imperial Fortresses were outside the remit of the Commission), five were partially but inadequately defended and the remainder

Political and Military History, trans. J.L. Needham, vol. III (Edinburgh: William Blackwood and Sons, 1872), 80.

¹⁰¹ Economic pressure was successfully used to prevent colliers leaving neutral ports, but this was limited to Britain's informal empire in South America.

¹⁰² 'Summary of Carnarvon Reports', TNA, PRO 30/6/131.

were undefended entirely. The Commissioners divided the stations into two discrete categories based largely on those put forward by Milne's Committee: primary or principal, and secondary or minor.¹⁰³ The primary stations were considered to be the four Imperial Fortresses, Gibraltar, Malta, Halifax, and Bermuda, as well as Sierra Leone, Ascension, St Helena, Simon's Bay, Mauritius, Aden, Bombay, Singapore, Hong Kong, Barbados, Jamaica, Esquimalt (Vancouver) and, more generally, Australia.¹⁰⁴ Simmons suggests that these were stations which kept large coal stores, as well as means for swift coaling of vessels. In addition, they often possessed dry docks for refitting and repairing warships, as well as safe refuge points for large ships. Because of this strategic importance, they would require heavy expenditure to defend.¹⁰⁵

The secondary stations listed by Milne were the Seychelles, Labuan, Fiji, Antigua, and Trincomalee (Ceylon).¹⁰⁶ Simmons suggested that these stations would stock coal, but not in such large amounts. This did not diminish their importance, however. He suggested that the navy would be 'crippled in its operations without them' and 'if undefended [they] might be used or destroyed by any enemy, and thus be productive of serious mischief by supplying the wants of the enemy and leading our own ships to depend upon an uncertainty'.¹⁰⁷ As with the primary stations, these could not depend on the direct protection of the navy, and thus they needed to be secured by land defences and garrisons to man and protect them.¹⁰⁸ They were, however, less strategically important, so less expenditure was justified.

The cost estimates for the defensive works came to £2,507,386, of which £1,988,018 would come from the imperial purse. The cost divisions reiterated the importance that the Commission placed on the primary stations, which were assigned

¹⁰³ The document written by Milne is included in the report's appendix.

¹⁰⁴ 'Third Report Appendix', TNA, PRO 30/6/125.

¹⁰⁵ 'Report by Sir L. Simmons June 21, 1882', TNA, PRO 30/6/125.

¹⁰⁶ 'Third Report Appendix', TNA, PRO 30/6/125.

¹⁰⁷ 'Report by Sir L. Simmons June 21, 1882', TNA, PRO 30/6/125.

¹⁰⁸ Ibid.

£2,307,386 with just £200,000 for secondary stations. The Commission also recommended a troops increase of over 8,000, bringing numbers to 18,652 in total at primary coaling station garrisons.¹⁰⁹ The amount of money the Commission was willing to spend is significant in itself, but the idea of spending it on imperial, rather than European, defence is particularly important, and suggests a change of direction on imperial defence spending. The global scope and vision of the recommendations are also important. Rather than merely improving defences for reasons of a local nature, the recommendations were for places of a wider imperial importance, which together would form an integrated imperial defence scheme.

The Commission placed particular emphasis on the defence of Simon's Town, the naval station at the Cape of Good Hope. This shows how the Commission was constantly assessing all levels of scale in their recommendations, from local strategic importance to a station's place in global flows of trade. Just as the Colonial Defence Committee had done, the Commission concluded that the Cape was as important as Malta or Gibraltar. The reports argued that the Cape would be 'the key to our Indian Empire and our extensive trade to China and Japan, and our Australian Colonies, in the event of any accident to, or stoppage of, the passage through the Suez Canal', thus it was 'the opinion of the Commissioners that no delay should take place in the construction of the permanent defences of this most important station'.¹¹⁰ The importance of Simon's Town rested on the huge amounts of British trade that passed it, its strategic position for both the Atlantic and Indian Oceans, and that it was isolated from other British stations.¹¹¹ Furthermore, 'in the not improbable contingency of the Mediterranean and Suez Canal being closed to British ships', trade would increase markedly past the Cape and its importance as a line of communication would be paramount. Thus, there was a need for a fleet to be based there

¹⁰⁹ 'Third Carnarvon Report', TNA, PRO 30/6/131.

¹¹⁰ 'Memorandum of July 9, 1881', TNA, PRO 30/6/125.

¹¹¹ Schurman and Beeler, *Imperial Defence*, 71-72; 'Memorandum on Cape Town, 1879', TNA, CO 537/211.

and, consequently a need for the infrastructure to support it.¹¹² As it was not making recommendations for the imperial fortresses, it was Simon's Bay which 'in the opinion of the commission [is] the most important of all the stations required for the support of Her Majesty's ships'.¹¹³ The Commission recommended that the metropole cover the entire cost of the works, as they were of imperial benefit, and the colony was comparatively poor.

Great importance was also attached to Hong Kong as a key trading centre and the only place from which Chinese commerce could be protected. Similar cases were presented for Colombo and Singapore, both being key trading posts in crucial strategic positions. Sierra Leone, as the only British station on the 6,000 mile route between Gibraltar and the Cape, and Mauritius, occupying a similar position between the Cape and Ceylon, were also marked for special attention. Both were also near to large French stations, and would be prime targets in an Anglo-French war. Aden needed to be defended for its proximity to Suez and other foreign stations in the Red Sea, and Jamaica required works and armaments as the major British possession in the Caribbean as well as for its strategic position with reference to the proposed Panama Canal.¹¹⁴

Interestingly, the Commission's recommendations for defence of coaling stations did not exactly match those suggested by the Colonial Defence Committee. Less importance was attributed to St Helena and it recommended the abandonment of Ascension completely. Similarly, Port Castries, St Lucia was chosen for its proximity to the French station at Martinique, and thus was preferred to Antigua and Barbados. The station at Esquimalt, Vancouver, was the cause of some disagreement. The most isolated of all stations, the nearest British naval establishments (at Fiji and Hong Kong) were too far distant to offer any support in times of war. Acquisition of an intermediate island would cause tension with the USA, and as trade was minimal around it, the naval station would

¹¹² 'Summary of Carnarvon Reports', TNA, PRO 30/6/131.

¹¹³ Malta, Gibraltar, Halifax, Bermuda, Hong Kong are strongly defended and 'consequently secure from attack'. TNA, PRO 30/6/131; 'Summary of Carnarvon Reports', TNA, PRO 30/6/131.

¹¹⁴ 'Third Carnarvon Report', TNA, PRO 30/6/131.

have been the only logical target in a war. The decision to recommend the removal of the fleet from Esquimalt to China to protect Pacific trade highlights the way that the Carnarvon Commission's focus on a global strategy for coaling station defence superseded all other considerations. Indeed, focusing on how the stations would function as a chain of imperial defences was of more importance to the Commission than simply defending current British stations. That this view was disputed by Milne and Barkley, however, who strongly disagreed about the transference of the fleet and any plans to abandon Esquimalt, shows that such an approach was not uncontested.¹¹⁵

As with Simon's Town, costs for Sierra Leone, St Helena, Mauritius, Port Royal (Jamaica), and Port Castries (St Lucia), were to be covered by the British government. Furthermore, in Colombo and Table Bay (Cape Town), only a small colonial expenditure was expected.¹¹⁶ This reflected an awareness from the Commissioners that, in order to guarantee the navy the fuel to protect Britain's maritime trade worldwide, there was a need to protect coaling stations abroad as soon as possible. To do this, Britain had to take responsibility for the funding of those colonies lacking in finances, where the defences were for the good of the empire as a whole. Where there was shared benefit from the recommendations, and the colony was rich enough, there was an expectation that the costs would be divided. This had already occurred in the Australian Colonies, whose defence had, 'in great measure [been] accomplished by the Colonies themselves', even during, and in spite of, the diminishing naval estimates and troop withdrawals of the mid-Victorian period.¹¹⁷ In these cases, the Commission did not seek to undermine colonies' own efforts, but their recommendations were designed to assist the colonies in their ongoing defensive improvements.¹¹⁸ The offer of British expertise and planning, plus, in

¹¹⁵ Ibid.

¹¹⁶ 'Summary of Carnarvon Reports', TNA, PRO 30/6/131.

¹¹⁷ 'Third Carnarvon Report', TNA, PRO 30/6/131.

¹¹⁸ 'Letter from Commission to Colonies', TNA, CO 323/356.

many cases, finance and materials, suggested the Commission recognised that imperial defence should be attempted with the colonies in a co-operative environment.

The acknowledgment in the reports that both Britain and its self-governing colonies held responsibilities for imperial defence, where funds allowed, showed an understanding on the behalf of the Commission that in order to compete with the burgeoning economic, industrial and military power of Germany and the USA in particular, Britain would have to involve the self-governing colonies more in imperial defence. While not quite to the extent suggested by Charles Dilke in *Greater Britain*, it certainly showed a more united approach to imperial defence, representing a shift away from the detached attitude of mid-Victorian governments towards the empire.¹¹⁹ Indeed, in advocating closer ties, but not full federation, the reports reflected the ideas of the less radical elements found under the loose umbrella of the 'imperial federation' movement.¹²⁰ It was only with the suggestion of imperial co-operation, in terms both of funding and of garrisons, that the Carnarvon Commission was able to recommend the end of a stop-gap approach to coaling station defence, and instead offer a complete and permanent system of empire-wide security that accounted for a number of likely future defence eventualities.

The reports that the Commission produced were exhaustive – Carnarvon would later state in the House of Lords that they had 'looked at the scheme as a whole'. Although comprehensive, they were also designed to be realistic, and thus they had 'framed their estimates upon the lowest possible scale'.¹²¹ The fact that the cost estimates for the defensive works still came to £2,507,386 says much about the Commission's worries about the defence of naval coaling stations, and, moreover, how far attitudes towards the coal

¹¹⁹ See Charles Wentworth Dilke, *Greater Britain: A Record of Travel in English-Speaking Countries During 1866 and 1867* (London: Macmillan, 1868).

¹²⁰ See Duncan Bell, 'The Victorian Idea of a Global State' in Bell (ed.), *Victorian Visions of Global Order*.

¹²¹ Reported in *The Times*, 14 November 1884.

question, and indeed imperial defence in general, had changed.¹²² Furthermore, it was testament to the importance of coal that this simple fuel had instigated the first comprehensive assessment and recommendations for a complete system of imperial defence.¹²³

In contrast to the Colonial Defence Committee, the Carnarvon Commission was not hampered by a lack of resources, time, or information, and was able, therefore, to produce a comprehensive account. Furthermore, because it was able to present a huge amount of data that had been analysed and organised by a government authority, the knowledge it created was pervasive and enduring.¹²⁴ We can, therefore, see the Carnarvon Commission as an attempt to create coaling knowledge in order to ensure British power over naval fuelling and mobility. The knowledge created by the Commission was, of course, influenced by the interests of those who sat on it. As it largely contained those sympathetic to the defence of coaling stations, we must see the reports as representing the political interests of navalists. Moreover, the lack of colonial presence on the committee also meant that it also was skewed by the interests of the metropole. Despite this, especially after 1884, the reports were still widely seen as the authoritative coaling knowledge.

The Last Hurrah of Gladstonian Liberalism

However significant the reports of the Carnarvon Commission were, any immediate progress on their recommendations was halted before they were even completed, when a change of government brought Gladstone back as Prime Minister in 1880. The humiliating defeats suffered by the British in the course of the Anglo-Zulu and Second Afghan wars had allowed Disraeli to be cast as 'un-English' by the Liberals, who accused him of having

¹²² 'Third Carnarvon Report', TNA, PRO 30/6/131.

¹²³ Schurman and Beeler, *Imperial Defence*, 86.

¹²⁴ Thomas Richards, *The Imperial Archive: Knowledge and the Fantasy of Empire* (London: Verso, 1993), 3-5.

endangered the empire by overextension, and seeking glory as Napoleon and ancient Rome had done.¹²⁵ These accusations tainted the nascent imperial foreign policy of the Conservative Party as aggressive, vain and reckless. Furthermore the defeats were coupled with an economic depression and high taxation, and with Disraeli's popularity waning, Gladstone returned with a large majority.¹²⁶

As well as a setback to the Conservative Party and its pro-imperial foreign policy, it was also a blow for the development of long-term policy on coal supply and coaling station defence. Many politicians, including Liberals, distinguished between Disraeli's aggressive 'false imperialism', which was seen to be seeking territorial acquisitions for material gain, and a 'true' imperialism which promoted the ideals of European enlightenment, but both were largely tarred with the same brush by the new government. As defensive measures, the recommendations of Carnarvon could hardly be categorised as an aggressive form of imperialism, but with Gladstone – who had as little time for imperial defence as he did for extending the empire – returning as Prime Minister, the measures lost political support and were largely quashed.¹²⁷ From the very beginning of its term in office, there is little to suggest that the Liberal government intended even to contemplate any of Carnarvon's recommendations, yet, despite being less than a year old when the change of government occurred, the Commission continued to work at the government's request. It could be argued that the recommendations took the Liberal government by surprise, being unexpectedly wide ranging and expensive, but it seems unlikely that with the make-up of the Commission, which included several men who had already spoken out about coaling defence, anything else could have been expected. The reasons for the new government continuing the enquiry would, therefore, appear to be more cynical. Firstly, by continuing the Commission the new government was able to avoid any immediate criticism and,

¹²⁵ Parry, *The Politics of Patriotism*, 335.

¹²⁶ Ibid., 339.

¹²⁷ Cain, 'Radicalism, Gladstone, and the Liberal Critique of Disraelian "Imperialism"', in Bell (ed.), *Victorian Visions of Global Order*, 7.

secondly, it was effectively able to remove the issue from political debate until the reports were released.¹²⁸

These motives were perhaps betrayed when the Colonial Office wrote to the Commission to inform it that the new Colonial Secretary, Lord Kimberley, 'desires ... to assure them that their recommendations will not fail to receive that attention which the importance of the subject demands', yet in the same memorandum the Commission was reminded that 'the reports are very confidential and it is therefore important that they should not be communicated to anyone except in strict confidence'.¹²⁹ Whatever statements Kimberley had made about the seriousness of the findings, the confidentiality clause inserted by Carnarvon himself allowed the government to ignore the report's recommendations, without censure, by blocking its publication. Kimberley's response was measured, however, compared to some of his Cabinet colleagues. The radical John Bright suggested that 'the whole of this insane scheme be given up' and Gladstone recommended it should be given 'its tether' and 'perhaps it [would] make itself useless', only supporting its continuance to avoid costly political fallout.¹³⁰ The level of government apathy is perhaps best summarised by a memorandum from the Colonial Office after the second report was published in 1882, asking 'has anything been done respecting the Royal Commission? ... I don't know whether it rests with us or the War Office'.¹³¹

In 1883, however, the responsibility for issues of imperial defence was transferred from the Colonial Office to the War Office, and the reports were passed to Lieutenant-General Sir Andrew Clarke, the incumbent Inspector General of Fortifications, who was asked to provide a memorandum with his recommendations on the issue. A staunch Liberal who shared similar views to Gladstone on defence spending, he had been a surprise appointment to the role. Contemporary opinion suggested that his appointment was made

¹²⁸ Clokie and Robinson, *Royal Commissions of Inquiry*, 123.

¹²⁹ 'Memorandum circulated 24 July 1882', TNA, CO 323/353.

¹³⁰ Cabinet notes, cited in Schurman and Beeler, *Imperial Defence*, 89-90.

¹³¹ 'Memorandum of Colonial Office', May 18 1882, TNA, CO 323/353.

because of his political views and friends in high places.¹³² It is, therefore, unsurprising that his proposals vastly reduced the estimates Carnarvon and the other Commissioners had recommended. Instead of allowing £1,396,527 for the defences of first-class stations, the report offered £846,870 and garrison numbers were reduced from 19,557 to 10,259.¹³³ While the Carnarvon reports were by no means flawless, they were certainly a 'reasonable approximation of what was necessary' to secure Britain's imperial interests and contained enough appendices to allow alterations to the flawed elements of the recommendations.¹³⁴ It seems sensible to assume therefore that such a drastic reduction of funding for works and armaments, as well as garrison numbers, could not be achieved without severely reducing the effectiveness of the scheme. Despite this, Clarke's report was still recommended by the Defence Committee, and 'generally approved' by the Secretary of State for War, the Marquess of Hartington. Even if these amendments lessened the effect of Carnarvon's recommendations, the Commissioners could at least be satisfied that the issue still appeared to be receiving some government attention. The state machinery soon slowed its progress, however, and it took some five months for communications about the reports to pass between the War Office, Colonial Office, India Office, and Treasury. Moreover, the reply from the Treasury, when it eventually came, contained many errors including incorrect cost divisions, little mention of armaments, and no mention of the Cape, which was so prominent in the reports.¹³⁵

The confidentiality agreement allowing the Liberal government suppress the reports meant that there was little Carnarvon could do while the issue was passed between departments and slowly disappeared from public sight. While he had never intended them to become public, the secrecy of the reports was designed to allow the situation to be

¹³² Schurman and Beeler, *Imperial Defence*, 127-128.

¹³³ 'The Report on the Defences of British Coaling Stations Abroad; and of Colonial and Indian Defended Ports (1894)', TNA CAB 18/14.

¹³⁴ Schurman and Beeler, *Imperial Defence*, 118.

¹³⁵ *The Times*, 7 November 1884.

rectified without another naval scare, rather than allow the issue to be shelved completely. The government suggested that its reluctance to make the findings public was a matter of national security, but critics argued that any naval power could see for themselves the strength of British coaling station defences. There was clearly an ulterior political motive for the suppression of the reports, the circulation of which was limited even amongst ministers and colonial governors. To this end, W.C.B. Tunstall suggested that 'so serious were the conclusions and evidence' contained in the reports that censorship was the only way to protect the stance against defence spending that Gladstone had so stubbornly stuck to.¹³⁶

Carnarvon may have been bound by official secrecy, but when details of the reports, as well as other naval dossiers, were anonymously leaked in 1884 to W.T. Stead, editor of the *Pall Mall Gazette*, the government's stance on the issue came under scrutiny.¹³⁷ These were subsequently released as part of *The Truth About the Navy and Its Coaling Stations*, a series of editions which used the evidence of an anonymous insider ('one who knows the facts') to argue that British naval power had been so depleted that its supremacy was at stake. Stead, whose 'journalistic innovations [such] as bold headlines, pictorial illustrations, special interviews, provocative leading articles' had made the *Pall Mall Gazette* 'a force to be reckoned with in British politics', was already infamous for his campaigns and sensationalist scoops.¹³⁸ The series was remarkably detailed and totalled some sixty-four pages, including maps, tables and figures. Using these to illustrate Britain's naval weakness, the articles demanded a better fleet and more protection for naval infrastructure, and argued that this was 'the first and most pressing duty that lies before

¹³⁶ Tunstall, 'Imperial Defence, 1870-1897', in Rose, Newton, Benians, and Dodwell (eds.), *The Cambridge History of the British Empire*. Vol. 3, 232.

¹³⁷ The first was published in *Pall Mall Gazette*, 15 September 1884; an article particular to coaling stations was published on 16 October 1884.

¹³⁸ Joseph O. Baylen, 'Stead, William Thomas (1849-1912)', *Oxford Dictionary of National Biography*, Oxford University Press, 2004; online edn, Sept 2010 [http://www.oxforddnb.com/view/article/36258, accessed 9 July 2012].

the Government of the Empire'.¹³⁹ Beeler suggests that 'Stead succeeded in creating a public furore, not based on substantive evidence, but on scandal-mongering alarmism. This should come as no surprise; his business was to sell newspapers'.¹⁴⁰ Despite this, its argument was broadly accepted, and as *The Pall Mall Gazette* was widely seen as a leading Liberal newspaper, the criticism of Gladstone's naval policy was especially damaging.¹⁴¹

While the findings presented in *The Truth About the Navy* have been questioned, *The Truth About Our Coaling Stations*, published as part of the series, has not been so well scrutinised by historians.¹⁴² It berated the government's attitude to the Carnarvon Commission, and suggested that the sole reason it was being suppressed was that the 'publication might alarm the public and awaken them to a sense of the fool's paradise in which they live'. If the reports were published, it was argued 'no Ministry would be allowed to exist that assented to the continuance of our peril'.¹⁴³ Despite suggesting that he was unable to cite the Carnarvon Commission's reports, Stead clearly had access to many of its suggestions, even if his recommendations were not identical to those of the Commission. It is perhaps telling that he states that 'no Englishman, unless he be a member of the Cabinet is *supposed* to have access to its sombre pages', suggesting that it was leaked from the highest office. As a result of this access, Stead's article, which covers thirteen pages, cited many of the same points as Carnarvon, suggesting the figures had not been as manipulated as those in other parts of *The Truth About the Navy*. The edition did not merely provide statistics and warnings, but Stead also gave a succinct account of 'what should be done', setting out an agenda to reverse what he saw as a dangerous level of apathy towards defence. This agenda was split into four parts: the extension of the telegraph network to

¹³⁹ Stead, 'The Truth About the Navy and Its Coaling Stations by One Who Knows the Facts'.

¹⁴⁰ John Beeler, 'In the Shadow of Briggs: A New Perspective on British Naval Administration and W.T. Stead's 1884 "Truth About the Navy" Campaign', *International Journal of Naval History*, 1, no. 1 (2002).

¹⁴¹ *Pall Mall Gazette*, 22 September 1884; Dennis Griffiths, *The Encyclopedia of the British Press 1422-1992* (London: Macmillan, 1992), 453.

¹⁴² See for example Beeler, 'In the Shadow of Briggs'.

¹⁴³ Stead, 'The Truth About the Navy and Its Coaling Stations by One Who Knows the Facts'.

protect colonies against loss of communication in war, the defence of all first-class coaling stations, the co-operation of the self-governing colonies for defence and manpower, and decisions to be made regarding whether second-class coaling stations should be fortified or abandoned in the event of war.¹⁴⁴

While the articles contained many of the same statistics, maps and recommendations as Carnarvon's reports, their presence in the public domain meant their effect was very different. Even though many of the conclusions about British naval deficiency in terms of ship numbers were based on very questionable data, they 'ripped complacent reassurance ... to shreds', and established the idea of naval weakness firmly in the public mind.¹⁴⁵ The sheer weight of facts, figures, and revelations, as well as the claim that they had been informed by 'one who knows the facts' lent great credibility to the articles, and they appear to have been widely accepted at face value. Although sensationalist propaganda, Stead's campaign to expand the navy and implement a worldwide system of imperial defence was soon backed by other newspapers, notably *The Times*. The story was covered by both London and local newspapers, and found broad agreement in both the Liberal and the Conservative press.¹⁴⁶ *The Morning Post* analysed the claims by referring them to an unnamed insider in the Admiralty, as well as comparing the statistics with official naval estimates, and found that in both cases they 'agreed entirely'.¹⁴⁷ The next day, it ran a piece by Admiral Sir John Hay MP which again corroborated the facts.¹⁴⁸ Pressure continued to mount on the Liberal government: on 22

¹⁴⁴ Ibid.

¹⁴⁵ Beeler, 'Steam Strategy and Schurman', in Kennedy, Neilson, and Schurman (eds), *Far-Flung Lines*, 37; Beeler, *British Naval Policy in the Gladstone-Disraeli Era*, 265; Schurman and Beeler, *Imperial Defence*, 130.

¹⁴⁶ 'Press Reaction', *Pall Mall Gazette*, 22 September 1884. Analysis of the articles was published in *Liverpool Courier*, *Liverpool Post*, *Manchester Guardian*, *Manchester Courier*, *Leeds Mercury*, *Sheffield Telegraph*, *York Herald*, *Yorkshire Post*, *Newcastle Daily Journal*, *Northern Echo*, *Tyneside Echo*, *Nottingham Journal*, *Portsmouth Evening Mail*, *Portsmouth Times*, *Bristol Times*, *Western Daily Mercury*, *Western Daily Press*, *Hampshire Telegraph*, *Isle of Wight Observer*, and *North-Eastern and Daily Gazette*.

¹⁴⁷ 'The Truth About the Navy', *Morning Post*, 19 September 1884.

¹⁴⁸ Ibid.

October, a request from the Queen to Gladstone further forced the issue, and in December J.C.R. Colomb wrote to *The Times* to urge more progress on the coaling question.¹⁴⁹ It is particularly significant that, despite the controversy he caused, Stead claimed in a later compilation of the articles that even after two months there had been 'no refutation, official or otherwise'.¹⁵⁰

The Resurgence of the Coal and Imperial Defence Question

Although these disclosures were tantamount to a breach of government secrecy, there seems to have been little popular clamour for reprisals against those involved. In fact, on the contrary, *The Times*, despite questioning the method of releasing details of the Commission's conclusions, justified the publication with a damning article on the government's handling of the Commission's reports. It suggested that

the end may have justified the means, and, if ... we can bring home certain plain facts to the mind of the country, disclosures otherwise impolitic may be condoned. Something at least has been gained. The question of increasing the Navy is to be considered; we are a promised a measure of defence for certain coaling stations.¹⁵¹

The case of *The Truth About the Navy* shows how the advent of investigative journalism, pioneered by Stead, had begun to challenge the notion of government secrecy. It gave those who were trusted with confidential knowledge the opportunity to release information into the public sphere should they feel it in the public interest, or perhaps more cynically, the interests of the groups they represented. As a result of this, it was now

¹⁴⁹ Cited in Schurman and Beeler, *Imperial Defence*, 130. The Queen generally disagreed with Gladstone's foreign policy, so this was not exceptional. Parry, *The Politics of Patriotism*, 337-338; Pearce and Stewart, *British Political History*, 47; 'Imperial Strategy', *The Times*, 2 December 1884.

¹⁵⁰ Stead, 'The Truth About the Navy and Its Coaling Stations by One Who Knows the Facts'.

¹⁵¹ *The Times*, 7 November 1884; TNA, CO 323/357.

possible to challenge more effectively what Martin Daunton has described as the 'gate keepers' of knowledge.¹⁵² This ability to bypass the confines of secrecy was acceptable if it was for a just cause, some argued, and it is perhaps telling that several significant politicians and high-ranking naval officers had anonymously contributed information to Stead's article.¹⁵³

The clamour in the press over the revelations forced Gladstone's hand, and he announced to Parliament in late October that he would shortly divulge the government's plans as a response to the Commission's reports. Perhaps sensing another delay, Carnarvon announced he would ask a question about these measures in Parliament on 13 November and thus the issue was not allowed to disappear.¹⁵⁴ The government's response was a hastily prepared alternative policy based on the report of Clarke. Although this policy was progress of sorts, the suppression of the original reports meant that they could not be directly compared with the new policy in Parliament; and Gladstone was able to offer a piecemeal alternative to Carnarvon's recommendations, yet still appear to be taking the issue seriously.¹⁵⁵ Carnarvon unsurprisingly rejected the proposals completely, saying he 'disclaim[ed] all responsibility for the proposals now made in this Treasury paper; and ... in my humble opinion the estimate of work to be done is really wholly below the needs of the case and, in one word, illusory'. It is perhaps telling that this was greeted by cheers in the House, showing how far opinion had shifted on imperial defence. Moreover, he asserted that 'whatever the expenses of the Government in this matter may be on paper, in practice, they will be found to be nil'.¹⁵⁶ In his mind, the Commission's recommendations

¹⁵² M.J. Daunton, 'Introduction', in M.J. Daunton (ed.), *The Organisation of Knowledge in Victorian Britain* (Oxford: Oxford University Press, 2005), 15. While Daunton was discussing those who controlled access to journals, the idea still works well outside this context.

¹⁵³ Hamilton, *The Making of the Modern Admiralty*, 177.

¹⁵⁴ Reported in *The Times*, 24 October 1884.

¹⁵⁵ Reported in *The Times*, 14 November 1884.

¹⁵⁶ Ibid.

had been at the minimum cost to be effective, and thus, this Liberal alternative could not solve the problem.

Although he could register his disapproval to the scheme, Carnarvon found himself frustrated by the bounds of secrecy, suggesting that 'in arguing this case, I am greatly fettered and restrained'. He further explained the nature of the constraints suggesting he found

it extremely difficult to discuss a Parliamentary paper such as this without alluding to the view which the Commission held. It seems to me that it would have been very fair had I been allowed to give simply what I may call the corresponding and comparative figures to those given by the Government ... but the First Lord of the Admiralty appealed to me ... not to use one single figure out of that report, and to treat the report from first to last as an absolute secret.¹⁵⁷

Clearly, although he remained polite and respectful in tone, Carnarvon felt that the secrecy surrounding the reports was merely a gag on those able to criticise the government's position on the coaling issue. Unable to change the stance of the government over the secrecy of the reports, Carnarvon then issued a stark warning to the government about the confidentiality of the reports:

I earnestly hope that my noble friend and other Cabinet Ministers are themselves as careful as they can be in their custody of these confidential papers, for it has been my fortune several times to become aware of papers of the highest importance ... having found their way into the possession of foreign Governments.¹⁵⁸

¹⁵⁷ Ibid.

¹⁵⁸ Ibid.

This concern was perhaps genuine, but Carnarvon was also suggesting that the confidentiality of the reports – no matter what precautions were taken – could not be guaranteed, as had been seen in the case of Stead's revelations. Thus it would be more beneficial to address the problems directly than to risk a potential catastrophe if the details found their way into the public domain.

While Gladstonian liberalism had won the battle, it could not win the war. Gladstone had managed to avoid ignominy in the debate after Carnarvon's speech, but there were already signs that the Liberal party was diverging in its vision of imperial policy. The ageing Prime Minister could therefore only halt the emergence of a coal consciousness for so long. Although it was the Irish question that eventually split the Party, the 'coming men', such as Dilke, Chamberlain, and Hartington, were already advocating a 'liberal imperialism' that was at odds with Gladstone's stance on imperial matters. Promoting a closer unity with the colonies, Parry suggests that these younger Liberals were increasingly 'happy to play the imperial card'.¹⁵⁹ Importantly, unlike Disraeli's 'false imperialism', Carnarvon's recommendations for coaling station defence were not only compatible but beneficiary to this idea of this liberal, or 'true', imperialism. Indeed, a closer imperial union was a necessity if Britain was to achieve a safe coal supply in war; and there was an obvious need for co-operation with the self-governing colonies in planning and implementing imperial defence.¹⁶⁰ Furthermore, imperial defence as prescribed by the Commission largely avoided the moral issues associated with pro-imperialism, unlike the concurrent 'scramble for Africa'. Indeed, figures like Joseph Chamberlain were keen to highlight the difference between imperialism and colonialism, and therefore show that it was possible to oppose imperial expansion, but still support improvements in imperial defence.¹⁶¹

¹⁵⁹ Parry, *The Politics of Patriotism*, 369.

¹⁶⁰ See Parry, 'Liberalism and Liberty', in Mandler (ed.), *Liberty and Authority in Victorian Britain*, 72.

¹⁶¹ Duncan Bell, 'Empire and Imperialism', in Gareth Stedman Jones and Gregory Claeys (eds), *The Cambridge History of Nineteenth-Century Political Thought* (Cambridge: Cambridge University Press, 2011), 87.

Even if it was becoming increasingly feasible to be an imperial Liberal, this vision was at odds with the views of older members of the party. Thus, although parts of the Liberal party were increasingly in favour of increases in naval defence, a large-scale scheme, as seen under the Conservatives in the later 1880s, was prevented by Gladstone who by now – even Kimberley suggested – was ‘really the sole obstacle’.¹⁶² Indeed, although this type of imperialism had originated with the Conservative Party, over time, and in light of a changing world and empire, it began to be accepted by many of those in the Liberal party. In fact, it was Gladstone’s attacks on ‘imperialism’ and general ambivalence towards the empire that led to the association of the Liberals with anti-imperialism, an association that was ‘highly misleading’.¹⁶³ In fact, ‘by the final quarter of the nineteenth century, the complex and contested relationship between liberalism and imperialism had become all but unmanageable, exposing as never before the contradictions that cut through the Victorian empire’.¹⁶⁴ Increasingly, older Liberals such as Derby, Granville, and particularly Gladstone, were becoming what Parry describes as ‘busted flushes’, and because of their dwindling influence in imperial matters there were small but significant measures taken for coaling station defence after 1884.¹⁶⁵ These were based on the recommendations of Clarke, rather than Carnarvon, but Votes of Credit had finally allowed defensive works at coaling stations to begin.¹⁶⁶ Perhaps prematurely, *Funny Folks*, an early satirical comic, celebrated the change in attitude towards naval matters that had occurred since *The Truth About the Navy* was published in late 1884. In a poem named

¹⁶² Memorandum from Childers to Gladstone, 18 December 1884, cited in Parry, *The Politics of Patriotism*, 357.

¹⁶³ Cain, ‘Radicalism, Gladstone, and the Liberal Critique of Disraelian “Imperialism”’, in Bell (ed.), *Victorian Visions of Global Order*.

¹⁶⁴ Dane Kennedy, ‘The Great Arch of Empire’, in Hewitt (ed.), *The Victorian World*, 57-72.

¹⁶⁵ Parry, *The Politics of Patriotism*, 367-370.

¹⁶⁶ Previous funds had been raised both through Votes of Credit and Colonial contributions, and had totalled £257,778. See ‘The Report on the Defences of British Coaling Stations Abroad; and of Colonial and Indian Defended Ports (1894)’, TNA, CAB 18/14.

in honour of Stead's article, it suggested that the effects of the leak would lead Britain to have no need to fear Russia:

If Russia dare
To war declare,
Then you may take your davy,
When we're her foe
We'll let her know
The 'Truth about the Navy.'

With forts surrounded,
Shipping pounded,
Russia's trade contracts,
The Czar will be,
Spite PMG
The 'One Who Knows the Facts.'¹⁶⁷

Although his revelations were certainly key, the cementing of the idea of naval and imperial weakness in the public consciousness was not solely the work of Stead. Indeed, it is imperative to see the ideological change visible in the Liberal party and the election of the imperialist Conservative party under Salisbury in the late 1880s as a reflection that popular opinion was changing. After all, it was an increasingly pro-imperial electorate, expanded by the Reform Act of 1884 to include the largely imperialist working class, which decided their political futures. This pro-imperialism was not limited to politics and elections, but was increasingly visible in popular culture, which both augmented and reflected pro-imperial politics. This was especially through an enthusiasm for the armed forces and, in particular,

¹⁶⁷ 'The Truth About the Navy', *Funny Folks*, 2 May 1885, 138. 'Davy' refers to an affidavit.

popular navalism as illustrated by events such as the inauguration of a Royal Tournament in 1880.¹⁶⁸ Moreover, the music hall became more 'jingoistic' and by the mid-1880s the appeal of pro-imperial adventure novels was well established.¹⁶⁹ The presence of an increasingly imperialistic ideology is further exemplified by the foundation of the Imperial Federation League in 1884 and the first Colonial Conference in 1887.

This pro-imperialism was a reaction to the growing public perception of the fragility of the empire, which had resulted from a number of events, fears, crises, and propaganda. This was, of course, in no small part due to the scandal caused by Stead, but this was worsened by the fragility of the wider international political situation, and Britain's perceived inability to impose itself upon it. This was most evident in the disintegrating Ottoman Empire, and in particular Egypt. Britain, it was felt, needed to assert its authority by force, as a statement to both France and to rest of the world. The situation had become so serious that even Gladstone had felt compelled to intervene in Egypt in 1882, but in general his detached foreign policy was becoming increasingly tarnished by attacks from not only the opposition, but also from his own party.¹⁷⁰ Not only was there criticism of the Liberal attitude to addressing defence worries, but existing British defence commitments, particularly in the eastern Mediterranean, were taking an increasing toll on the treasury.¹⁷¹ By 1885, income tax was a third higher than it had been under Disraeli in 1880, and faith in the ability of liberal economic values to provide international and commercial security was waning.¹⁷² There were also signs that significant imperial tensions were appearing throughout the world, not least in the ensuing scramble for Africa, which precipitated a growing feeling that Britain needed to assert itself as a world power in order to keep its

¹⁶⁸ C.A. Bayly, *The Birth of the Modern World*, 464; Hamilton, *The Making of the Modern Admiralty*, 177.

¹⁶⁹ Parry, *The Politics of Patriotism*, 344.

¹⁷⁰ *Ibid.*, 354, 367.

¹⁷¹ *Ibid.*, 372.

¹⁷² Parry, 'Liberalism and Liberty', in Mandler (ed.), *Liberty and Authority in Victorian Britain*, 99.

dominant position.¹⁷³ Particularly damaging was the feeling that British prestige had been harmed by events such as the death of General Gordon in Khartoum in 1885, which was laid squarely at the feet of Gladstone by Salisbury and the Conservatives.¹⁷⁴ These events had the cumulative effect of cementing an idea of imperial weakness in the public mind, and led the media to become full of suspicion of other European powers' imperial intentions, which shifted the focus away from Europe and into the wider empire.¹⁷⁵

It was not just a belief in the fragility of Britain's land-based empire that increased coal consciousness, but also a fear of foreign maritime threats. In particular, the adoption of *Jeune École* by the French navy, which explicitly looked to attack British commercial shipping, caused panic in the popular press.¹⁷⁶ This was exacerbated by rumours of a Franco-German naval alliance.¹⁷⁷ What appeared to be a direct and transparent threat to British trade gave more momentum to those advocating spending on coaling station defences, as well as those of the blue-water school arguing for a general increase in naval spending. Indeed, such threats, they argued, showed that adequate protection for commerce from the Royal Navy could only be achieved with the proper defence of coaling stations, as outlined in the Carnarvon Commission.

As well as public outcry, there was also pressure on the government to act on coaling station defence from the City and other commercial interests. Britain's economy had been strengthened by a large increase in maritime trade in the second half of the nineteenth century, making the need to control the sea for the purposes of trade, and therefore the navy, increasingly important.¹⁷⁸ Not only was it imperative that seaborne

¹⁷³ Parry, *The Politics of Patriotism*, 345-349.

¹⁷⁴ Green, *The Crisis of Conservatism*, 61; Parry, *The Politics of Patriotism*, 360.

¹⁷⁵ See, for example Bayly, *The Birth of the Modern World*, 228-243; Parry, *The Politics of Patriotism*, 323, 355.

¹⁷⁶ Beeler, 'Steam Strategy and Schurman', in Kennedy, Neilson, and Schurman (eds), *Far-Flung Lines*, 232; Parkinson, *The Late Victorian Navy*, 103-105.

¹⁷⁷ Parry, *The Politics of Patriotism*, 356.

¹⁷⁸ Palmerston famously remarked that 'it is the business of the government to open and secure the roads for the merchant'.

trade remained open and undisturbed to sustain Britain's economy but, because it relied on imported food, Britain's very existence appeared to hinge on this.¹⁷⁹ With a huge value of trade resting on the strength of the navy, commercial and shipping interests such as Donald Currie had grave concerns about the coal question as has been seen.¹⁸⁰ Furthermore, the opening of the African interior to trade in the 1870s and 1880s meant there was ever more demand from commercial interests for naval protection for those looking to exploit the riches of the continent.¹⁸¹ While the coaling question was not completely commercially driven, it would be naive to suggest that 'gentlemanly capitalists' did not have personal interest in the defence of coaling infrastructure. The closeness of business and government, at the top of the gentlemanly order, meant that not only did they often have 'a common view of the world', but that business interests were often closely intertwined with political ones.¹⁸² Moreover, by 1880 around half of the Conservative party had links with the military establishment, and thus even many of those without links to commercial shipping held concerns about deficiencies in imperial defence.¹⁸³

As a result of these factors, a coal consciousness had largely grown into a 'coaling consensus' from the middle of the 1880s. Such a change in attitude could do little on its own to strengthen imperial defence, however. This required government action, and thus the results of this are seen in 'the silent metamorphosis taking place in long established arms of government' as the coal question was 'placed under or; we might say, grew into their jurisdiction'.¹⁸⁴ As a result of this, we see, really for the first time, serious and prolonged discussions about coaling stations, home ports, dockyard works, and

¹⁷⁹ Jackie Fisher in 1904 exclaimed 'If the Navy is not supreme, no army, however large, is of the slightest use. It is not invasion we have to fear if our Navy is beaten, it's starvation!'

¹⁸⁰ Currie, *Maritime Warfare*.

¹⁸¹ Parry, *The Politics of Patriotism*, 345.

¹⁸² See Cain and Hopkins, *British Imperialism*, 28-29.

¹⁸³ Green, *The Crisis of Conservatism*, 66.

¹⁸⁴ MacDonagh, 'The Nineteenth Century Revolution in Government', in Stansky (ed.), *The Victorian Revolution*, 9.

shipbuilding in Admiralty board meetings during November 1884, which had for so long been conspicuous by their absence.¹⁸⁵ In fact, these discussions were completely at odds with the Admiralty's attitude to coaling defence previously, which was largely to leave the issue to the War Office, despite its importance to the navy's ability to function effectively.¹⁸⁶ The growing coal consciousness of the Admiralty can also be seen beyond the issue of defence when, in the early 1880s, the shipment of coal to stations was formalised, with a proper structure that required formal audits and requests to be sent and stored.¹⁸⁷

Despite this agitation, pro-imperialism, and growing coaling consensus, only small changes had occurred in the year after Stead's article, even when Lord Salisbury and the Conservative party came to power in 1885, largely because they were hamstrung by a minority government. Indeed, it was not until 1886 that the defining moment for imperial defence, and indeed the coal question, occurred when the Liberal party split over the Irish question, and the Conservatives came to power with a majority. They were able to develop imperial and naval sentiment into an imperial defence policy that prioritised naval security over budgetary control.¹⁸⁸ Furthermore, the Liberals in opposition were more imperial minded, and with Gladstone finally coming to the end of a hugely influential career, the Liberal party was rid of the main element of resistance to increased spending on imperial defence.¹⁸⁹

The fall of Gladstone, who was 'always ready to reduce service expenditure', allowed, in particular, more rapid changes in the Admiralty.¹⁹⁰ With the determination of the Conservative government to address the naval and imperial needs of Britain, Lord

¹⁸⁵ Hamilton, *The Making of the Modern Admiralty*, 177.

¹⁸⁶ Schurman and Beeler, *Imperial Defence*, 52.

¹⁸⁷ This is discussed in more detail in the next chapter. See also Wilson, 'Fuelling the Steam Navy', 41.

¹⁸⁸ This was not accepted unanimously by all Conservatives. Notably, Lord Randolph Churchill resigned from his position as Chancellor of the Exchequer in 1886 over defence costs. See Matthew Allen, 'The Foreign Intelligence Committee and the Origins of the Naval Intelligence Department of the Admiralty', *Mariner's Mirror*, 81, no. 1 (1995), 74.

¹⁸⁹ He was Prime Minister for eleven of the twenty years from 1868 to 1887. Schurman and Beeler, *Imperial Defence*, 10.

¹⁹⁰ Hamilton, *The Making of the Modern Admiralty*, 171.

George Hamilton was installed as First Lord of the Admiralty. Tasked with reforming the Admiralty after 1886, he looked to address what Paul Smith has described as the 'chaos' left by the previous Gladstone ministry.¹⁹¹ These reforms had several significant effects. The most important was a policy of prioritising imperial need over budgetary control, which not only allowed for a more efficient bureaucracy, but also the ability to plan and execute ambitious and expensive naval building projects, both in terms of ships and naval works.¹⁹² To facilitate these, the last two decades of the nineteenth century saw the growth of permanent naval committees in general: in 1879 there were just three, but by 1899 there were ten, giving the Admiralty greater capacity to deal with specialist issues such as coaling.¹⁹³ Furthermore, Hamilton brought a growing professionalism to the Admiralty, allowing it to deal more efficiently and effectively with the challenges of a changing world. He spoke of conducting Admiralty affairs 'along business lines', and there were regular references to 'general principles', 'continuous policy', and 'forethought', highlighting an increased professionalism and purpose to Admiralty business.¹⁹⁴

While developments in the Admiralty were important, its ability to communicate these concerns to other government departments allowed real progress to be made. This increase in efficiency and minimising of confusion was achieved by the effects of a growing appreciation of the importance of the centralisation of government bodies in the late nineteenth century. This was particularly important for addressing the coal question, which was always complicated by the delays and inactivity caused by its interdepartmental nature. In order for the issue to be effectively dealt with, the Admiralty needed to be able to communicate its concerns directly to the other relevant offices of government, in particular the War Office, which was responsible for the fortification and armament of

¹⁹¹ P. Smith, 'Ruling the Waves: Government, the Service and Cost of Naval Supremacy, 1885-99', in P. Smith (ed.), *Government and the Armed Forces in Britain, 1856-1990* (London: Hambledon Press, 1996).

¹⁹² Ibid., 36.

¹⁹³ Hamilton, *The Making of the Modern Admiralty*, 187.

¹⁹⁴ Ibid., 208.

coaling stations. The formation of the Colonial Defence Committee during the Russian scare of 1885, which was subsequently expanded and made permanent, largely provided this centralised structure for intra-governmental dialogue.¹⁹⁵ The effectiveness of this body was also further improved by inviting men with special colonial experience to give information on discussions, allowing the Committee to consider matters with expert opinion.¹⁹⁶ The system put in place meant that these issues could be discussed by representatives of the Treasury, the Admiralty, the War Office and the Colonial Office together, ensuring 'a harmony of action and continuity of policy'.¹⁹⁷ The presence of the Colonial Defence Committee was consequently of particular importance in the instigation of defence construction. Its permanent status allowed the committee to look beyond coaling station defences as a temporary measure, and to examine how those built in the wake of Clarke's report of 1883 could be expanded and improved.

Although the Colonial Defence Committee has been seen as a 'pale forerunner' of the later Committee of Imperial Defence formed at the start of the twentieth century, it was still an important, if small, step towards improving the co-operation between governmental departments and between Whitehall and the self-governing colonies.¹⁹⁸ Schurman argues that the Committee failed to 'place naval functions in their proper relationship with imperial defence', but while a heavy War Office majority did skew the focus of the body, it was still crucial to the completion of defences at both coaling stations and colonial ports.¹⁹⁹ An 1894 report concluded that:

¹⁹⁵ This is not to be confused with the 1878 committee of the same name lead by Milne, but was an entirely different body.

¹⁹⁶ 'Measures taken in relation to Colonial Defence – Printed for 1887 Colonial Conference', TNA, PRO 30/6/131.

¹⁹⁷ Ibid.

¹⁹⁸ Burroughs, 'Defence and Imperial Disunity', in Porter (ed.), *The Oxford History of the British Empire. Vol. 3, the Nineteenth Century*, 335.

¹⁹⁹ Schurman and Beeler, *Imperial Defence*, 134.

[the Committee] has dealt with the garrisons of all the defended ports abroad, and with the schemes prepared by local committees for placing these ports in a state to resist attack, by carrying out provisional defences, and by drawing up the necessary directions and orders, to insure, on the outbreak of war, a completely organised system of defence with the means actually at the disposal of the military authorities.²⁰⁰

The work of the Committee was both extensive and geographically diverse, considering defences, telegraphic communications, garrisons, armament and a whole host of other facets of defences at imperial coaling stations as diverse as Simon's Town and Esquimalt.²⁰¹ Although it was reliant on a change in government to provide extensive funding for works, and its work was less comprehensive and immediate than Carnarvon had recommended, it was the Colonial Defence Committee which was largely responsible for both the planning and the completion of coaling station defence before the end of the nineteenth century.

The security of coaling stations was not the only facet of the coal question, however, and, as well as witnessing the beginning of policies to address the defence of coaling stations, the mid-1880s also saw a reassessment of the situation regarding Britain's readiness for war. Although progress was being made on their defences, secure coaling stations would be useless if they were not amply supplied in war. The ability to mobilise the Royal Navy at full strength required knowledge of the status and security of Britain's naval infrastructure, as well as information on shipping and foreign navies.²⁰² Thus, there was a need to collect, collate, and analyse both British and foreign naval intelligence. There were therefore calls for a specialised naval intelligence department that would supply

²⁰⁰ 'The Report on the Defences of British Coaling Stations Abroad; and of Colonial and Indian Defended Ports (1894)', TNA CAB 18/14.

²⁰¹ 'Memoranda by the Colonial Defence Committee, 1885 to 1904', TNA, CAB 7/7. Minutes can be found in CAB 8/1.

²⁰² Allen, 'The Foreign Intelligence Committee and the Origins of the Naval Intelligence Department of the Admiralty', 65.

intelligence on foreign navies and ensure Britain was able to mobilise effectively at short notice.

The want of an efficient and effective naval intelligence division was not new in the mid-1880s, but previous attempts to address the issue had largely failed. Before 1882, it was an ad hoc affair, relying on a couple of naval attachés and the reports of Royal Navy officers on hostile shipping. The Admiralty was slow to organise an intelligence division, with the first proposal for a specialist staff made in 1879, some five years after the War Office had done the same.²⁰³ The problems caused by this lack of a specialised department were particularly shown during the Carnarvon Commission, which had to rely on intelligence from the War Office, as the Admiralty was unable to provide any. Thus, along with recommendations for defensive works, the Commission explicitly recommended the formation of a new, larger body to gather naval intelligence.²⁰⁴

As a response to this, the Foreign Intelligence Committee (FIC) was formed in 1882, although it largely failed to alleviate the paucity of data collected by the Admiralty.²⁰⁵ This was principally because the effectiveness of government bodies relied not only on the specialisation of roles, but also on a growth of a specialist staff. Thus, when the FIC was formed in 1882, despite being part of the specialisation of roles within the Admiralty, the lack of funding, which necessitated an attaché be withdrawn to run the body in London, meant that the naval intelligence situation arguably worsened.²⁰⁶ As a result, it did little to help solve the problems that had been highlighted by Carnarvon. In fact, because of resources, the FIC had a very limited role, which in general consisted of reporting on the

²⁰³ TNA guide to intelligence records, <http://www.nationalarchives.gov.uk/records/research-guides/intelligence-records.htm>.

²⁰⁴ Allen, 'The Foreign Intelligence Committee and the Origins of the Naval Intelligence Department of the Admiralty' 66-68.

²⁰⁵ Ibid.

²⁰⁶ Hamilton, *The Making of the Modern Admiralty*, 188; Allen, 'The Foreign Intelligence Committee and the Origins of the Naval Intelligence Department of the Admiralty', 69-71.

activities of other nations' fleets.²⁰⁷ While it did not necessarily improve naval intelligence, its development was typical of the growing professionalisation of parts of the late-nineteenth-century British government, and represented, at least, an attempt to formalise the collection of naval intelligence.

As a result of these difficulties, there was a growing unease with the lack of intelligence available within the Admiralty, as it severely limited its ability to effectively plan for a naval war. This issue was particularly acute during the Panjdeh Incident, in which Russia invaded part of Afghanistan, precipitating another war scare in 1885 at the height of the 'great game'. More pressure grew when Russia launched a new class of armoured cruiser, ideal for commerce raiding in the same year.²⁰⁸ This created a 'changing strategic environment which demanded new, more complex solutions'.²⁰⁹ That this Russian scare caused the reappearance of the mobilisation issue in 1885 says much about the shambolic and confused situation the Royal Navy found itself in.²¹⁰ Although peace was eventually kept successfully, the Admiralty had to resort to ad hoc measures to mobilise the navy. This included the purchase of coal from the local vicinity of the coaling stations, which in nearly all cases would have been of inferior quality to its usual supply, causing increased consumption and decreased performance of the fleet.²¹¹

The same year, Junior Naval Lord Charles Beresford, undoubtedly alarmed by the chaotic response to the war scare, wrote to the Admiralty Board to register his concerns about this issue. His intention was to warn of 'the perilous absence of any plan or preparation for war, and the gravity and imminence of the danger which may result to this

²⁰⁷ The FIC reports contain information on Germany, France, Egypt, Russia, Italy, Turkey, Korea, and Japan. Some report about defences of the Mediterranean and Australia, but none specifically about coal. 'Reports of the FIC', TNA, ADM 231.

²⁰⁸ Beeler, 'Steam Strategy and Schurman', in Kennedy, Neilson, and Schurman (eds), *Far-Flung Lines*, 37.

²⁰⁹ Allen, 'The Foreign Intelligence Committee and the Origins of the Naval Intelligence Department of the Admiralty', 65.

²¹⁰ 'Report of the Preparations Made by the Admiralty in Anticipation of an Outbreak of War in the Spring of 1885', TNA, ADM 116/3409.

²¹¹ Ibid.

country from such a state of affairs'. In response to this he suggested the formation of a new Naval Intelligence Branch.²¹² Once again, it was Stead and the *Pall Mall Gazette* that acted as a catalyst to change, when the memorandum was leaked in October 1885.²¹³ It has been strongly suggested that the memorandum was, in fact, leaked by Beresford himself, although the Admiralty could not, or perhaps more accurately would not, find enough evidence to substantiate any claim against him.²¹⁴ Although, again, the leak represented a serious breach of government security, it did not seem to bring any recriminations, with Beresford continuing in his role. Instead, as intended, it sped up the process of the establishment of a more complete branch for naval intelligence.

Many of the ideas and recommendations contained in Beresford's memorandum were not new at all. A similar memorandum had been produced in 1880 by Evan Macgregor, who at that time was serving as Head of the Military Branch in the Admiralty. This earlier paper concentrated on issues surrounding the protection of coaling and, in particular, whether gunboats should be sent in war to protect coaling stations. Pertinently, it also questioned the arrangements in place for the protection of commercial coal in the event of war.²¹⁵ Little seems to have come of this memorandum, however, and the fact it is included with Beresford's memorandum suggests it was shelved and ignored, along with the similarly timed Carnarvon Commission reports.

Beresford's memorandum somewhat alarmingly suggested that the scare had shown 'what we should actually require ... in a war with a second-rate maritime power, [is] *over and above* what is now at our disposal'.²¹⁶ He suggested, however, that the problem went further than merely a question of supply. It was 'incredible', he argued, that unlike France, Germany, Russia, Austria and Italy 'no steps [had] been taken to organise or

²¹² 'Lord Charles Beresford's Paper on War Organisation', TNA, ADM 116/3106.

²¹³ *Pall Mall Gazette*, 13 October, 1886.

²¹⁴ Allen, 'The Foreign Intelligence Committee and the Origins of the Naval Intelligence Department of the Admiralty', 72.

²¹⁵ 'Evan Macgregor's memorandum on Naval Mobilisation, December 1880', TNA, ADM 116/3106.

²¹⁶ 'Lord Charles Beresford's Paper on War Organisation', TNA ADM 116/3106.

prepare any method or plan for showing how or where these *absolutely necessary* requirements are to be obtained [in war]'.²¹⁷ A body needed to be set up, he argued, to ensure up-to-date preparations were in place for men, ammunition, coals, and provisions, especially as Britain, more than any other power, had such scattered and extensive possessions and trade routes to protect.

The memorandum identified key issues that currently existed with war mobilisation. Out of these, several relate to the problems associated with coaling warships. In terms of personnel, there was a great need for more stokers, who would be crucial if warships were to be successfully and swiftly deployed worldwide. In terms of organisation for war, there was no plan as to how Royal Navy ships might obtain coal in war, or from where they could obtain it. Furthermore, there were no detailed lists of how much coal was stored at each station, both for use and as spare, or any details of where each station was supplied from, or who the supplier was. To resolve these issues, and therefore allow Britain to be fully ready to mobilise efficiently in the case of war, Beresford suggested a need for 'framing a plan of naval campaign suitable for each station in the event of war with different countries'.²¹⁸

To deal effectively with such an increased workload, Beresford recognised there would need to be an increase in personnel specialising in intelligence at the Admiralty. Of course, there was already an intelligence body, the FIC, but he suggested it be greatly expanded to a staff of thirteen. In effect, it was a completely new body, and therefore perhaps justifiably he suggested it be renamed the Naval Intelligence Division (NID).²¹⁹ With the pressure resulting from the leak of the memorandum, Beresford's suggestion became a reality, and the FIC became the NID in 1887. The new body was able, with the new specialist positions, to diversify its scope, and as part of this it was split into two divisions:

²¹⁷ Ibid.

²¹⁸ Ibid.

²¹⁹ 'Lord Charles Beresford's Paper on War Organisation', TNA ADM 116/3106.

Foreign intelligence and Mobilisation. This was of course only possible due to another significant change in British government policy, the ability for the Admiralty to access more governmental funds.

The NID did not have the immediate effect that Beresford had envisaged, however. A lack of delegation from the Senior Naval Lords, combined with a concentration on routine tasks, rather than wider strategic issues, meant that when, in 1888, a dispute between France and Italy threatened war, Britain still relied on foreign governments for intelligence.²²⁰ As a result of this, Matthew Allen suggests that 'a decade of reform had failed to address the basic intelligence gathering problem'.²²¹ Even if foreign intelligence was slow to improve, plans for mobilisation, and therefore coaling in war, showed more obvious signs of improvement. The Jubilee Review of 1887 was followed by annual naval manoeuvres, which not only provided the navy with valuable mobilisation experience, but also highlighted any flaws in Britain's potential ability to wage a major maritime war effectively.²²² Furthermore, monthly naval intelligence meetings between the Naval Lords and the NID facilitated the communication of specialist knowledge, allowing issues of coaling in war to receive greater consideration by the later 1880s. This meant the concerns of the NID could be heard by the Admiralty Board, and if necessary, the Colonial Defence Committee, and moreover allowed those bodies to receive assurances from the NID on Britain's readiness for war.²²³

It was, however, the restructuring of the national debt by the Conservative government in 1888 that enabled the most significant measures resulting from the rise of coal consciousness, as this allowed the government to spend heavily without having to

²²⁰ Allen, 'The Foreign Intelligence Committee and the Origins of the Naval Intelligence Department of the Admiralty', 74-75.

²²¹ Ibid., 75.

²²² Ibid., 73-75.

²²³ Hamilton, *The Making of the Modern Admiralty*, 185.

raise taxes.²²⁴ This made it much more difficult for the Treasury to justify curtailing defence expenditure as it had done in the 1870s, and as a result, in the 1880s and 1890s, naval estimates could increase markedly.²²⁵ Although there had been some progress in the building of coaling defences through Votes of Credit, the ability of the government to increase spending allowed it to pass the Imperial Defence Act in 1888, which stipulated a permanent source of funds for such works.²²⁶

The Act sought 'to provide for the completion without delay of the defence of the coaling stations abroad required for the use of Your Majesty's navy, and the speedy completion of the armament necessary for the above purposes'.²²⁷ To accomplish this, it set aside £2,600,000 for wide-ranging defence measures, which were largely completed by 1896. The following year saw the more famous Naval Defence Act passed, which put into law that the Royal Navy must maintain a number of battleships at least equal to the combined strength of the next two largest navies, the so-called 'two power standard'. While this has been seen as the defining naval act of the late nineteenth century, the protection of coaling stations through the Imperial Defence Act was a crucial partner, because, as Carnarvon had stated in 1882, 'no addition to the number and fighting power of your Majesty's ships will make up for the want of coaling-stations'.²²⁸ That these Acts were both implemented reflects that, by the late 1880s, naval strength had become

²²⁴ Sumida, *In Defence of Naval Supremacy*, 12-14; Lambert, 'Economic Power, Technological Advantage, and Imperial Strength'. Other key developments allowed Britain to have the capability to complete these ships, and thus pass the Act. The first of these was the adoption of the theoretic ideas of stability, strength and hydrodynamics put forward by Froude, Barnes, and Barnaby, and Reed and White. The second were the dockyard reforms of William White, which made Britain the fastest and cheapest battleship builder in the world. See David K. Brown, 'Era of Uncertainty, 1863-1878', in in Gardiner and Lambert (eds), *Steam, Steel & Shellfire*, 75-94; John Roberts, 'The Pre-Dreadnought Age 1890-1905', in in Gardiner and Lambert (eds), *Steam, Steel & Shellfire*, 114; M.J. Daunt, '"The Greatest and Richest Sacrifice Ever Made on the Altar of Imperialism": The Finance of Naval Expansion, c. 1890-1914', in Andrew Lambert, Jan Rüger, and Robert J. Blyth (eds), *The Dreadnought and the Edwardian Age* (Farnham: Ashgate, 2011), 31-50.

²²⁵ Peden, 'The Treasury and Defence of Empire', Kennedy (ed.), *Imperial Defence*, 76.

²²⁶ These are discussed in some detail in 'The Report on the Defences of British Coaling Stations Abroad; and of Colonial and Indian Defended Ports (1894)', TNA CAB 18/14.

²²⁷ Imperial Defence Act, 1888.

²²⁸ 'Summary of Carnarvon Reports', TNA, PRO 30/6/131.

inescapably connected with worries about imperial security. Moreover, coal had been recognised as an integral part of the ability of the navy to protect British interests. Thus we can conclude that by the last decade of the nineteenth century, coal security was so entrenched within imperial defence rhetoric that it had largely become a 'coaling consensus'.

In the late 1880s, therefore, an emerging coaling consensus had helped to bring about measures to safeguard naval coaling by distinct changes in state bodies. While the leaking of many of the details of the Carnarvon reports had accelerated the growth of coal consciousness, there still needed to be changes to the state in order to address its recommendations. A combination of the formation of two new bodies, the Colonial Defence Committee and the NID, and the discussion of wider naval issues by the Admiralty Board allowed questions of coal to receive more attention from the government. Furthermore, the ability to analyse data efficiently and produce coaling knowledge allowed legislative bodies to implement schemes of defence, maintenance and mobilisation.

This coaling consensus lasted beyond the end of the nineteenth and into the twentieth century, with the presence of Salisbury as Prime Minister for over thirteen of the next seventeen years guaranteeing a concerted imperial policy. As a Prime Minister, he was almost the complete opposite of Gladstone, dominating foreign policy and profoundly absorbed by imperial matters. As a result of the wider ideological shift, there was a policy of continuity even with the return of the Liberal party between 1892 and 1894, with Rosebery as Foreign Secretary, marking the end of party politics in foreign policy in the nineteenth century.²²⁹ The final abandonment of Gladstonian low defence spending by the Liberal party was shown by the adoption of a new £31 million naval building programme in 1894, the so-called Spencer programme, which largely led to Gladstone's resignation, and

²²⁹ Pearce and Stewart, *British Political History*, 162.

Rosebery's appointment as Prime Minister.²³⁰ The Spencer programme was followed by the Naval Works Act in 1895, which looked to defend and extend principal ports, for which £8.8 million was initially put aside, although by 1901 the scope of the work had brought spending to £27.5 million.²³¹

Legacy of a Coaling Consensus

With a coal consciousness becoming a coaling consensus and established bodies with which to solve the coal question in place by the 1890s, it is pertinent to ask what its legacy was. The effect of the Naval Defence Act is well known: it caused spiralling building costs and a naval arms race. In fact, despite being a victory for the blue-water school of navalists at the time, it actually diminished Britain's relative numerical supremacy.²³² It is more difficult to assess the legacy of the Imperial Defence Act, and thus the Carnarvon Commission and coal consciousness, however. Even before the defences had been completed, the *New York Times* praised British coaling station defence in 1892 as 'amply garrisoned and defended' and as places of 'actual political and strategically importance'.²³³ By 1894, after several further revisions which incrementally increased the costs, a report on the progress of the defences concluded that the works on the 'coaling stations approved for execution [were], with one exception, practically completed as regards defence', yet the report still 'urge[d] the construction, in time of peace, of the more important and necessary of the land defences for each coaling station'.²³⁴ Nevertheless, even after such continual expenditure,

²³⁰ Ibid., 167.

²³¹ Willock, *Bulwark of Empire*, 27.

²³² Burroughs, 'Defence and Imperial Disunity', in Porter (ed.), *The Oxford History of the British Empire. Vol. 3, the Nineteenth Century*, 339; Paul M. Kennedy, *The Rise and Fall of British Naval Mastery*, 3rd ed. (London: Fontana, 1991), 193, 209; Parkinson, *The Late Victorian Navy*, Abstract, 161-162; Lambert, 'The Royal Navy: 1856-1914', in Neilson and Errington (eds), *Navies and Global Defense*, 79.

²³³ *New York Times*, 6 March 1892.

²³⁴ 'The Report on the Defences of British Coaling Stations Abroad; and of Colonial and Indian Defended Ports (1894)', TNA, CAB 18/14.

with the benefit of hindsight, opinion had somewhat shifted. Although he supported the defence of principal stations and stressed a need for better steam and telegraph communication, C.H. Crofts suggested in 1902 that to have too many coaling stations was a weakness. Indeed, he proposed that the assertion of Captain Stone in 1889 that ‘the possession of naval arsenals, dockyards, and coaling stations must practically decide the question of naval supremacy’, had overstated their importance, and instead ‘their real defence is the existence of a supreme British navy’.²³⁵ The 1911 *Encyclopaedia Britannica* echoed a similar sentiment when it asserted that ‘it is probable that they will play a somewhat less important part than has been assumed. A fleet which is able to assert and to maintain the command of the sea, will not find great difficulty in its coal supply’.²³⁶ Although this seems damning, it is perhaps worth considering that by the 1900s, Germany, whose threat was entirely from the North Sea, had replaced France as the main rival to Britain, explaining why British overseas bases had lost some of their importance. Indeed, Germany’s inability to challenge Britain overseas, and its subsequent concentration in Northern European waters, meant that Britain’s strategic priorities had to alter too. This change necessitated that ships were withdrawn from the empire to bolster the home fleet. Thus, although coaling and docking facilities allowed Britain the potential to be hugely powerful globally, a lack of ship numbers in the wider world actually made Britain fairly vulnerable to surface raiders such as the *Emden* and the *Scharnhorst*. Yet, even with this weakness, Germany did not possess the infrastructure to sustain enough cruisers outside of European waters to cause Britain major problems. Indeed, Britain’s control over naval

²³⁵ Captain Stone, Paper read at United States Institute, January 1889. Cited in C.H. Crofts, ‘Naval Bases and Coaling Stations’, in Sir John Lubbock (ed.), *The Isle of Man, Gibraltar, Malta, St. Helena, Barbados, Cyprus, the Channel Islands, the British Army and Navy: Historical, Political, and Geographical History* (London: Kegan Paul, Trench, Trübner & Company, 1902), 200-203.

²³⁶ ‘Coaling Stations’, 1911 *Encyclopaedia Britannica*, http://www.1911encyclopedia.org/Coaling_stations.

coaling infrastructure, and its ability to deny the same to its enemies, still made it a formidable opponent in the wider empire.²³⁷

As Britain avoided a major naval war in the period up to 1914, and even in war coaling stations faced few acts of aggression, it is difficult to assess how effective the defences might have been against concerted attacks from foreign cruisers. This is not because Britain's enemies failed to ascribe the same importance to these stations as Britain did, but because Britain's infrastructure allowed it to mobilise far more effectively overseas on a large scale. With the works installed at these stations allowing the navy enough time to return and engage enemy ships, they were effective deterrents to raiding attacks. The legacy of these fortifications is more complex than just a case of examining enemy attempts to attack them, therefore, and they should not therefore be seen as a later version of Palmerston's Follies.²³⁸ As British imperial defence strategy rested on the avoidance of a major naval war, that only one of Britain's overseas stations, the Falkland Islands, was attacked in such a lengthy period would suggest that they were somewhat successful as deterrents.²³⁹ While questions may be asked about the wisdom of several local defences in general – many of which were unimportant – Britain could not rely on the Royal Navy to defend these stations, and in order to maintain control of the ocean, Britain needed a chain of bases to sustain the capability to mobilise worldwide.²⁴⁰ Although the Franco-Russian cruiser threat was negligible, the perceived vulnerability of undefended coal, crucial to the functioning of the Royal Navy, meant that important considerations about an empire wide strategy for defence were made for the first time. Furthermore, it is

²³⁷ G.M. Bennett, *Naval Battles of the First World War* (London: Penguin, 1968), 410-420; Robert K. Massie, *Castles of Steel: Britain, Germany, and the Winning of the Great War at Sea* (New York: Random House, 2003), 255. Sir Julian Stafford Corbett, *Naval Operations. Vol. 1, to the Battle of the Falklands, December 1914* (London: Longmans Green and Co., 1920), 243, 255.

²³⁸ Built after a Royal Commission in 1860 after the French invasion scares of the 1840s and 1850s, these were hugely expensive. They were, however, largely obsolete by the time they were built. See Beeler, *British Naval Policy in the Gladstone-Disraeli Era*, 18-19.

²³⁹ Lambert, 'The Royal Navy and the Defence of Empire 1856-1918', in Kennedy (ed.), *Imperial Defence*, 117.

²⁴⁰ *Ibid.*, 115.

only with the decline of France and Russia as threats in the first decade of the twentieth century (both subsequently signed alliances with Britain) that the focus of a potential war shifted almost wholly to European waters.²⁴¹

This legacy of a coaling consensus was relatively short term, however, limited by the decline of coal use in warships in the twentieth century. Just as a coaling consensus was reaching a high point, Britain had begun to experiment with oil as a fuel for the Navy: by the 1890s, Britain was both conducting its own experiments and observing the results of those carried out by other navies. By 1905, most destroyers were exclusively oil fuelled, and, although it was not an overnight process, it was clear that the future of the Royal Navy lay with oil.²⁴²

The rise of coal consciousness did have less tangible but arguably more important and enduring results, however. The permanent Colonial Defence Committee, appointed in 1885 by a government under growing pressure, has widely been seen to be the beginning of genuine imperial defence planning. It was an interdepartmental committee which relied on expert opinion, even if it was dominated by the War Office.²⁴³ Further to this, the Carnarvon Commission largely contributed to the formation of an effective Naval Intelligence Division in 1887.²⁴⁴ Thus, it can be argued that the rise of coal consciousness not only helped to initiate proper communication between the Admiralty and other government offices with responsibility for imperial defence, but also that it raised questions that would lead to the establishment of a more effective administration for the management of imperial defence and intelligence.²⁴⁵ Although progress was variable, by 1892 the *New York Times* declared that 'with this enormous system under such splendid

²⁴¹ Treaties and alliances with other powers such as Japan were also key.

²⁴² Martin Gibson, 'British Strategy and Oil', 33.

²⁴³ 'Measures taken in relation to Colonial Defence – Printed for 1887 Colonial Conference', TNA, PRO 30/6/131; Schurman and Beeler, *Imperial Defence*, 134; Brian Bond, 'Introduction', in Smith (ed.), *Government and the Armed Forces in Britain*, xv.

²⁴⁴ Allen, 'The Foreign Intelligence Committee and the Origins of the Naval Intelligence Department of the Admiralty', 67.

²⁴⁵ See, for instance Hamilton, *The Making of the Modern Admiralty*, 180.

control, and with new stations that are constantly being equipped and manned, the British Navy can never be reduced to [a] humiliating and embarrassing position'.²⁴⁶ Even if some Admiralty officials and political figures remained convinced of British naval weakness, international opinion suggested that in terms of coaling infrastructure 'as in all other matters of naval importance, Great Britain stands at the head'.²⁴⁷ After 1900, moreover, the bodies of government which largely dealt with coaling issues had further expanded. By 1902 the NID had doubled in terms of number of departments, adding divisions for War and Trade, and the Colonial Defence Committee was replaced by the Committee of Imperial Defence in 1902, which gained more importance in the first decade of the twentieth century.

²⁴⁶ *New York Times*, 6 March 1892.

²⁴⁷ *Ibid.*

Chapter 4: The Development of a Coaling Infrastructure

The emergence of the steam navy did not only precipitate a reassessment of Britain's geopolitical vision and defence strategy, but also required the Royal Navy to invest significantly in coaling infrastructure, test potential fuels, and formalise the distribution of coal. Naval steam engines required coal, and lots of it. More specifically, they required quality steam-coal, which could provide the maximum amount of energy per ton, would not deteriorate badly when stored, and burnt cleanly to avoid clogging up warship engines. Further to this, as naval steamships require a degree of stealth in battle, they needed a fuel that did not produce black smoke, making them visible for miles around. Thus, selecting the correct coals for the navy was crucial to the effectiveness of warships in carrying out their duties. That this quality coal was required to be available around the empire in ever-increasing quantities exacerbated the difficulties experienced by the Admiralty, and responses to this created networks and infrastructures that became progressively more complex and robust.

This chapter is structured as a journey from coal face to imperial coaling station, and explores how Britain chose, acquired, transported, and monitored levels of this precious commodity for its navy. In doing so, it identifies the complexities, geographical differences, and changes over time evident across the coaling infrastructure, and how these threatened the robustness and efficiency of British naval coaling. The journey begins in coal fields around the world and examines how the Admiralty sourced its fuel by performing extensive coal trials, produced lists of coal of sufficient quality to supply the Royal Navy, and drew up the contracts to purchase this coal.

Although the Royal Navy was highly fortunate that Britain possessed vast quantities of coal, not all was suitable for naval use, and it was only through the Admiralty testing various British coals from the 1850s that the best fuels could be acquired. To catalogue

those collieries that provided what it deemed to be high-enough quality steam-coal for its warships, the Admiralty List was created. Although the trials suggested that the coal of South Wales was the most suited to naval usage, and was in fact the best steam-coal in the world, pressure from northern collieries dragged the trials into the 1870s. Indeed, despite Welsh coal dominating the Admiralty List, northern coal was still used in mixtures until the 1880s. In the wider empire, coaling arrangements were even more ad hoc. Although Welsh coal was used in all Britain's Atlantic naval coaling stations, including as far away as the Cape, into the 1880s a multitude of coals of differing quality were used at British naval stations.

It was only with the rise of coal consciousness, as discussed in the last chapter, and advances in steamship technology that this situation changed. Demand for coal increased with the enlargement of the navy after the Naval Defence Act in 1889, and this was accentuated by the increased size, speed, and therefore consumption of warships. The Admiralty had held almost constant trials of coal local to foreign stations throughout this period, but this surge in demand led to a more serious consideration of sourcing coal from local sites. It was not just the increased quantity of fuel consumed that led to concerns about the coal used around the empire, but also a growing appreciation of the importance of quality coal for the effectiveness of the navy. Even so, such were the stringent standards of the Royal Navy for steam-coal after 1880 that, despite the exertions of the Admiralty to find new sources, there was little success. In fact, the amount of local coal used decreased amid fears about quality, and Welsh and Westport (New Zealand) coal dominated even though shipments often had to be transported enormous distances. As a result of the dominance of Welsh and Westport coal, it is possible to see coaling infrastructure after 1882 largely as two sub-imperial networks that overlapped around the Cape, although it is important to recognise that Welsh coal still represented the majority of naval coal used.

The chapter then explores how contracts for naval coal were agreed, both with domestic suppliers and those abroad, and how the Admiralty relied heavily upon the commercial sector in the purchasing and transporting of coal. As a result of this, even if the focus of this thesis is naval coaling, it is imperative to recognise the scale of commercial coaling, which massively outweighed its naval equivalent. Not only did naval ships frequently use commercial stations – indeed many coaling stations acted as both – but the Admiralty also relied on the commercial sector in other parts of its infrastructure. Commercial collieries provided the coal, commercial agents arranged and managed contracts to supply and transport coal around the world, and commercial tramp ships delivered the coal to the stations. As was the case with victualling, the Admiralty utilised existing commercial infrastructure, acting largely as an overseer.¹

Finally, the chapter analyses the development of supply-management processes between the final destination of the coal – the foreign naval station – and the Admiralty. As the use of steamships increased, and they became larger and more coal-hungry, British coaling infrastructure needed to be able to cope with extra demand. This strain necessitated changes not only in the way that naval coaling infrastructure functioned, but also to the infrastructure itself. Furthermore, this increasing demand for coal put pressure on the coaling infrastructure of South Wales and New Zealand and Australia, which, by the mid-1880s, were the only sources of coal in use by the Royal Navy. Although, due to commercial demand for coal far outstripping the needs of the navy, this was not a particular problem in peace, the Admiralty had to guarantee that naval coaling stations would be fully stocked and able to provide coal to naval ships in war. Worries about mobilisation in war extended beyond securing a supply though, as the Admiralty also needed to know which stations required fuel and how much. As a result of this, the 1880s saw the introduction of a formalised system for ordering and reporting stock levels at

¹ See Knight and Wilcox, *Sustaining the Fleet*.

coaling stations.² This allowed the Admiralty, through the Commanders-in-Chief of each station, to oversee the coaling infrastructure, and in particular stock levels, as a way of managing the risk to the Royal Navy in war. No infrastructural system is perfect, and thus this chapter will analyse the problems that Britain encountered. Finally, in an attempt to illustrate the remarkable strength of British coaling, it will examine the enormous problems, disasters, and tragedies, suffered by its rivals because of weaknesses in their infrastructure.

Sourcing Coal for the Navy at Home

The early steam navy was fuelled largely by coal from the north east of England and, in particular, from Northumberland. This arrangement was far from ideal, however, as northern coal produced thick black smoke, enabling a naval warship to be seen from some distance by an enemy, as well as making navigation treacherous.³ In response to this situation the Admiralty sponsored trials on British coal from the 1840s to test its suitability for naval use.⁴ It was imperative for the Admiralty to select the best fuel for the sake of performance. They would later state that:

A ship of war must be supplied, and must be kept supplied with a coal which will ensure the highest rate of speed and maintain the required radius of action. If you use a coal that burns quicker, without producing the same calorific effects and power, you would burn out the coal sooner than you otherwise would, and the

² Wilson, 'Fuelling the Steam Navy', 41.

³ Ibid., 29.

⁴ An excellent account of these trials can be found in Morris and Williams, *The South Wales Coal Industry*, 34-41.

consequence would be that a ship instead of running her 10,000 knots at a certain speed, would be reduced probably to 8,000 or 9,000 knots.⁵

As well as calorific efficiency, the Admiralty also stated a need for a coal that had the qualities of 'smokelessness, cleanness, hardness, free burning, minimum of ash and clinker, and that the coals will not cake or give trouble in stoking'.⁶

The trials found Welsh coal to be the best steam-coal for naval use as it produced 'an exceedingly hot and smokeless fire rendering raking unnecessary, thereby economizing on labour for stoking', took up less bunker space per unit of energy output, was less susceptible to oxidising, even in warm climates, and was also less susceptible to spontaneous combustion.⁷ Coal from northern England not only proved less satisfactory, but Wales also had superior port facilities and more direct rail access between pit and port, making Welsh coal more economically viable for the navy.⁸ South Wales had been providing small but important amounts of coal as early as the 1830s, in particular for government steam packets, but after these trials, it was in general preferred from the 1850s for Admiralty use.⁹

While the ideal properties of Welsh steam-coal as a fuel for the steam navy have been explored above, it is worth considering why, chemically, Welsh coal was so suitable. Steam-coal was highly prized because of its high calorific value, which contemporaries measured in British Thermal Unit (BTU) per lb. BTU was defined as the amount of heat

⁵ British Parliamentary Papers, 1904 [Cd. 1991] *Royal Commission on Coal Supplies. Second report of the Royal Commission on Coal Supplies. Vol. II. Minutes of evidence and appendices*, 143-155.

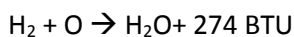
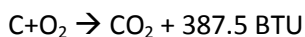
⁶ *Ibid.* Clinker is the stony residue from burnt coal.

⁷ Morris and Williams, *South Wales Coal Industry*, 34-40; Church, Hall, and Kanefsky, *The History of the British Coal Industry, Vol.3*, 33; Wilson, 'Fuelling the Steam Navy', 31, 54; D.A. Thomas, *The Growth and Direction of Our Foreign Trade in Coal During the Last Half Century: Read before the Royal Statistical Society, 19th May, 1903, and Extracted from the Issue of the Society's Journal for Sept. 1903* (London: Royal Statistical Society, 1903), 51.

⁸ Morris and Williams, *South Wales Coal Industry*, 24-29, 34-40; Wilson, 'Fuelling the Steam Navy', 29; British Parliamentary Papers, 1845 [600], *Coal, &c. (Navy). Warlick's patent fuel*.

⁹ 188,507 of 249,527 tons of coal bought by Admiralty was Welsh in 1859, some 75.5%. See Morris and Williams, *South Wales Coal Industry*, 24, 28, 34-40; Wilson, 'Fuelling the Steam Navy', 29; British Parliamentary Papers, 1845 [600], *Coal, &c. (Navy). Warlick's patent fuel*.

needed to raise the temperature of one pound of water from 60°F to 61°F. The calorific value of a fuel is dependent on its chemical make up, and is calculated using the following chemical equations:



By knowing the percentage of carbon, hydrogen and oxygen in a specified amount of fuel, one is able to establish its calorific value. In general, fuels with a high calorific value have a high carbon percentage. Thus, Welsh steam with, on average, 92.5% carbon, was the pre-eminent solid fuel.

Solid Fuel	C (%)	H (%)	O (%)	BTU per lb.
Cellulose	44.5	6.1	49.3	7500
Dry Wood	50	6	44	8600
Peat	60	5.9	34.1	9000
Lignite (Brown Coal)	67	5.2	27.8	11700
Bituminous coal	88.4	5.6	6	14950
Welsh steam-coal	92.5	4.7	2.7	15720

Where oxygen exists in a fuel in combination, a small amount is used in combustion, thus reducing overall heat produced in proportion. Welsh steam-coal has a lower oxygen percentage, which again increases its calorific value in comparison with other fuels. Unlike other solid fuels, it also contains minimal amounts of other elements such as nitrogen and sulphur, or moisture. This not only increases its calorific value, but also allows it to burn cleanly and consistently.¹⁰

Despite the clear evidence of these early trials, the 1850s did not represent the end to the supply question, and there were at least twenty-one trials of domestic coal between 1847 and 1879.¹¹ Wilson has argued that the ‘almost continuous review of coals

¹⁰ B.K. Sharma, *Industrial Chemistry* (GOEL Publishing, 1997), 262-263; D. Möller, *Chemistry of the Climate System* (Berlin: De Gruyter, 2010), 203.

¹¹ Twenty-one are recorded in Parliamentary Reports, see Wilson, ‘Fuelling the Steam Navy’, 31.

throughout the remainder of the nineteenth century' shows that the 'perfect [naval steam] coal was difficult to obtain', but nearly all statistics produced show that Welsh coal was superior for naval use.¹² Not only did the trials suggest this, but the fact that Welsh coal was preferred by almost all foreign navies indicates that the constant trials were a result of something more than dissatisfaction with the quality of naval coal from Wales. More convincing reasons for the continuing trials are significant commercial pressure and a Liberal government looking to cut naval estimates, as well as sound strategic concerns for avoiding reliance on one source of coal. The Admiralty was the largest single purchaser of steam-coal so it was understandable that the owners of northern collieries were not willing to lose business without a fight, and continued to demand trials of their coal against Welsh.¹³ The nature of coal mining itself also provided some reasoning for continual trials. New collieries and deeper excavations at existing sites could produce better coal, and it was in the Admiralty's interests to source as much high-quality coal as possible. This allowed them to ensure a long-term supply of coal for an ever-expanding fleet and to negotiate lower prices for fuel. Finally, the idea of adding the cheaper northern coal to the dearer Welsh variety appealed to the Liberal government, which was looking to cut Admiralty spending. Thus they preferred what became known as a 'Baxter' mixture of coals, championed by William Baxter, the Secretary of the Admiralty appointed by Gladstone.

Despite its cost-effectiveness and the pressure from northern collieries, the use of such mixtures for the navy was short lived. Complaints from overseas stations about its poor efficiency and dirty burning meant that the Admiralty swiftly returned to using Welsh coal alone.¹⁴ As well as guaranteeing quality, using largely Welsh coal also was also better

¹² Ibid.

¹³ Brown, 'The Royal Navy's Fuel Supplies 1898–1939', 13; Walters, *The Economic and Business History of the South Wales Steam Coal Industry*, 313. Walters does not give a date for when the Admiralty was the largest single purchaser of steam coal, however.

¹⁴ Morris and Williams, *South Wales Coal Industry*, 39.

for the maintenance of ships' engines, as no furnace existed that could use all types of coal, and mixing fuels could damage the mechanisms.¹⁵ Although cost was clearly a consideration for the Admiralty when selecting coal, it did not usurp suitability as the primary criterion, and thus by the 1880s Welsh coal was the sole British coal in use for the warships of the Royal Navy under normal circumstances.¹⁶

Of course, coal found across vast areas is not homogenous, and thus not all South Wales collieries produced coal that was suitable for naval use. To differentiate those collieries deemed to produce coal of a sufficient quality there was an Admiralty List, which was in place by the 1840s.¹⁷ No official Admiralty List appears to have ever been published, but from parliamentary papers, various newspaper articles, and adverts in trade journals, it is possible to ascertain that it was more than just a collection of collieries that supplied the navy with coal.¹⁸ Firstly, not all of the collieries on the list actually supplied much or any coal, but were merely recognised as having that capability should the need arise. Secondly, it was as much a marketing device for the collieries as it was a useful tool for the Admiralty. For a colliery to advertise as being 'on the Admiralty List', showed that its coal had been deemed of sufficient quality to supply the Royal Navy, the highest accolade possible for a steam-coal colliery.¹⁹ This could, and did, have huge effects for the success of these companies.²⁰ Conversely, the failure of northern collieries to gain significant contracts from the navy not only impacted them directly through the lack of Admiralty sales, but also had a detrimental effect on commercial sales.²¹

¹⁵ British Parliamentary Papers, 1904 [Cd. 1991] *Royal Commission on Coal Supplies. Second report of the Royal Commission on Coal Supplies. Vol. II. Minutes of evidence, and appendix*, 143-155.

¹⁶ Although coal prices fluctuated enormously during this period, Welsh coal appears to have always been more expensive.

¹⁷ Morris and Williams, *South Wales Coal Industry*, 29.

¹⁸ Charles Edward Evans, *Hints to Coal Buyers* (Cardiff: Business Statistics, 1909), 17.

¹⁹ See adverts in trade journals, for example, *Colliery Guardian*; *Colliery Engineer*; *Engineering: A Weekly Illustrated Journal*; *Cardiff/ South Wales Journal of Commerce*.

²⁰ For example, Aberdare. See Morris and Williams, *South Wales Coal Industry*, 107.

²¹ See, for example, 'From Week To Week', *Newcastle Weekly Courant*, 25 May 1889.

Surviving reports of Admiralty Lists, which are all from the 1880s onwards, confirm that Welsh Coal dominated supply to the Royal Navy. For example, records of coal purchased in 1887–1889 shows that the majority of Admiralty coal came from the Merthyr collieries such as Dowlais, Hood's, Tyler's, and Standard. There were other notable collieries on the Admiralty List. Powell Duffryn was renowned for the quality of its coal, coming top of the coals trialled in 1876, and was on the Admiralty List from that time forward.²² Other early collieries which supplied the Admiralty include Ferndale, which was used in both foreign and home stations, Cambrian Collieries, and the Glamorgan Coal Company.²³ Surviving records of naval coal orders also show that the Admiralty List was constantly being updated, noting that there were continuing trials of new coals, which, if found to be suitable, would be ordered the following year.²⁴ Thus, newer collieries founded after 1880, such as Celtic Collieries, North's colliery, Naval Colliery, and Britannic Merthyr were all included on the Admiralty List in 1913.²⁵

For a colliery to be added to the Admiralty List, its coal had to go through several exhausting stages of testing (see Figure 4.1). Although these contained many specific measurements, equally important were the remarks of the testers about the suitability of the fuel. Firstly, its coal was sent to Portsmouth for burning in a specially constructed boiler. From this, engineers assessed its general suitability for naval purposes, and made a recommendation to the Engineer-in-Chief as to whether further tests should be undertaken with a warship. If found to be satisfactory after further testing with ships in the wider fleet, the colliery was added to list. As the Admiralty was constantly trialling new coals, this process was carried out on many coals, including mixtures.²⁶ Even so, the list did not grow as quickly as might be expected, which is especially significant as it was rare to take

²² Barnett and Lloyd, *The South Wales Coalfield*, 22.

²³ *Ibid.*, 94-99, 102-105.

²⁴ 'Welsh Coal for the Navy', *Western Mail*, 19 June 1889.

²⁵ Barnett and Lloyd, *The South Wales Coalfield*, 66-71, 72-77, 94-99.

²⁶ Walters, *The Economic and Business History of the South Wales Steam Coal Industry*, 313.

collieries off the list unless there was a fall in quality.²⁷ In 1905, there were twenty-four Welsh collieries from which the Admiralty obtained coal directly, and a further two from which it did so indirectly, yet, despite demand growing, by 1913 only five collieries had been added, with thirty-one types of Welsh coal on the Admiralty List.²⁸ This lack of growth in collieries on the list not only illustrated how demanding Admiralty standards were, but also reflected the fact that colliery ownership was being consolidated, with 80% of steam-coal produced by twenty collieries by 1900. In fact, the South Wales coal industry, which dominated naval supply, was virtually closed to newcomers in the period 1870–1914.²⁹

(Commenced on 10th of July 1899)

Adm S Number }
26 July 99 }

Report of Trials of Coals

Name of coal	Date	Quantity used	Location of trial	Remarks	Apparatus	Dimensions of grate	Pressure of steam	Rate of consumption	Remarks
Patent Fuel	Patent Fuel	Patent Fuel	Patent Fuel	Patent Fuel	Patent Fuel	Patent Fuel	Patent Fuel	Patent Fuel	Patent Fuel
Crown Patent Fuel	17/5/98	20/1/99	6/5/99	11 - 14	0.9	8	11.5 to 12.5	(1) 5 (2) 10 (3) 15	70% moderate amount of clinker
" "	17/5/98	21/5/99	16th to 25th June 99	25 - 0	2.9	8	10.5 to 11	(1) 5 (2) 10 (3) 15	70% moderate amount of clinker

* A mixture of half Welsh & half Patent fuel gives good result. It burns well & cools but little. The fire apparently requires clearing no oftener than with Welsh coal.

Commander

J. A. Royce Engineer

Francis Powell R

Henry King

Approved

H. Davidson

Commander

10th July 1899
N. 6368

Figure 4.1: Reports from testing on coals for the navy, 1899. TNA, ADM 116/573.

Despite a huge growth in naval coal use in this period the Admiralty did not deem it sensible to purchase collieries itself. This can be explained by several factors. To mine coal required considerable initial capital, which would have made any future savings on

²⁷ British Parliamentary Papers, 1904 [Cd. 1991] *Royal Commission on Coal Supplies. Second report of the Royal Commission on Coal Supplies. Vol. II. Minutes of evidence and appendices*, 143-155.

²⁸ *The Times*, 31 March 1909; *South Wales Coal Annual* (Cardiff, 1903), 280.

²⁹ Dauntton, *Coal Metropolis*, 59-61, 68.

purchasing coal less significant. Furthermore, collieries were an inherently risky investment, and could be immensely costly for little reward if only limited amounts of quality coal could be found. By purchasing from multiple collieries, the Admiralty avoided this risk, as it could discontinue the supplies from any colliery providing sub-standard coal. It is also worth considering that, despite being the largest purchaser of steam-coal, Admiralty demands for coal were relatively small, with fuel for the navy representing only one-thirtieth of total Welsh production.³⁰ Furthermore, because of its regular demand and shipments, the Admiralty could gain discounted rates from many of the collieries. Indeed, purchasing from existing collieries held many benefits for the Admiralty, not least that they could pass on any significant financial risk to the company, as well as utilise their existing infrastructure and expertise.

The accepted place of Welsh coal as the world's best for naval use was shown not just by its domination of the Admiralty List, but also from how widely it was used outside of Britain's domestic coaling stations, and indeed outside of Europe. Welsh coal could be bought at commercial stations as far away as Buenos Aires, Mauritius, and Port Said, as well as most stations in between.³¹ Although commercial lines would often use the cheaper local fuel at some of these stations, as cost was more important than clean emissions and speed, Welsh coal was the preferred fuel of the majority of the world's navies. Indeed, it was often highlighted during war scares that Wales was providing the coal for the navies of France, Russia, and Germany.³² The widespread naval use of Welsh coal was promoted by the collieries, and adverts in coal journals of the 1890s show that they were as keen to emphasise the use of their coal in foreign navies as they were about being on the Admiralty

³⁰ British Parliamentary Papers, 1904 [Cd. 1991], *Royal Commission on Coal Supplies. Second report of the Royal Commission on Coal Supplies. Vol. II. Minutes of evidence and appendices*, 143-155.

³¹ Appendix Xi : Price And Conditions Of Supply Of Coal At Various Coaling Ports For The Year 1912. Cited in Adam Willis Kirkaldy, *British Shipping: Its History, Organisation and Importance* (London: K. Paul, Trench, Trübner & co, 1967).

³² See for example *The Times*, 22 February 1910; *Morning Post*, 16 July, 1900; *North-Eastern Daily Gazette*, 25 January, 1893; *Sheffield & Rotherham Independent*, 3 January 1893; *The Times*, 14 December 1908; *The Times*, 19 September 1913; *The Times*, 2 September, 1913.

List. Nixon's Navigation coal, 'supplied to the Russian, German, Austrian, Italian, Swedish, Dutch and Egyptian governments for royal yachts and special naval purposes', A. Tylor & Co. supplied the Italian government, and Hill's Plymouth Merthyr was on 'the English, French, Italian, and Spanish Governments' lists'.³³

Despite the suitability of Welsh coal for naval use, the deterioration of the coal, while not as drastic as other varieties, was still a concern, particularly at tropical stations. There were therefore attempts by the Admiralty to tackle this problem, in particular through the development of patent fuel. Named for the fact it was under patent in the late nineteenth century, it was formed by binding together coal fines (which were often Welsh in origin) to produce regular briquettes. It was trialled from 1877, and by 1881 was deemed to be of sufficient quality to be brought into standard circulation.³⁴ The process was one that had been widely used for railways for some time, and its use for naval vessels had been established by the French Navy.³⁵ As it was specifically designed to deteriorate more slowly than coal, even in the tropical climate of many of Britain's overseas stations, it was much more suitable for long-term storage, even in the open. The use of regular briquettes also improved the efficiency of loading fuel, allowed more fuel to be taken on board, and was cleaner to work with than standard coal, as it produced far less dust. Furthermore, coal too small to be used as steam-coal could be used to make patent fuel, thus making use of what was otherwise a waste product.³⁶

Recognising these potential advantages, the Admiralty pushed to have patent fuel widely used in the navy, and it was tested on the West African Station. Multiple different

³³ *Progress Commerce*, vols 64-65, 1893; *Almanack*, vol. 285, 1895.

³⁴ Coal fines refer to particles with a maximum size usually less than one-sixteenth of an inch and rarely above one-eighth of an inch.

³⁵ British Parliamentary Papers, 1904 [Cd. 1991], *Royal Commission on Coal Supplies. Second report of the Royal Commission on Coal Supplies. Vol. II. Minutes of evidence and appendices*, 143-155.

³⁶ British Parliamentary Papers, 1905 [Cd. 2353], *Royal Commission on Coal Supplies. Final report of the Royal Commission on Coal Supplies. Part I. General report*, 10,21

complaints came from many of those who used the fuel, however.³⁷ In particular, there were problems with the way the fuel burnt, as it produced large amounts of clinker. More seriously, it caused blisters and severe eye irritation to those who worked with it. Furthermore, although it did not deteriorate as Welsh coal did in tropical climates, it was still seen as producing inferior power even compared with deteriorated coal. Thus, by 1888 it was largely abandoned. Despite this failure, the potential advantages of an improved patent fuel were enough for the Admiralty to continue testing. This persistence brought reward, and by the turn of the century the patent fuel mix had been improved considerably. Claims that it no longer adversely affected stokers may have been overplayed, however, as those handling the fuel were supplied with goggles, Vaseline, and gloves to protect their eyes and skin. Production costs made it more expensive than Welsh coal, however, and thus figures from the turn of the century show that shipments to naval stations were still a fraction of the amount of total patent fuel being exported from South Wales.³⁸ As a result, it was produced not to supersede the use of Welsh or other coal, but as a reserve fuel at foreign stations, where it could easily be used in war or emergency should suitable coal supplies be difficult to come by.³⁹ Thus, those stations at a considerable distance from Britain kept between six and nine months' worth of patent fuel in store.⁴⁰ This fuel was marked with a Broad Arrow pressed into it, to signify it was naval property.⁴¹

³⁷ 'Correspondence with Fernando Po, St Helena, Simon's Town, St Paul de Loanda (Angola)', TNA, ADM 123/110.

³⁸ 'Patent Fuel', TNA, ADM 116/573; British Parliamentary Papers, 1905 [Cd. 2353], *Royal Commission on Coal Supplies. Final report of the Royal Commission on Coal Supplies. Part I. General report*, 10, 21; 'Substitute For Coal', *Sheffield & Rotherham Independent*, 21 May 1900; For example, Gibraltar imported 3,686 tons, Simon's Town 2,510 tons, Esquimalt 2,300 tons, from a total of around a million tons. See *South Wales Coal Annual*, (Cardiff, 1903), 186-203.

³⁹ Letter from Admiralty to Commanders in Chief at home and abroad, 21 August 1901, TNA, ADM 125/56.

⁴⁰ 'Steam Vessels at home and abroad 1879/80', NMM, MLN/163/4 [5].

⁴¹ Edward Harris, 'When Coal Was King', *The Mid-Ocean News*, 14 August 2009.

Duplicate 196

STORING PATENT FUEL AT ST. PAUL DE LOANDA.

TO THE COMMANDER-IN-CHIEF,
CAPE OF GOOD HOPE AND WEST COAST OF AFRICA.

3rd December 1884, C.P.

We, *Messrs Newton, Faruqio & Co: Merchants*
of *St Paul de Loanda*
in the *Colony* of *Angola*, hereby offer, in
consideration of payment being made to us at the rates quoted below, to provide
storage and lightersage at St. Paul de Loanda for all such quantities of Patent Fuel as
we may be from time to time directed to take charge of, and to receive into and
send out of Store such Patent Fuel, subject to the conditions stated on this and
the next page, viz.:

For Ton.

- For all Fuel discharged, landed, and stored, at the rate of *five shillings*
per ton.
- For all Fuel re-shipped and delivered alongside Her Majesty's Ships, at the
rate of *three shillings* per ton.
- For all Fuel delivered from a Collier alongside any of Her Majesty's Ships, at
the rate of *three shillings* per ton.

Signature,

Newton Faruqio & Co

Postal Address, *St Paul de Loanda*

Witness,

Name and Address of London
Representatives to whom
payment is to be made.

Agents in W.C. of Africa.
Messrs Bruno, Silva, & Low,
35 Beutels Friars,
London, E.C.

On behalf of the Lords Commissioners of the Admiralty I accept the above tender.

Arthur Worster Captain & Senior Officer, for
Rear-Admiral and Commander-in-Chief,
Cape of Good Hope and West Coast of Africa.

CONDITIONS OF CONTRACT.

1. *Period of Contract.*—This Contract is to last for three years certain, from the
1st April 1885, and further until the expiration of three calendar months' notice of
termination, to be given by either side, in writing to the other, which notice shall not
be given until the said three years shall have expired; but in the event of any
breach of agreement on the part of the Contractors, the Contract may be determined
summarily by the Lords Commissioners of the Admiralty, without compensation to the
Contractors.

* 1212. 4-3/34. W. 5123. E. & H.

C.P. 4160-84.

Figure 4.2: Contract for patent fuel for St Paul de Loana (Angola), 1885. TNA, ADM 123/110.

With patent fuel restricted to being kept for reserve, there were further attempts by owners of northern collieries to gain access South Wales's monopoly on supply to the Royal Navy. Three factors encouraged these collieries to act. Firstly, the price of Welsh steam-coal had risen significantly above others in the late nineteenth century. Secondly, the passing of the Naval Defence Act at the end of 1889 not only greatly increased ship numbers, but also greatly increase steam-coal consumption, and thus the northern colliery owners were eager to gain a share of the expanding demand. Finally, although northern coal was only used by the navy for stationary and land engines, lines such as P&O and the Royal Mail Steam Packet Company had begun to use northern coal more habitually on their ships to cut fuel costs. As a result of these factors, a delegation of northern coal interests was sent to the Admiralty in 1889 to push for more sourcing from their region.⁴² Despite their protestations, however, their appeal was rebutted by the First Lord of the Admiralty, Lord George Hamilton, who suggested that practical experience had proven that Welsh coal alone was the only suitable domestic fuel for the navy. This was due to the 'special duty and work which the Navy is called upon to perform'.⁴³ This point of view reflected earlier reports from Admirals on foreign stations. Writing from the Baltic, Admiral Napier had commented: 'Send me out Welsh coal, or I cannot be responsible for the safety of the fleet'.⁴⁴

Worries about Britain's overreliance on Welsh coal did, however, lead to continued Admiralty experiments with different coals, mixtures of coal, and coal and oil. Despite these tests, the Admiralty found no fuel which they considered to be equal to Welsh coal. Such conclusions highlight the difference between the fuel needs of the navy and of most other steamship companies. By 1905, commercial shipping companies, with the advance of engine technology, could use cheaper, lower quality coal to reduce costs, and still reach

⁴² 'Welsh Versus North Country Coal', *Western Mail*, 16 May 1889.

⁴³ *Ibid.*

⁴⁴ Speech of Mr Fothergill, House of Commons Debate, 29 July 1870, *Hansard*, vol. 203, cols 1196-203.

adequate performance. The Royal Navy, which needed its vessels to always be able to perform at optimum levels and with minimum black smoke, did not have this luxury, and was therefore largely wedded to Welsh steam-coal. The use of oil was seen as a promising alternative, but without a secure supply, it was too unreliable to act as a substitute.⁴⁵ To this end, in 1896, it was stated that ‘oil may be used, perhaps, beneficially in small craft in times of peace, but it will be a long time before good Welsh coal is superseded in the British navy’.⁴⁶ By 1903, oil was still only being tested.⁴⁷ Thus, although there was a general decline in the use of Welsh coal at foreign commercial coaling stations, the Admiralty, along with liner companies, continued to rely on it beyond the First World War.⁴⁸

Sourcing Coal for the Navy Abroad

Throughout the period 1870–1914, Welsh coal was widely accepted as the best steam-coal in the world and, as a result, it dominated Royal Navy supplies. Wilson asserts that ‘coal sent to Foreign Stations [was] almost predominantly Welsh’ in the period up to 1878.⁴⁹ Welsh coal did not provide all the overseas stations used by British naval ships, however, especially before the 1880s. Indeed, where ‘the hinterland of the station had its own deposits of coal with which the station could be supplied’, it was often used by the navy.⁵⁰ To varying extents local coal was used abroad, often in mixtures with Welsh or northern coal. Indeed, coal existed throughout the empire with reserves existing in Australia, New Zealand, Canada (particularly in Nova Scotia and Vancouver), South Africa (Natal), Borneo

⁴⁵ British Parliamentary Papers, 1905 [Cd. 2353], *Royal Commission on Coal Supplies. Final report of the Royal Commission on Coal Supplies. Part I. General report*, 21.

⁴⁶ ‘What The World Says’, *Derby Mercury*, 30 December 1896.

⁴⁷ British Parliamentary Papers, 1904 [Cd. 1991], *Royal Commission on Coal Supplies. Second report of the Royal Commission on Coal Supplies. Vol. II. Minutes of evidence and appendices*, 143-155.

⁴⁸ Walters, *The Economic and Business History of the South Wales Steam Coal Industry*, 323; Thomas, *The Growth and Direction of Our Foreign Trade in Coal During the Last Half Century*, 55-56.

⁴⁹ Wilson, ‘Fuelling the Steam Navy’, 30.

⁵⁰ *Ibid.*

(Labuan), and Bengal.⁵¹ Furthermore, countries where the navy habitually coaled, such as China and Japan, had their own sources of coal. Not all was suitable for naval use, however (see Figure 4.3). In the period before 1880, the Admiralty does not seem to have had an overarching coal sourcing strategy at foreign stations. For each individual station the Admiralty appeared to rely on the relevant Commander-in-Chief to source and assess local coal for naval use. Where coal was deemed to be suitable, such as in Australia, this led to the use of local coal alone, and at others, a mixture of local and Welsh or northern coal was used. Those stations with wholly unsuitable coal were shipped the same Welsh and northern mixture used at home stations.⁵² At the commercial stations used by warships, the navy appears to have used the best coal that was available at the time. This situation changed slightly in the 1870s, where a reassessment of the coaling situation led to a short-lived switch to Australian, rather than British, coal at the China Station. This change was merely driven by economy, however, as it was far cheaper to use the adequate coal supply from Australia than the more expensive Welsh coal.

Real change to the sourcing of coal abroad only happened with the growing coal consciousness of the 1880s, however, when worries about coal quality came to the fore. Just as it had done at home ports, the Admiralty looked to using only high-quality coal on foreign stations. Coal from Westport, New Zealand was found to be sufficiently good to supply the Royal Navy, but no other was deemed adequate for naval use. Although not quite the same quality of Welsh steam-coal, Westport was widely used in Australasia, the Pacific, the Indian Ocean, South East Asia, and the Far East. The effect of this was that from the middle of the 1880s onwards it is largely possible to divide the foreign stations into two groups by the predominant type of coal, Welsh or New Zealand Westport. Thus, by the end of the nineteenth century, what existed were two sub-imperial networks of coaling, one

⁵¹ Headrick, *The Tools of Empire*, 175.

⁵² See for instance the use of Labuan coal. British Parliamentary Papers, 1851 [428], *Eastern Archipelago Company. Correspondence between Rear-Admiral Austen and others with the Admiralty, respecting the supply of coal by the Eastern Archipelago Company*, 1-12.

centred on Cardiff and the other centred on the coaling infrastructure of New South Wales, where the Westport coal was distributed from.

As a result of the Royal Navy's reliance on Welsh coal worldwide, worries emerged at the turn of the century as to how much steam-coal of sufficient quality remained in South Wales.⁵³ In 1903, during the Royal Commission on the Coal Resources of the United Kingdom, Sir Gordon Millar, the Director of Navy Contracts, pointed to the limited amount of collieries capable of producing coal of a high enough quality to be used by Royal Navy, and therefore suggested that 'the best coal was already becoming exhausted, and that the coalfield now had to depend more and more upon its second and its third class seams'.⁵⁴ Subsequently the Admiralty increasingly looked to source coal elsewhere, and senior naval officers on foreign stations were instructed to not only monitor local coaling, but to alert the Admiralty to any suitable fuel for the Royal Navy in the vicinity. That this search was ultimately unsuccessful was largely because, as the Admiralty stated in 1903, that 'irrespective of expense, [Britain] could not go below the minimum standard of requirements special to the Naval Service'.⁵⁵ As a result, even in 1914 Welsh coal dominated coal at naval stations to the extent it was being transported as far as Vancouver, some 14,300 nautical miles away.⁵⁶

⁵³ Brown, 'The Royal Navy's Fuel Supplies 1898-1939', 14; British Parliamentary Papers, 1900 [Cd. 494], *First Lord of the Admiralty's statement on 1900 Naval Estimates*.

⁵⁴ *The Times*, 31 March 1909. It must be noted that this was not the view of all those interviewed.

⁵⁵ British Parliamentary Papers, 1904 [Cd. 1991], *Royal Commission on Coal Supplies. Second report of the Royal Commission on Coal Supplies. Vol. II. Minutes of evidence and appendices*, 143-155.

⁵⁶ Evans, *Hints to Coal Buyers*, 63.

Station	Local Coals (non British) available	Remarks	Coals used
Mediterranean	Heraclea coal – near Constantinople	Used in Crimean war – too much sulphur and produces a lot of ash	Solely Welsh at Malta, 2/3 Welsh, 1/3 North Country elsewhere
Cape	Steelpoint valley, Transvaal	Too much ash	
East Indies	Zanzibar	Too much ash	
China	Labuan	Contract to supply for 42 years, but mines flooded and in financial difficulties	2/3 Welsh, 1/3 Takasima
	Takasima	1882-3 Used in preference of Northern or Australian 1/3 to 2/3 Welsh	
	Formosa	Could be used in emergencies	
	Australian	Bulli used until 1876, 1/3 Newcastle used with 2/3 Welsh coal 1876-1879	
North America	Baltimore	Used 1873-1875, liable to self combust	At Halifax 2/3 Welsh 1/3 Pictou. Elsewhere 2/3 Welsh, 1/3 North country
	Pictou	Used for three years at all stations, mixed with 2/3 Welsh, only used at Halifax after 1876	
Pacific	Nanaimo	No Welsh coal sent for years	Solely Nanaimo used at Esquimalt
Australia	Newcastle/Illawara	Only station Australian coal is used	Australian

Figure 4.3: Table showing native coals found local to British naval stations, and which coals were actually used by the Royal Navy in the years 1882–1883. Data compiled from ‘Steam Vessels at home and abroad 1881-82 and Steam Vessels at home and abroad 1882-83’, NMM, MLN/163/4 [10] and [11]. The majority of these were abandoned in the 1880s. Station divisions are taken from these documents.

Australasian Coal

Even before the Australia Station was founded in 1859, Australasian coal had undergone naval trials, some as early as 1847.⁵⁷ Trials against English and Welsh coal in 1858–59 gave underwhelming results, but by 1867 more trials by the War Office had suggested that it was equal to the best Newcastle coal. As a result, when the station was founded it was

⁵⁷ Australasia is used in this thesis to refer to Australia and New Zealand collectively, to avoid confusion about contemporary use of the word Australia to mean the same.

agreed that it was to be self-sufficient in war, unlike most other stations.⁵⁸ This use in Australia was also enough to convince the Liberal government that Australian coal was of high enough quality to supply the fleet more generally. Thus in 1873, seeking to reduce naval estimates, the Admiralty ceased the expensive export of Welsh and Northern coal to China, and replaced it with Australian, which was seen as far superior to the coal available in Japan and China. The Admiralty contracted the Australian coaling agents Messrs. Parbury Lamb & Co. to supply Australian coal to the China and East India Station to send 11,000 tons of New South Wales coal on a set timetable.⁵⁹ The Admiralty justified this action by stating that 'no supplies of fuel have been sent from England for [the Australia Station's] use, and it seems reasonable to infer that coal which would efficiently serve them in Australian waters, could also serve them in Chinese and Indian waters'.⁶⁰

In order to avoid the criticism of putting economy ahead of all else, the Admiralty perhaps intentionally overstated the quality of Australian coal. Indeed, coal sourced from Australia was not without its problems. Newcastle, in New South Wales (NSW), emerged as the main coaling port, but its local coal was dirty, and burnt too quickly and at too high a temperature for naval use. Its main local rival was coal from south of Sydney, known as Wollongong, Bulli, or Illawara, which to an extent resembled the coal of South Wales, being slow and cleaner burning. Although it was used by the American and Australasian Company for its Sydney to San Francisco non-stop services, it did not burn at a high enough temperature to produce the requisite power for ships to attain high speeds, a necessity for a naval ship. As a result of this flaw, some steamship companies, such as P&O and the

⁵⁸ Untitled Memorandum, TNA, ADM 122/22; John Bach, *The Australia Station: A History of the Royal Navy in the South West Pacific, 1821-1913* (Kensington, NSW: NSW University Press, 1986), 220. Some of the trial data and reports can be found in Cambridge University Library, Jardine Matheson Collection, JM L3/5.

⁵⁹ Admiralty to Australia Station, 10 January 1873, TNA, ADM 122/22; 'Coal For The Royal Navy', *Huddersfield Daily Chronicle*, 20 May 1873. They were also merchants involved in providing coal shipments.

⁶⁰ Letter from Admiralty to China Station, 10 January 1873, TNA, ADM 125/22.

Australasian Steam Navigation Company, avoided southern Australian coal, and instead use Newcastle NSW coal mixed with Welsh.

For as long as Australia remained a fairly unimportant station, distant as it was from Britain and potential danger, the lower quality of the coals received little attention. After 1873, however, the quality of Australian coal became an important issue, as it then affected the performance of the fleet of the China Station. Not only was this one of the most important fleets strategically, but ships there also had to deal with the difficult conditions caused by the annual monsoon. Complaints about the change from Welsh to Australian coal were instantaneous, and the Newcastle coal sent in the first shipment to the China Station came in for particular criticism. Consumption was reported to be a third higher than Welsh, it coked the ships' tubes with soot, and deteriorated badly in storage.⁶¹ Perhaps because of these complaints, later shipments were not of Newcastle coal, but of Bulli and Wollongong, from the south of Sydney, which the Admiralty insisted was far superior.⁶² Despite this change, complaints continued from the China Station, and the Admiralty eventually conceded that a mixture between a high-power and a slow-burning coal would be preferable to the existing arrangement. The two coals were combined in a one third northern-NSW to two thirds southern-NSW ratio, in the hope that it would combine the qualities of the two types to make an adequate naval fuel. The instructions sent with the coal as to what mixture was preferable were confused, however, and results proved unsatisfactory.⁶³

The Admiralty eventually admitted that Australian coal was significantly inferior to Welsh. In view of the difficulty of supplying Welsh coal to the station in war, however, there appeared to be little option for the China Station but to use Australian coal, as

⁶¹ Document enclosed with Admiralty to Admiral Ryder 5th September 1874, TNA, ADM 125/22.

⁶² Letter from Admiralty to China Station, 25 August 1874, TNA, ADM 125/22.

⁶³ Letter from Admiralty to Ryder, 4 February 1875, TNA, ADM 125/22; Letter from H.M.S. *Pearl* to Admiralty 5th June 1875, TNA, ADM 125/22.

indigenous coal had proven unsatisfactory.⁶⁴ Indeed, despite exhaustive trials no other local coal had been found that could compare even to Australian coal. Japanese coal was deemed not suitable for export to Chinese or Indian stations, and Chinese coal was seen as even more inferior, while the Indian coal industry was underdeveloped.⁶⁵ Similarly, Victoria and New Zealand were not producing enough quality coal to be considered for naval use.⁶⁶

By 1876, after three years of complaints, the coal situation on the China Station was considered so unsatisfactory that the Admiralty returned to shipping Welsh coal to the China Station despite reservations about its availability in war. This was mixed with that of Newcastle NSW in a ratio of two to one. The complex logistics and expense were prohibitive to this being a permanent solution, however, and thus trials of both Australian and Asian coal continued.⁶⁷ These tests identified coal of increasing quality from the mines of Borneo and Japan, which was used on local stations instead of the much maligned Australian coal.⁶⁸ General dissatisfaction continued though, and in Manila, for example, the navy made arrangements with the Spanish navy to use their Welsh coal, rather than use the Australian coal stored there.⁶⁹

It only was in 1882, with the discovery of the steaming qualities of Westport coal from the north of New Zealand's south island, that a coal with the necessary naval qualities was available from the region. This coal appears to have been introduced into naval usage in 1883 and the coal was widely celebrated as equal to the best Welsh, such was its quality.⁷⁰ A Royal Commission in 1903 stated: 'except for the New Zealand coal I do not

⁶⁴ Letter from Admiralty to Admiral Ryder, 5 September 1874, TNA, ADM 125/22. The letter refers to 'English' coal, which confusingly means that of South Wales. See also Letter from Admiralty to China Station 25th August 1874, TNA, ADM 125/22.

⁶⁵ Letter from Admiralty to China Station, 10 January 1873, TNA, ADM 125/22.

⁶⁶ Letter from H.M.S. *Pearl* to Admiralty, 7 July 1874, TNA, ADM 125/22.

⁶⁷ Letter from Admiralty to Ryder, 17 March 1876, TNA, ADM 125/22; Letter from H.M.S. *Audacious* to Admiralty, 30 March 1876, TNA, ADM 125/22.

⁶⁸ Letter dated 9 July 1883; Contracts for supply 1883; Letter of November 10 1883, all TNA, ADM 125/84.

⁶⁹ Letter to Admiralty, 22 November 1883; Letter from British Consulate, Manila, TNA, ADM 125/84.

⁷⁰ Letter from Vice Admiral Cyprian Bridge to Admiralty, 28 August 1903, TNA, ADM 125/56; Letter dated 31 March 1884, TNA, ADM 122/23. No documentation of its use exists before 1884, when it is

think we have heard of any coal that answers our requirements. Australian coal is used on the Australia Station, but is not so suitable as Welsh and New Zealand coals'.⁷¹ The use of Westport coal was crucial to the ability of warships to perform at peak levels, and after it escaped a cyclone in Samoa, the captain of H.M.S. *Calliope*, in a letter to the Admiralty, praised the fuel for its integral part in avoiding the tragedy. He stated that 'we were fortunate in having Westport coal; it burnt splendidly, and reduced the labour of stoking to a minimum. I do not think that we could have kept steam enough to go out with any other coal which we have used on the Australia Station'.⁷² The proven quality of Westport coal meant that by 1898 regular shipments, often transported by the Union Steam Ship Company of New Zealand, were being made to Sydney, Hobart, and, presumably, to the other Australian Naval stations.⁷³ It was also supplying the China Station with coal.⁷⁴

Towards the turn of the century there began to be intermittent concerns about the quality of the Westport coal sent to the China Station, however.⁷⁵ In response, the Admiralty reassured the Commander-in-Chief that although Westport coal had never been as highly prized as Welsh, it was still exceedingly likely that an enemy's coal would be 'decidedly inferior to that which would be at the disposal of [the China] Squadron'. Although this was undoubtedly true, the Admiralty had little choice in war. Indeed, the NID concluded that it would be impossible to send Welsh coal to China in war, and thus

said to be available at Wellington, Lyttleton, Port Chalmers, Auckland and Bluff. Bach, *The Australia Station*, 220.

⁷¹ British Parliamentary Papers, 1904 [Cd. 1991], *Royal Commission on Coal Supplies. Second report of the Royal Commission on Coal Supplies. Vol. II. Minutes of evidence and appendices*, 143-155.

⁷² British Parliamentary Papers, 1889 [C.5756], H.M.S. "*Calliope*." *Report of the hurricane at Samoa on the 16th March 1889*. Other accounts can be found in TNA, ADM 1/6969; *New Zealand Herald*, 30 March 1889. See also Bach, *The Australia Station*, 220.

⁷³ *Sydney Morning Herald*, 27 April 1898; *Sydney Morning Herald*, 31 October 1900; *Sydney Morning Herald*, 20 November 1907; *Sydney Morning Herald*, 17 July 1908; *North Western Advocate and the Emu Bay Times* (Tasmania), 7 January 1905, *The Mercury* (Hobart), 6 January 1905.

⁷⁴ *Sydney Morning Herald*, 19 December 1902: 80,000 tons Westport coal was delivered to the China Station; *The Advertiser* (Adelaide), 6 May 1903.

⁷⁵ See Letter from Vice Admiral Cyprian Bridge to Admiralty, 28 August 1903, TNA, ADM 125/56; *Sydney Morning Herald*, 20 November 1902; Letter from Cyprian Bridge to Admiralty, 30 November 1902, TNA, ADM 125/56; Letter from Vice Admiral Cyprian Bridge to Admiralty, 28 August 1903, TNA, ADM 125/56.

Westport represented the best coal available.⁷⁶ Thus, it was wed to Westport coal for the supply of the Australian and China Stations. Furthermore, the Admiralty needed to relieve stress on Cardiff in war, in order to allow it to serve nearer stations effectively. Stockpiling Welsh coal was not an option either, as there was not enough space to keep enough coal for a war and, even if there was, it would deteriorate.⁷⁷

Although the quality of some individual deliveries of coal was questioned, by the late nineteenth century it was widely accepted that Westport and Welsh coal were the two most suitable fuels for naval use. In 1900, the Secretary to the Admiralty, William Ellison-Macartney, clarified that 'although Australian coal is being used by Her Majesty's ships in Australian waters for ordinary passages, reports from that station describe it as unsuitable for continuous steaming at high speeds'.⁷⁸ Despite this, high coal prices at the turn of the century led to a serious reassessment of coal supply for the navy in Chinese and Australasian waters, which precipitated further trials of local coals on the Australia Station. The Admiralty also began considering offers for Australian coal 'which approximate more closely to present prices, owing to the high rates now prevailing both for Welsh coal and freight from England'.⁷⁹ In 1900, the Agent General of New South Wales attempted to secure an Admiralty contract to stock all stations east of Suez with Australian coal, but to no avail.⁸⁰ Concerns continued to grow, however, as it became clear that the price situation was not short term. Indeed, it had still not improved by 1909, when the coal bill had been increased by £284,000 in just one year due to price inflation.⁸¹ Encouraged by the fact that the American Navy had used use Australian coal during the Spanish–American War of 1898,

⁷⁶ Letter from Admiralty to China Station, 29 June 1903, NMM, BRI/15 [1].

⁷⁷ Letter from Admiralty to China, 3 July 1903, TNA, ADM 125/56.

⁷⁸ Transports—Australian Coal, House of Commons Debate, *Hansard*, 15 February 1900, vol. 79, col. 7474.

⁷⁹ Prices had risen from 11/1 per ton in 1899, to 15/1 in 1900. See *South Wales Coal Annual*, 70; Transports—Australian Coal, House of Commons Debate, *Hansard*, 15 February 1900, vol. 79, col. 7474.

⁸⁰ *Launceston Examiner* (Tasmania), 13 October 1900.

⁸¹ *Launceston Examiner* (Tasmania), 22 April 1909.

and had in 1908 taken an order for Queensland coal for its naval base at Manila, the Admiralty stepped up attempts to find an alternative Australasian coal.⁸² There were numerous tests, both in Australia and in Britain, but despite concerted efforts to find a suitable naval coal in Australia, none was found that came close to equalling the suitability of Westport coal for naval use.⁸³ Much of the complaints about the trialled Australian coal were that it did not produce enough power and produced too much ash. More concerning were suggestions that its use corroded pipes, and was not usable in some naval vessels, such as the cruiser H.M.A.S. *Encounter*. As a result of these factors, no Australian coal obtained a naval fuel contract from the Admiralty.⁸⁴ The last pre-1914 use of Australian coal on record appears to be in 1893, when the flagship of the Australia Station, H.M.S. *Orlando*, was using coal from the Metropolitan Company, but by this point the use of Australian coal was declining, and this was an exception.⁸⁵ Indeed, trials had confirmed once more to the Admiralty that although Australian coal was adequate for the needs of commercial shipping, it was unsuitable for the warships of the Royal Navy. Thus, in 1913 Westport was practically the only coal used by Royal Navy warships other than Welsh. It was only when war broke out that H.M.A.S. *Melbourne*, a light cruiser, took on 500 tons of coal from Newcastle Coal Limited, but even this seems to have been an anomaly.⁸⁶

Although the Australia Station relied on Westport coal, Welsh coal still dominated the Royal Navy's fuel supply (see Figure 4.4 and Figure 4.5). As late as 1903, 1,000,000 tons of Welsh coal was sent to foreign stations and only 100,000 tons from other collieries, mostly from Westport. This dominance does not seem to have been a question of quality because, as the Agent General for New Zealand, W.P. Reeves, suggested, tests had shown

⁸² *South Australian Register*, 29 April 1898; *Rockhampton Morning Bulletin* (Queensland), 18 January 1908.

⁸³ *Melbourne Argus*, 2 November 1911; *Melbourne Argus*, 13 July 1914; *Rockhampton Capricornian* (Queensland), 25 July 1914; *The Adelaide Register*, 8 April 1911.

⁸⁴ *Adelaide Advertiser*, 25 March 1914; *Nepean Times* (Penrith, New South Wales), 21 March 1914.

⁸⁵ *Illustrated Sydney News*, 9 April 1892.

⁸⁶ *Rockhampton Morning Bulletin* (Queensland), 27 July 1914.

Westport coal to be suitable naval fuel, being nearly as smokeless as Welsh, and was equal to it at generating steam. Instead, much of this lay in the quality of export infrastructure. Whereas the port facilities of South Wales were world leading, Westport harbour had been slow to develop, being for a long time only able to allow only small vessels inside, which had not only limited supply, but also created high prices. By 1900, however, several hundred thousand pounds had been spent on harbour improvements, on the designs of Sir John Coode. The port was therefore bigger, making the price of its high-grade steam-coal cheaper than Cardiff.⁸⁷ Not only was it of extremely high quality, but also plentiful enough that by 1900 it was declared that would be enough in war to supply both the Australian and Chinese stations.⁸⁸ When assessing relative export figures, it must also be remembered that Welsh coal had been well established as the best steam-coal for over thirty years before Westport had been discovered, and was also closer to the major fleets of the Royal Navy, whereas Westport coal supplied relatively small fleets.

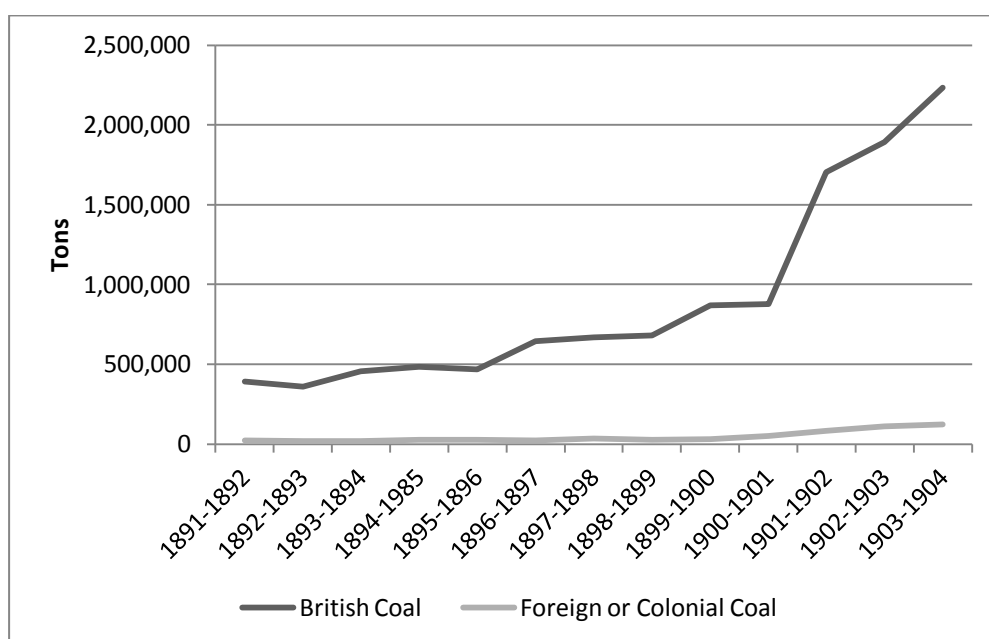


Figure 4.4: Total coal exported to British naval stations, 1891–1904. Data from: British Parliamentary Papers, 1904 [Cd. 1991], *Royal Commission on Coal Supplies. Second report of the Royal Commission on Coal Supplies. Vol. II. Minutes of evidence and appendices*, 143-155.

⁸⁷ 'Her Majesty's Navy And New Zealand Coal: Letter from W. P. Reeves', *The Times*, 7 March 1900.

⁸⁸ Bach, *The Australia Station*, 220.

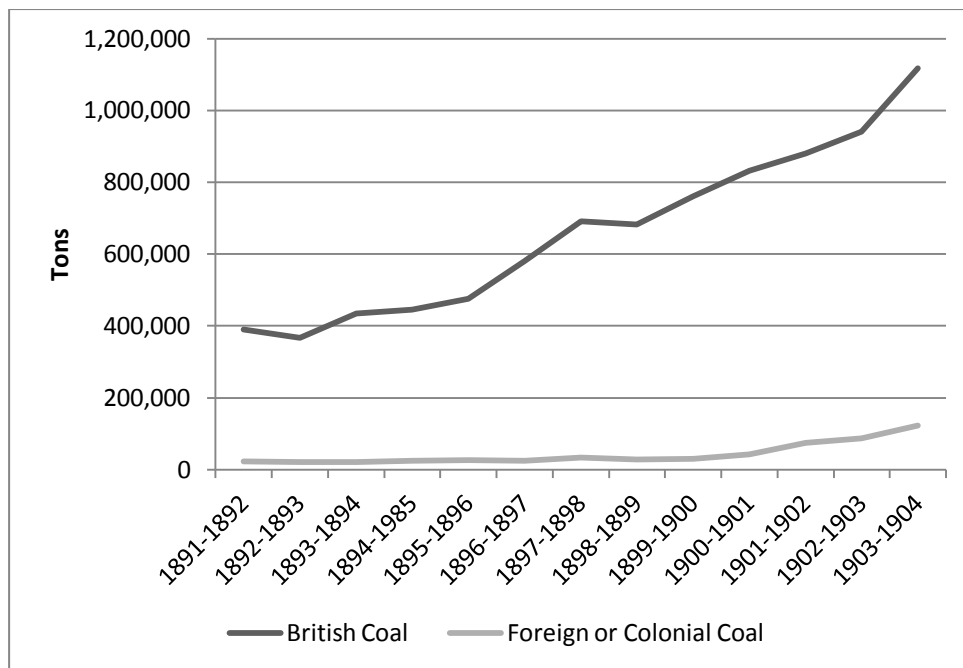


Figure 4.5: Actual consumption by H.M. ships, 1891–1904. Data from British Parliamentary Papers, 1904 [Cd. 1991], *Royal Commission on Coal Supplies. Second report of the Royal Commission on Coal Supplies. Vol. II. Minutes of evidence and appendices*, 143-155.

At the turn of the century, the use of Westport coal was increasing, and Hong Kong in particular was using considerable stocks from New Zealand.⁸⁹ This was largely because naval coal consumption was increasing more generally due to a greater number of ships, more fleet movements, and increased power in naval engines. These factors meant that Westport had to take its share of the growing demand, and coal exported for naval use rose from 450,000 tons in 1893-4, to 710,000 in 1898-9, and to over 1,000,000 in 1900. In 1903 it was estimated consumption would reach 1,250,000 tons. Although the dominance of Welsh and Westport coal was challenged in the commercial sector at the turn of the century by the emergence of German, Japanese, Indian, and Chinese coal, none appear to have been used as a fuel on its own for the navy, and only Japanese appears to have been used regularly, in mixture.⁹⁰ An anecdote from Edward Charrington, a midshipman, at the

⁸⁹ British Parliamentary Papers, 1904 [Cd. 1991], *Royal Commission on Coal Supplies. Second report of the Royal Commission on Coal Supplies. Vol. II. Minutes of evidence and appendices*, 143-155.

⁹⁰ See Appendix XII Table Showing Value and Measurement of Various Coals and Petroleum, in Kirkaldy, *British Shipping*.

turn of the century illustrates this: 'the authorities were very keen to sell us Formosa coal, which is very poor stuff and makes dense smoke. We declined!'⁹¹ At the turn of the century, Westport's output was greater than ever, and it was being used in Ceylon, Fiji, Hong Kong, India, Mauritius, Mozambique, China, North and South America, and various Pacific Islands.⁹² The dominance of Westport coal in Australia is further shown by the fact that although South Wales was exporting some 14.4 million tons of steam and bituminous coal for naval use in 1903, only 7,366 tons was sent to Australia.⁹³ It is important to note that this dominance refers to fuel for the warships of the navy, and figures reveal that a large amount of local coal, usually Japanese and Australian, were used on stations, presumably for auxiliary purposes.⁹⁴

There was also an increasing demand on this infrastructure, and at the turn of the century three-fifths of total output of Westport coal was set aside for the navy. Some 68,000 tons was being shipped to the China Station annually, and by 1903, the large growth over the previous two years necessitated more storage to be built at Sydney, which remained the centre of the coaling network. Such was the importance of Westport coal to the China and East Indies stations, as well as the Cape and Australia, that it increased the importance of Australia Station itself, and the need to protect coaling ships became part of the argument for an Australian force naval force. Westport coal would be indispensable in war, where exports were expected to increase tenfold, with the rest made up by inferior Australian coal.⁹⁵

⁹¹ Journal kept by Edward Charrington, 1899-1902, Royal Naval Museum, Manuscript Collection, 1999/51/7.

⁹² 'Australian Coal', *Weekly Standard and Express*, 20 October 1900.

⁹³ *South Wales Coal Annual*, 132-157.

⁹⁴ Letter from Admiralty to China Station, 19 December 1901, TNA, ADM 125/56.

⁹⁵ Letter from Vice Admiral Lewis Beaumont to Admiralty, 12 January 1903, TNA, ADM 1/7654.

Contracts

Coal supply contracts were originally arranged and supervised by the Storekeeper General of the Navy, but this was later transferred to the Director of Naval Contracts after the Admiralty reforms under Hugh Childers in 1868.⁹⁶ In 1896, responsibility for coal purchase came under the auspices of the Superintendent of Contracts as part of the new Purchase Department. Although theoretical control remained in London, supervision of the exports of coal, which were arranged by agents, was carried out by a naval captain and his deputy stationed in the Admiralty office in Cardiff, the main coal export port (see Figure 4.6). Further supervision was provided by the Admiralty buyer of coals, who, once an agreement had been made, assessed whether the coal was fit for purpose.⁹⁷

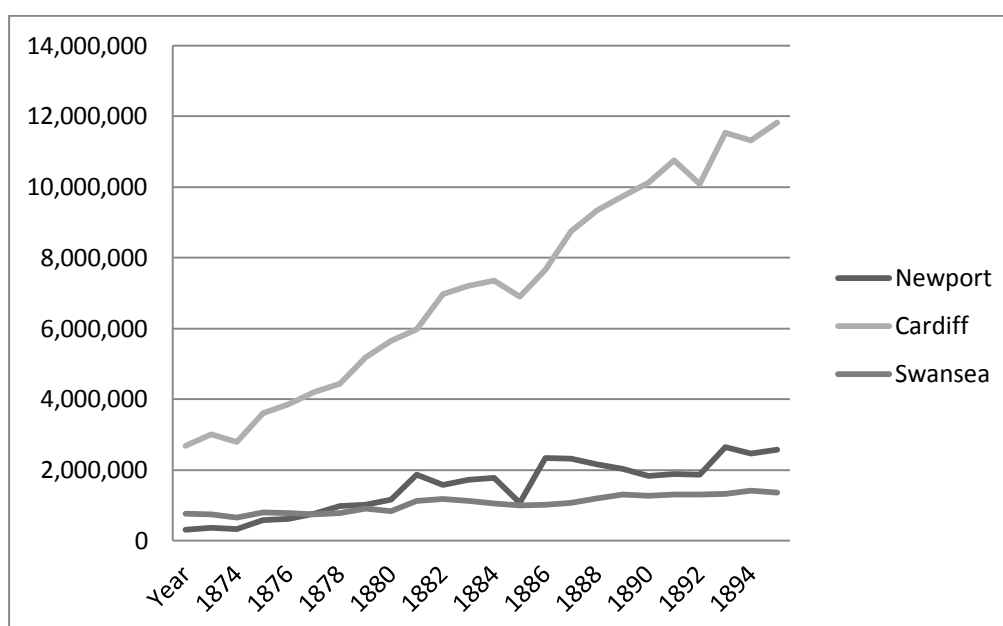


Figure 4.6: Tons of coal exported from selected British Ports 1873–1895. Compiled from British Parliamentary Papers, *Coals, cinders, &c. An account of the quantities of coals, cinders, and patent fuel, shipped coastways from the ports of England, Scotland, and Ireland severally; of the quantities exported.*

⁹⁶ British Parliamentary Papers, 1845 [600], *Coal, &c. (Navy)*; *Yorkshire Herald*, and *The York Herald*, 29 August 1900; Hamilton, *The Making of the Modern Admiralty*, 155.

⁹⁷ It was located at 53, Merchants' Exchange and was manned by Captain William Tunnard RN and his deputy Lieut. William Easterbrook RN in 1906. See *Kelly's Directory of Monmouthshire and South Wales* (London: Kelly's Directories Ltd, 1906). The Admiralty agents are listed as Messrs Harrison and Moore.

In the 1870s contracts to buy coal were generally arranged in March due to the financial year, but no agreements were made for a price should the Admiralty need coal in an emergency. To lower the risk of emergency purchases, the Admiralty bought reserves of coal, which it kept at Portland under cover. To avoid the problem of deterioration, it was used within a twelve-month period. These contracts varied, sometimes being for one-off deliveries, and sometimes for regular deliveries over two or three years.⁹⁸ It was more usual to have annual contracts, which stipulated multiple deliveries to the station in question, however.⁹⁹ In the period after 1870, collieries attempted to manage the risk of price and demand fluctuations by increasing the amount of coal sold on contract, rather than on the open market – something they were largely successful in doing.¹⁰⁰ It was only at the turn of the century that there were more deliberate steps towards the standardisation of contracts, though, both from the Cardiff coal export trade and the Admiralty. As part of this, in 1896 the Chamber of Shipping in Cardiff produced a Welsh Coal Charter. This was a document drawn up specifically for the South Wales coal trade, which standardised the contracts for coal export. This appears to be the first printed charter, which suggests that those involved in the coal export trade as a whole were creating a more homogenised system.¹⁰¹

Soon after, the Admiralty began to consider making its own coaling arrangements more regularised. This culminated on 27 August 1900, when it called a conference to discuss arrangements for the placing of Admiralty contracts for coal. The immediate cause, according to the Cardiff correspondent of the *Daily Telegraph*, was Britain's overseas

⁹⁸ A government enquiry in 1873 into why coal had become alarmingly expensive and scarce provides crucial information. Although this crisis did not seem to have had much effect on the Royal Navy's coal supply, the Admiralty buyer of coals, Henry McCulloch, was questioned with regards to the operation of naval coaling contracts. See British Parliamentary Papers, 1873 [313], *Report from the Select Committee on Coal; together with the proceedings of the committee, minutes of evidence, and appendix, Questions 6922-7059*.

⁹⁹ Walters, *The Economic and Business History of the South Wales Steam Coal Industry*, 313.

¹⁰⁰ Daunton, *Coal Metropolis*, 58.

¹⁰¹ Edward F. Stevens, *Shipping Practice* (London: Pitman, 1931), 40-54.

coaling stations being 'in short supply'. This was something that had been rumoured by those 'in well informed coal circles', presumably as a result of the major strike of 1898.¹⁰² It was, however, also part of a general shift towards the standardised and regular coal contracts, which before this point appear to have been arranged on a more ad hoc basis.¹⁰³ It was proposed that the procedure for arranging coaling contracts should be standardised by inviting all tenders for coaling contracts in the autumn for the year ahead. These tenders would be for the supply of coal for all ordinary circumstances, with all other coal supplied under what was termed emergency conditions. Such an arrangement, it was argued, would allow the Admiralty to avoid fluctuations in coal prices. If implemented, collieries would know the requirements for twelve months with advance warning, and could thus make arrangements accordingly, as was the case with the majority of their exports, allowing the Admiralty to negotiate a lower price. Furthermore, fixing annual contracts for non-emergency coal supply brought the Admiralty into line with 'the practice of all other large consumers'.¹⁰⁴ This was especially important, as the coal industry was particularly susceptible to variations in price.

The conference, held at the Cardiff Chamber of Commerce, was attended by the Admiralty's Cardiff representatives, as well as the colliery owners and managers and the London-based Naval Lord of the Admiralty, Civil Lord of the Admiralty, and Director of Naval Contracts. While these prominent figures attended the conference in 1900, this was a reflection of the importance of the subject of the meeting, rather than an indication of how negotiations for contracts usually worked. The conference gave rise to a structured method of arranging naval coaling contracts. The Admiralty invited tenders in November, in both the domestic and the colonial press, for coal under ordinary conditions, and also for

¹⁰² *Yorkshire Herald, and the York Herald*, 29 August 1900. The strike is discussed later in the chapter.

¹⁰³ Daunton, *Coal Metropolis*, 62.

¹⁰⁴ *The Times*, 28 August 1900.

the possible supply in an emergency, for a total of 1,000,000 tons.¹⁰⁵ The system still seems to have been fairly flexible, however. In 1903 the Admiralty invited exceptional tenders for 1,000,000 tons of steam-coal for last four months of the year, to send to Gibraltar, Malta, and other stations, and then in November signed agreements with twenty Welsh collieries for a further 500,000 tons of coal.¹⁰⁶

Throughout the period 1870–1914, Admiralty contracts were arranged by tender. In general, the Admiralty advertised for tenders in the press, and later in the Cardiff Coal Exchange, or by circular letters. No documentation appears to exist for these tenders and agreements at any station, except for St John's, Newfoundland in 1906. With warships sent to protecting the fisheries, coal was needed at this naval station, and thus all the documentation used in the tendering process survives with this correspondence (see Figure 4.7).¹⁰⁷ It is therefore possible to sketch out how the tendering process worked, at least in 1906. After the advertisements were released in the local press, agents could apply for forms from the Admiralty. Included with this form was the Admiralty List, showing which collieries were approved to supply the Royal Navy, and therefore which coals could be included in tenders. The agents would then send sealed tenders to the senior naval officer of the relevant station, who would decide on the best offer. The officer would then send the proposal, along with the reasoning for the decisions made, on another form, presumably to the Admiralty in London. Once the agreement was made, the successful agent would report monthly to the Commander-in Chief of the station to inform them of deliveries and amounts of coal in stock.¹⁰⁸

¹⁰⁵ *Brisbane Courier*, 3 November 1900; *Sydney Morning Herald*, 3 November 1900.

¹⁰⁶ *Brisbane Courier*, 21 August 1903; *Western Champion* (Queensland), 28 November 1903.

¹⁰⁷ Memorandum of 17 May 1906, TNA, ADM 128/146.

¹⁰⁸ Various forms, TNA, ADM 128/146.

Tender for the supply of Welsh Steaming Coal
to H.M. Ships and hired vessels at (1) St. Johns. (2) Bonne Bay
Newfoundland.

TO THE SENIOR NAVAL OFFICER _____ 19 ____
at St. Johns.

We, _____
of _____

_____ hereby offer, in consideration
of payment being made to us at the rates quoted in the following Schedule,
to supply all such quantities of the articles against which we have inserted
prices, as may from time to time be demanded, subject to the Conditions
stated on the second and third pages.

Signature _____

Address by Post _____

Witness, _____

On behalf of the Lords Commissioners of the Admiralty, I accept the foregoing Tender.

Witness, _____

Approved _____ (Rank) _____

(Rank) _____

Notice to Persons Tendering.

1. Sealed Tenders in duplicate, made out on this form, will be received until NOON on _____
the _____ 19 ____ . They should be marked in the left-hand corner

"Tender for supply of Welsh Steaming Coal."

~~2. The prices quoted are to be in currency.~~

3. The right is reserved of rejecting all or any Tenders, and of accepting any portion of a Tender.

3. Quotations should be in Newfoundland currency. Payment by Naval
Bill of Exchange will be made for the sterling equivalent, at the market
rate current on the date of drawing the Bill, of the number of dollars
claimed. Should the person tendering desire to quote prices in sterling,
such quotation will be accepted on the understanding that payment will be
made by Bill for the sum due in sterling by contract and no more. In the
latter case no reference to the rate of exchange will appear in the contract.

Figure 4.7: Coal tendering form, 1906. TNA, ADM 128/146.

The Admiralty used 'Free on Board' contracts along with the majority of major steam-coal buyers such as the major liner companies. This meant that colliery companies were responsible for all processes up to and including delivering the coal on board the cargo ship. They were, therefore, accountable for the costs of transporting the coal from the colliery to the docks, in addition to the loading and handling fees incurred at the port, but nothing else. The Admiralty was then liable for arranging the ships in which the cargo was to be carried and all other costs incurred in transporting the shipment from the port of loading to the port of delivery. As with the vast majority of the process, this was left in the hands of the Cardiff agents employed by the Admiralty. These were therefore employed in securing coal deliveries, arranging the loading at the port, and the shipping to the final destination, using the established links between collieries, shipowners, and depot owners. Agents were even responsible for using Admiralty funds to purchase the coals. Once shipping had been arranged, the agents were then required to telegraph timings to both the Commander-in-Chief and the coaling officers of the relevant station.¹⁰⁹ There was some Admiralty involvement, however. Inspectors based in Cardiff verified the quality of the coal on shipment, and the agents were expected to 'generally keep the Department advised on all points touching freights, prices, and shipment of coal, and kindred subjects connected with this business'.¹¹⁰ While in general this was regulation work for these agents, the occasional need for coal at short notice could cause difficulties, as 'several would have to be surveyed before a vessel could be found suitable for fleet purposes'.¹¹¹ The Admiralty relied on the expertise of the agents to negotiate these difficulties, and to deliver efficiency and value even during war or strikes. Thus, very much like the Victualling Board of the age

¹⁰⁹ 'Instructions to the Admiralty Agents in South Wales for Shipping Coal', TNA, ADM 116/903.

¹¹⁰ Ibid.; An explanation of the F.O.B. system, along with relevant forms, can be found in Evans, *Hints to Coal Buyers*, 46.

¹¹¹ Memoranda dated 19 December 1900, TNA, ADM 116/903.

of sail, the Admiralty relied on complex merchant networks to supply navy with fuel in the age of steam.¹¹²

In general, the agents employed by the Admiralty in Cardiff endeavoured to buy direct from colliery agents, face to face, rather than through middlemen.¹¹³ These colliery agents were often not directly associated with the collieries themselves, but were independent companies, and often acted on behalf of several collieries. For example, D.R. Llewellyn, Merrett and Price Ltd acted as a sales agency for the Cwmaman, Graigola, Ynisarwed, Ynysfiao, Aberpergwm, Llwynhelig, Windber, Blaengwawr, and Dyllus collieries as well as several others.¹¹⁴ The other most prominent colliery agents by the turn of the century were Thomas and Davey Ltd, L. Gueret and Co., and Messrs. Lysberg Limited.¹¹⁵ Not all collieries used agents, though, and increasingly some, such as Powell Duffryn, negotiated contracts through their own commercial or sales departments.¹¹⁶

In comparing surviving naval coaling contracts with the standard contracts for coal, it is particularly noticeable that naval contracts put more expense and risk on the agent. As the Admiralty's reliance on its agents has been well established, this is hardly surprising. The contracts were also simpler, and merely demanded that the contractor had a depot at the desired location which would be kept fully stocked with coal from the Admiralty List. Unlike commercial contracts, it does not specify the precise type of coal to be supplied, reflecting the Admiralty's faith in the agents they employed.¹¹⁷

Contracts arranged with colliery agents or sales departments only ensured the supply of coal and its delivery to domestic naval stations or to the docks of South Wales for export, and not the multitude of other processes involved in shipping the coal to a foreign depot. Thus, as well as colliers being invited to apply for Admiralty contracts, the navy also

¹¹² Knight and Wilcox, *Sustaining the Fleet*, 3.

¹¹³ British Parliamentary Papers, 1873 [313], *Report from the Select Committee on Coal*, 278.

¹¹⁴ Barnett and Lloyd, *The South Wales Coalfield*, 72-77.

¹¹⁵ *Ibid.*, 72-77, 94-99.

¹¹⁶ *Ibid.*, 27.

¹¹⁷ From private correspondence with Professor Trevor Boyns, Cardiff University.

invited applications from shipping companies, at least for some shipments abroad. These coal ships were mostly chartered, and engaged by the Admiralty's agents.¹¹⁸ Although there was a growing connection between shipbrokers and coal factors, the businesses of coal and shipping were generally distinct, and after 1880s shipowners often chartered vessels but rarely got involved in trade themselves.¹¹⁹ As a result, agents were required to engage in contracts with several different companies.

Based on the records of Cory's, these Admiralty contracts appear to have been tendered for on a quarterly basis between 1890 and 1914, and were usually for about 45,000 tons of coal, which was to be delivered at a specified monthly rate. As well as standard deliveries, on occasion contracts would be agreed for 'emergency supplies'. Precise figures are again difficult to obtain as Admiralty contracts were comparatively small compared to those with other customers – European and South American railways and governments, whose orders of between 1.5 million and 2 million tons per year, dwarfed those of the navy. Similarly, where the navy coaled at foreign bunkers for commercial shipping, agents working on behalf of the Admiralty had to arrange for suitable coal to be available. This was done with contracts arranged through parties based in Britain, who acted on behalf of the depot owners, although increasingly many depot owners had British offices.¹²⁰

Even though the Admiralty did not use middlemen, the sourcing and movement of naval coal was often complicated by the number of different bodies involved, as agreements had to be reached with colliery agents, shippers, and bunker owners. To confuse matters further, due to the huge amount of coal required by the Admiralty, as well as the multitude of destinations that it needed to be sent to, naval coal was often purchased from several collieries in one year, and thus coal supply could involve several

¹¹⁸ British Parliamentary Papers, 1904 [Cd. 1991], *Royal Commission on Coal Supplies. Second report of the Royal Commission on Coal Supplies. Vol. II. Minutes of evidence and appendices*, 143-155.

¹¹⁹ Daunton, *Coal Metropolis*, 55-68.

¹²⁰ Evans, *Hints to Coal Buyers*, 58.

companies.¹²¹ There were, however, existing arrangements in place between some of these bodies. In fact, especially after 1900, there was a growing amount of amalgamation between companies involved in all aspects of the coal export trade.¹²² For instance, collieries often had established links with shipowning firms to export their coal abroad.¹²³ Some of the coal export companies also owned many of the depots they shipped to. By the turn of the century Lambert Brothers was one of largest, and owned coal depots in Port Said, Gibraltar, Suez, Perim, Huelva, Fayal, Las Palmas, and Barbados, all of which were used by the Royal Navy.¹²⁴ Cory's, another major export company, had 118 agencies and depots supplying coal on all major shipping routes by 1908.¹²⁵ There are also some cases of colliery companies owning their own ships for export. Ocean Company, for instance, merged with Wilson's coal shippers and foreign depot owners in 1908, allowing them to control as much of the process as possible, so-called vertical integration. Harrison's, in 1906, went a step further, by combining coal mining, shipping, and coal exportation.¹²⁶

The coal export business relied almost entirely on tramp ships, with no fixed route, but went wherever the charterer wished.¹²⁷ As coal was a low-value, bulk cargo, it was generally exported as part of wider trade patterns to bring greater profit, whether in Europe or further afield. With no great import trade to Cardiff, shipping agents looked to subsidise the cost of exporting coal by involving the ships in wider trade movements.¹²⁸ There were two major trade patterns for Cardiff tramp-steamers, described as coal out, grain home routes, which the Admiralty agents could utilise for naval coal. The first took Welsh coal to the Mediterranean, either to naval bunkers or for the use of foreign railways, and then returned from the Black Sea ports with grain. The second pattern was to send

¹²¹ Walters, *The Economic and Business History of the South Wales Steam Coal Industry*, 313.

¹²² Daunton, *Coal Metropolis*, 59-61.

¹²³ Walters, *The Economic and Business History of the South Wales Steam Coal Industry*, 299-301.

¹²⁴ Barnett and Lloyd, *The South Wales Coalfield*, 54-57.

¹²⁵ Daunton, *Coal Metropolis*, 58.

¹²⁶ Barnett and Lloyd, *The South Wales Coalfield*, 33, 114.

¹²⁷ Daunton, *Coal Metropolis*, 63.

¹²⁸ *Ibid.*, 66.

coal out to South America's east coast to ports in Brazil, Uruguay, or Argentina, and which would then return with Argentinian grain. Other routes were subsidised by alternative cargoes: coal to Aden or Perim may have returned with Indian rice; exports to the Caribbean could return with copper ore from Cuba, or cotton or timber from the US gulf ports; and North American exports could return with general cargo from US east coast ports.¹²⁹ Welsh export companies rarely owned depots any further afield than the Red Sea and Caribbean, as beyond these stations Welsh coal could not compete with more local coal. The navy still required high-quality Welsh coal further afield, however (see Figure 4.8).¹³⁰ In the case of these stations, therefore, the ability to subsidise the cost of coal exportation was especially important. Thus, coal ships sent to the west coast of North America again returned with grain, and those sent to western South America returned with nitrates.¹³¹ Although at the end of the century there was a general decline of the export of Welsh coal to eastern Asia due to competition from local coals, such as that from India, China, and Japan, the need for best-quality steam-coal meant that this was not the case for the Admiralty, or steam packet and liner companies.¹³² In fact, increased demand due to more powerful steamships probably meant that exports for these purposes actually increased.

Somewhat ironically, even in the twentieth century, the coal for most naval stations was shipped by sail, as it was cheaper and speed was less important for low-value trade.¹³³ The government stated in 1896 that 'for cheapness it is desirable to send it in sailing vessels', even if, in extreme cases, it had to use foreign ships if no British ones were

¹²⁹ Private correspondence with Dr J.D. Davies.

¹³⁰ Barnett and Lloyd, *The South Wales Coalfield*, 54-57.

¹³¹ Walters, *The Economic and Business History of the South Wales Steam Coal Industry*, 325, 327.

¹³² *Ibid.*, 323, 326.

¹³³ *South Wales Coal Annual*, 77-130.

available.¹³⁴ Even as late as 1901, sailing ships were habitually used to send coal to naval stores at Esquimalt, Coquimbo, South Africa, and Trincomalee.¹³⁵



Figure 4.8: Map showing coal markets in 1903. The area within the dashed lines indicates where Great Britain held a virtual monopoly for export. Even though it was usually cheaper to buy local coal outside this area, the Admiralty still shipped Welsh coal throughout the world. Taken from D.A Thomas, *The Growth and Direction of Our Foreign Trade in Coal During the Last Half Century* (London: Royal Statistical Society), 1903, 490.

Contracts Abroad

Although the Admiralty theoretically oversaw naval coaling worldwide, in reality it left much of the responsibility for coaling infrastructure in the hands of agents it employed, as has already been described, and this was even more pronounced abroad. As was the case in South Wales, in Australasia – where a largely separate coaling network existed – these agents employed by the Admiralty were responsible for the majority of tasks involved in both buying coal and transporting it to the various stations. Again, they were obliged to send documentation, including the bills of loading, charter party and advice of shipment, to

¹³⁴ Army Coal Transport, House of Commons Debate, 12 May 1896, *Hansard*, vol. 40, cols 1129-30.

¹³⁵ Instructions for the Admiralty Agents in South Wales for Shipping Coal 1 July 1901, TNA, ADM 125/56.

both the Australia Station and the superintendent of contracts of the Admiralty in London. They would also liaise with those responsible for coaling at each station to arrange shipments.¹³⁶ Although the agents were chosen and employed from London, it seems highly likely that the Commander-in-Chief of the Australia Station had a large say in their appointment.

As with the contracts for Welsh coal, contracts for supplying Australia, New Zealand, and Fiji's naval coaling stations were by tender, invitations for which were printed in the *Sydney Morning Herald* (See Figure 4.9).¹³⁷ The applications were submitted to the naval depot at Sydney, but before 1911 it is unclear whether the Commander-in-Chief or the Admiralty in London decided which tender offered the best option in terms of quality and price. It does seem, however, that naval officials in Australia were responsible for overseeing the monthly shipments.¹³⁸ After 1911, the Australian Commonwealth Naval Board, the governing authority over the newly formed Royal Australian Navy, invited tenders for naval coal contracts.¹³⁹ These were presumably then managed by the Director of Naval Contracts, based in Melbourne.¹⁴⁰ Conversely, the contract for Westport coal to Hong Kong was negotiated by the London-based agents Messrs. Weddell, Turner and Co.¹⁴¹ The switch to mainly Westport coal in the 1880s seems to have affected little in the way that the Australian coaling network functioned, however, with the Commander-in-Chief of the Australia Station being based in Sydney, and remaining as overseer of the naval coaling infrastructure.

¹³⁶ Those responsible differed from station to station. On the China Station, for instance, Singapore, Hong Kong and Shanghai had naval representatives, but Nagasaki and Hiogo were represented by agents. See Letter from Admiralty to Australia Station 10 January 1873, TNA, ADM 122/22.

¹³⁷ *Sydney Morning Herald*, 19 February 1887. They also appear in *Sydney Morning Herald*, 22 June 1883; *Sydney Morning Herald*, 21 June 1879; *Sydney Morning Herald*, 18 June 1881.

¹³⁸ Letter from Admiralty to China Station, 6 December 1901, TNA, ADM 125/56.

¹³⁹ *Rockhampton Morning Bulletin* (Queensland), 19 September 1913.

¹⁴⁰ *Brisbane Courier*, 13 July 1914.

¹⁴¹ *Adelaide Advertiser*, 6 May 1903.

Naval Depot, Sydney,
8th February, 1887.

NAVY COAL CONTRACTS.

TENDERS in triplicate will be received up to noon, 10th March, for the supply of best Steam Coal (Bulli or Wollongong and Newcastle districts) to H. M. vessels and transports at the following places, for one year, from 1st April, 1887:—

- Sydney
- Albany, King George's Sound, W. A.
- Melbourne
- Adelaide
- Hobart
- Brisbane
- Townsville
- Cooktown
- Suva., Fiji

Forms of tender can be had on application.
Coal to be delivered alongside H. M. ships.

E. A. AMPHLETT.

Figure 4.9: Advert for tenders for coaling contracts for the Australasian Stations. *Sydney Morning Herald*, 19 February 1887.

The shipping of Australasian coal to naval stations and those commercial stations used by the navy again utilised commercial coal trade networks. With so few stations in the Pacific, and only Esquimalt along the entire western seaboard of North and South America, commercial stations were especially important to the Royal Navy in these waters, and thus existing trades, with coal as the return cargo, were integrated with the shipping of naval coal. The need for coal worldwide for commercial purposes before 1870 had led to the development of a Pacific coal trade centred on Australia. This took coal as far as the western coasts of North and South America as part of a triangular trade. Taking general cargo to Australia, ships then took coal from Newcastle NSW to South America, where they took copper ore, nitrates and guano back to Britain, or to California, where they returned with grain. Aided by prevailing winds and currents, as well low cargo rates, the coal was transported as 'backhaul' in wooden ships. This trade was slow to develop, but expanded massively after 1860, and Australian coal became the dominant supplier to key mercantile coaling stations such as Valparaiso and San Francisco. It also supplied coal for commercial

steamships to Hong Kong and Singapore, as well as Pacific Islands. This trade further expanded after 1880, with decreasing freight rates, large iron sail ships designed with increased carrying capacity, and improvements in the docking infrastructure in Newcastle. The dominance of Newcastle as a coaling port for Australasia, South Eastern Asia, and the western seaboard of the American continent led to it was such that it earned the nickname 'Coalopolis'. It was the busiest port in Australia, and by the 1880s it was the largest coal exporting city in the southern hemisphere.¹⁴² Although the Royal Navy did not ordinarily use Australian coal in normal circumstances after 1882, it seems likely that the Admiralty continued to utilise the superior shipping facilities of Australia. Although evidence exists of Westport coal being transported to Australian ports, it is not well documented how Westport coal was sent further afield – for instance to the China Station – although it is highly likely that it utilised the infrastructure centred on Newcastle.¹⁴³

At the Station

Irrespective of where the coal was sourced from, the navy had to utilise the communication infrastructure that existed between the foreign stations and the Admiralty in order to ensure an adequate supply of quality coal worldwide. It was imperative that this communication was effective so that foreign stations had enough coal to support the navy whatever the situation, but not having vast quantities of expensive coal deteriorating in storage. Understanding how this part of the coaling infrastructure worked at an individual station level is difficult, however. Import statistics for naval coal to overseas stations are

¹⁴² Michael Clark, "'Bound out for Callao!': The Pacific Coal Trade 1876 to 1896: Selling Coal or Selling Lives? Part 1', *Great Circle*, 28, no. 1 (2006); Michael Clark, "'Bound out for Callao!': The Pacific Coal Trade 1876 to 1896: Selling Coal or Selling Lives? Part 2', *Great Circle*, 29, no. 1 (2006).

¹⁴³ *Sydney Morning Herald*, 27 April 1898; *Sydney Morning Herald*, 31 October 1900; *Sydney Morning Herald*, 20 November 1907; *Sydney Morning Herald*, 17 July 1908; *North Western Advocate* (Tasmania), 7 January 1905; *Mercury* (Tasmania), 6 January 1905; *Sydney Morning Herald*, 19 December 1902; *Adelaide Advertiser*, 6 May 1903; *Sydney Morning Herald*, 19 December 1902; Letter from Vice Admiral Lewis Beaumont to Admiralty, 12 January 1903, TNA, ADM 1/7654.

rare, incomplete, and inconsistent, making long-term analysis unfeasible. It is possible, however, to assess the steps taken by the Admiralty to improve the efficiency of coaling infrastructure. This was achieved through better accuracy in coal estimates for each station, and, by collecting large amounts of data, creating a knowledge of foreign stations used by naval ships. Such processes were inherently prone to miscalculations, however, and even with extensive and detailed communications, fluctuations in supply and stocks at stations occurred throughout the period.

The supply situation at an individual level is complicated by the navy using three distinct types of coaling stations: those which were overseen by naval personnel, those which the navy had commercial contracts for coal and/or agents at, and those stations where naval ships bought from the open market. Those stations overseen by naval personnel were predominantly naval stations, such as Gibraltar, Malta, or Singapore, but also included major colonial port cities not listed under Admiralty coaling stations, such as Sydney and Melbourne.¹⁴⁴ Stations where the Admiralty employed commercial agents or held contracts for supply were generally foreign commercial ports, often, but not exclusively, owned by allies. These included ports such as Shanghai and Madeira. Ships' captains appear to have largely been allowed free rein on where they coaled, but coaling at the third type of station, where no contracts stood, was discouraged. Despite this policy, a memorandum had to be sent in 1882 urging the cessation of this practice, following a spate of coal purchases at high rates.¹⁴⁵ This request seems understandable, especially when considering that there were over thirty commercial stations, in addition to those owned by the Admiralty, where agreements for coals existed.¹⁴⁶ Furthermore, in response, the

¹⁴⁴ 'Coaling Stations' (c.1891?), NMM, MSS/76/111.

¹⁴⁵ Letter from Admiralty to all stations, 28 April 1882, TNA, ADM 122/23.

¹⁴⁶ 'Steam Vessel Coals 1882-3', NMM, MLN/163/4 [12].

Admiralty sought to extend the amount of individual arrangements it made with local agents for export, thus reducing the need for expensive purchases on the open market.¹⁴⁷

Records which show how much coal was sent to each station, and how these quantities were estimated and subsequently ordered, are patchy if they exist at all. In the period immediately prior to this study, from 1855 to 1870, parliamentary papers detail the amount of coal purchased by a selection of foreign depots, and specify how the contracts were arranged. From these it appears that in the early years of the steam navy, the 1850s and 1860s, there was no overall system for the contracts of foreign stations. Coal was ordered either by public tender, through commissioned agents, casual offers, private agreements or, if sufficient coal was nearby, local contracts. Larger stations, such as Gibraltar, Singapore, and Jamaica used several different methods at once. Aside from the large amounts of coal delivered to the Mediterranean and Black Sea during the Crimean war, several stations stand out as prime consumers of coal. These stations are hardly surprising, being the main naval stations worldwide, including Malta, Gibraltar, Hong Kong, Cape, and Jamaica.¹⁴⁸

These station reports come to an abrupt halt in 1871, however, where they were replaced by reports of the type and consumption of coal of individual ships.¹⁴⁹ As a result of this change, there is a lack of official documentation on how coal shipments were arranged beyond this date. Where official statistics from other government departments do exist, they are too ambiguous to be of much use. These often fail to differentiate between the types of coal exported, the specific export destination, or the purpose for which the coal

¹⁴⁷ Memorandum of 17 May 1906, TNA, ADM 128/146.

¹⁴⁸ British Parliamentary Papers, 1860 [363], *Coals (navy). Return showing the quantities of steam coals annually purchased for the use of Her Majesty's navy and supplied to the several depôts abroad, in each of the years 1855, 1856, 1857, 1858, and 1859; &c.; 1871 (20) Navy (coals in store).*

¹⁴⁹ British Parliamentary Papers, 1871 [166], *Navy (coal). Return for the six months ending the 31st day of December 1870, showing the description and quality of coal consumed on board each ship of the navy.*

was to be used.¹⁵⁰ To compound this, by the beginning of the twentieth century the Admiralty no longer published how much coal in total it was using, stating it was not 'in the public interest to make a statement as to the amount of coal actually consumed by the Navy'.¹⁵¹ Even where figures for individual stations exist, they are not separated from commercial coal imports, and as naval coaling imports are in general dwarfed by commercial imports, these can tell us little. The only figures that do give meaningful insight, therefore, are those that deal with imports of solely steam-coal to ports which only catered for naval ships. These only appear to exist in the South Wales Coal Annuals, which began in 1903. Even with these figures, however, it is difficult to get an overall picture of the scale of naval coaling. The only large naval coaling station that was not also primarily a commercial coaling station was Gibraltar, which was importing some 221,450 tons of steam and bituminous coal in 1903. None of the other purely naval stations, such as Halifax, Esquimalt, Ascension, Simon's Town, and Bermuda imported more than 20,000 tons that year, compared to the largest commercial stations which imported several hundred thousand tons. Thus is it difficult to assert much from these figures, other than that Admiralty coal use was dwarfed by that of the commercial sector.¹⁵²

A lack of comparable figures also prevents any meaningful insight into changes in supply over time. This greatly impedes analysis of the relative importance of stations and how coal supply were affected by wars and political tension, but does not inhibit a useful study of this infrastructure. In fact, what was remarkable about the supply of coal to naval stations across the world was often not the amount of coal being transported, but the distances covered to ensure that quality fuel was available in far-flung corners of the oceans. For the Admiralty, naval coal supply was a question of quality, not convenience.

¹⁵⁰ British Parliamentary Papers, 1878 [240], *Coals, cinders, &c.*

¹⁵¹ First Lord of the Admiralty, Mr. McKenna, in response to a question to Mr Markham, House of Commons Debate, *Hansard*, 6 July 1908, col. 1224; British Parliamentary Papers, 1900 [134], *Coal tables*.

¹⁵² *South Wales Coal Annual*, 132-157.

Although the estimates themselves no longer exist, it is pertinent to assess how the Admiralty attempted to approximate how much coal was needed for the Navy as a whole, and at each station. In the early years of the steam navy Admiral Milne attempted to use complex calculations to assess future coal usage, but these produced figures that have now come to be seen as overestimates.¹⁵³ Of course, experience produced a level of accuracy in approximating the amount of coal needed, but with the expansion of the steam navy more systematic methods were introduced. In 1872, the Admiralty announced that marks be put on bunkers and storehouses to ensure the maintenance of adequate supplies at stations.¹⁵⁴ Such measures have led Wilson to suggest that 'by the late 1870s progress had been made in regulating coal supplies. A regular plan existed for supply, supply contracts, and monthly and annual returns from foreign stations to monitor the coal supply system'.¹⁵⁵ However, while it is true that the effects of coal consciousness had begun to improve the efficiency and accuracy of supply, contract negotiations and supply in the 1870s appear to have been largely ad hoc responses to necessity rather than a measured, regular system of supply.

Estimating coal usage was particularly difficult due to uncertain amounts of ship use, different patrol patterns for squadrons, and how much coal was already in store.¹⁵⁶ As well as estimates of tonnage, the Commander-in-Chief also had to provide costs for the purchase and maintenance of coaling craft, as well as the labour for the receiving and issuing of coal to the fleet.¹⁵⁷ Early in this period coal usage at stations could also be affected by confusion about who exactly could be issued naval coal. A letter of 1876 suggests that the China Station had been issuing coal not just to the Royal Navy, but also to commercial ships and foreign navies. In response to this, the Admiralty suggested that

¹⁵³ Wilson, 'Fuelling the Steam Navy', 38.

¹⁵⁴ Admiralty letter dated 14 April 1874, TNA, ADM 123/110.

¹⁵⁵ Wilson, 'Fuelling the Steam Navy', 95.

¹⁵⁶ 'Steam Vessels at home and abroad 1879/80', NMM, MLN/163/4 [5].

¹⁵⁷ 'Fleet coaling service – Memorandum of Instructions as to Annual Estimates 8 July 1901', TNA, ADM 125/56.

foreign navies should only be supplied if coal could not be obtained elsewhere and there was enough spare in storage.¹⁵⁸

It was not until the 1880s that real steps occurred to improve and professionalise the supply of coal to foreign stations, in line with other changes enacted in response to the coaling issue.¹⁵⁹ In order to instigate these changes, the Admiralty first needed to gain a knowledge of the existing infrastructure. A letter from the naval secretary, Robert Hall, dated August 1880, presumably to Commanders-in-Chief of naval stations, contained

a proposal to obtain and tabulate exact particulars, as far as possible, of the quantity, quality, price etc of the coal likely to be available at any time at all ports abroad. The advantages of the possession of this information, whether in peace or war, especially if it is carefully gathered and periodically revised, are obvious, and my Lords have been pleased to approve the proposal.¹⁶⁰

Instructions were enclosed to collect data for each port under their command that was visited or may be visited by Royal Naval ships. A form, the D680 (see Figure 4.10), was enclosed, which was to be returned as quickly as possible. Due to the extensive use of commercial infrastructure, the form required data not just from naval personnel but from any organisation importing coal to any ports under their command. The form covered three pages, and collected key details about the type of coal at each station, how much was on average imported annually and kept in store, what price the stations were paying for their coal, which included freight, and who their agent in Britain was. The forms also asked about the station itself, how much coal was stored on shore under cover and on hulks, and how

¹⁵⁸ Letter from Robert Hall to China Station, 1 April 1876, TNA, ADM 125/22.

¹⁵⁹ No sources appear to exist to suggest whether this was done at other stations or not. The previous correspondence is held in TNA, ADM 123/110.

¹⁶⁰ Letter from Robert Hall, Naval Secretary, August 1880, TNA, ADM 123/110.

many ships could be coaled simultaneously, as well as other details about coaling arrangements at the ports.¹⁶¹

COALING FACILITIES, &c., at H.M. Naval Depot *7/4*
at *Cape of Good Hope.*

	1878-9	1879-80	1880-1	1881-2	1882-3
Quantity of Coal—					
Expenditure in each financial year	6,140	26,420	8,020	9,606	
Balance at the end of each financial year	1474	4960	5344	3,164	
Description of Coal kept in store	<i>Welsh and North Country.</i>				
Where are any local mines, where are they situated, and what is the description of Coal obtainable therefrom?	<i>None nearer than Port Elizabeth. These are not yet sufficiently developed to supply the Table.</i>				
Storage accommodation for Coal	Ashore		Afloat		
	Under Cover	Not under Cover			
	6,000 tons	15,000 tons			<i>Nil</i> tons
What further accommodation can be obtained, and by what means?	<i>None except by either instituting a floating depot or by increasing the area of the land extending the Coal wharf parallel with the sea beach, or by filling in the present harbour and building another in deeper water where the lighter could be filled by wind.</i>				
At what distance are the sheds from the wharves?	<i>One end adjoining the further end about 160 Yards.</i>				
Is the Coal conveyed from the sheds direct on board the ship by baskets or bags, or is it necessary to send it by railway trucks or carts to the wharves?	<i>Bags; hand barrows were used until quite recently, when railway trucks were substituted to convey the Coals on Daps from Store to wharf. Hand barrows and railway trucks are used in conjunction.</i>				
How many trucks and carts are there, what is their capacity, and in what condition are they, and how are they propelled?	<i>Trucks each carrying about 10 Daps or 1 Ton, propelled by manual labour, about 30 hand barrows are also used.</i>				
Is it possible and alongside wharves—	<i>Not sufficient depth of Water</i>				
(a) How many wharves are there, and in what condition are they?					
(b) How many vessels can be coaled simultaneously, and of what tonnage?					
(c) What depth of water is there at low and high tides?					

Figure 4.10: Form returned by stations informing of the coaling situation, 1882. TNA, ADM 123/110.

With the information it collected, the Admiralty produced a volume in 1882 to be distributed amongst Royal Navy vessels. This was not the first of its kind, but was certainly the most accurate thus far, as the previous guide had glaring errors. For example, a letter in

¹⁶¹ Ibid.

1880 informed the Admiralty that no coal was stored at Cape Coast Castle, despite it being listed as a coaling station.¹⁶² Such errors could be calamitous, and could potentially leave a ship stranded at a station without fuel. A key facet of the new edition was, therefore, to create a more accurate picture of naval coaling infrastructure by eradicating these errors. It detailed the coal contracts in place at each station, as well as information on coal storage accommodation and fresh provisions. Due to the inconsistent nature of the data gathering, some stations were not included and, as the coaling situation was not static, for it to remain accurate the Admiralty's data gathering had to be perpetual. It was therefore suggested that corrections and additions be made to the volume by those using it, and these were to be sent to secretary of the Admiralty to disseminate. The annual demand form was also continually updated to allow the collection of more data about coaling at various stations, including details of coal expended in the past year and the amount kept in store.

Through collecting data about coaling stations, and using it to create a more informed knowledge of the processes involved, the Admiralty was making a clear concerted effort to take better control of its coaling infrastructure. Furthermore, the Admiralty recognised that a growing fleet and increasing coal consumption would necessitate further changes. This can be seen in requests for information about the future possibility of using coal from local mines, and whether the stations could be expanded to cope with a larger amount of coal. The Admiralty was also seeking more detailed information about the sites themselves, including the speed of loading at the stations, and requesting a sketch or photo of the layout (see Figure 4.11).¹⁶³

¹⁶² Letter from Cpt. William Liddell to Admiralty, 1880, TNA, ADM 123/83.

¹⁶³ Letter dated 31 August 1882, TNA, ADM 123/110.



Figure 4.11: Drawing of Yokohama coaling station included with forms sent to the Admiralty, 1882. TNA, ADM 185/84.

1884 saw another adaptation to the system, and a new form, the D-609 (see Figure 4.12), was introduced for commanders to state the annual demand for each station. The form was more complicated again, asking for further details on all aspects of coaling at the stations. Particularly important was the request to state whether coal purchases were made through the Admiralty or through local agents, suggesting that the Admiralty were looking to make efficiency savings by controlling supply more effectively. There was also an effort to structure the shipping of coal. This was done through informing stations of the minimum size of collier available, and thus the smallest amount of coal that could be ordered. Shipment periods when coal could be ordered were also defined, and the stations were advised that the earlier in this period that they ordered coal, the better.¹⁶⁴ Although the Admiralty were clearly seeking to improve the effectiveness of its coaling

¹⁶⁴ Letter from Evan MacGregor, 1 August 1884, TNA, ADM 123/110.

infrastructure, the nature of the queries included in these forms do somewhat question how much the Admiralty knew about how its ships were coaling before the 1880s, two decades into having a largely steam navy. They also imply that before this, the Commanders-in-Chief of each station were almost solely responsible for ensuring that coaling worked within their remit.

Form D.-609.
It is transmitted from each depot on a foreign station so as to be received at the Admiralty not later than the 1st November,
except as stated in Note (d) below.

ANNUAL DEMAND FOR COALS.—Vote 10, Section 1, Subhead C.

Her Majesty's Naval Coal Depot at _____ 18__

Submitted that the enclosed demand for the ensuing financial year may be forwarded to the Admiralty if approved.

Naval Storekeeper.

Approved and forwarded, a copy has been sent to the Commander-in-Chief for his information.

The Director of Stores,
Admiralty, Whitehall.

Notes (a) This return is to be forwarded to the Admiralty, through the Senior Naval Officer, if one is present, and at the same time a copy of it is to be forwarded to the Commander-in-Chief on the station.

(b) Where this return has to be forwarded from the depot before the close of September, the headings herein should be altered as follows, viz:—

of column 5 to "actual of 5 months ended at close of August last," or "actual of 4 months ended at close of July last," as the case may be.

" 6 " "probable of remaining period to close of March next."

and of columns 16, 17, 18 and 19 to "store at close of August last," or July as the case may be, and in column 15 alter "close of September" to "close of August," or July as the case may be.

(c) In preparing this estimate, provision is to be made that there shall be at no time less than six or nine months stock on hand, except at Gibraltar and Malta where coal can be delivered by steam colliers within a few days of its shipment from England and therefore a reserve stock of from four to six months only is to be provided for. (N.S. 52, 60 of 1st August, 1884.)

(d) As the shipments for Hong Kong, Nagasaki and Yokohama are required to be made in January, February, or March, the annual demands from those depots are to be transmitted in future in time to arrive at the Admiralty by the 1st October. (N.S. 52, 60 of 1st August, 1884.)

(e) At Portland and Haslemere, a reserve stock equal to four months expenditure is to be provided for, and column 11 is to be left blank.

N.S. 2315/84. G & S [1886] 500 2/84

Figure 4.12: Form D-609 annual demand for coals, 1884. TNA, ADM 123/110.

To standardise naval coaling worldwide, the Admiralty needed a formalised communication structure with Commanders-in-Chief of foreign stations the about coal

estimates, and this was achieved through the use of uniform contracts and forms. The surviving correspondence between Commanders-in-Chief and the Admiralty suggests that it was commonplace for differences of opinion to emerge. Unsurprisingly, much of this stemmed from stations asking for larger estimates as consumption increased, and the Admiralty replying with requests for more economy and restraint. Surviving exchanges suggest that the Admiralty generally got its way, despite the protestations from foreign stations, who complained that useful exercises and fleet manoeuvres would have to be sacrificed.¹⁶⁵

Although these measures improved the Admiralty's knowledge of coaling arrangements in these stations, the issue was evidently not completely solved. In 1903, the Admiralty had to be informed by the China Station that naval ships in Japanese waters did not use China Station fuel, and perhaps more worryingly that the naval station at Yokohama had been out of use for some time.¹⁶⁶ Similarly, efforts to streamline shipping were not quite as seamless as had been hoped: all that survives of the subsequent correspondence is a reply from the West African stations that states 'that in the case of Simon's Bay and Fernando Po the dates fixed for shipments are unsuitable'.¹⁶⁷ Indeed, even with these improvements in communication and professionalisation, coal estimates for foreign stations still remained a minefield. This difficulty in estimating how much coal to send to naval stations can be seen from the constant fluctuation in the additions to or reduction of stocks of coals kept in store at overseas stations (see Figure 4.13).

¹⁶⁵ Various correspondences from the China Station, TNA, ADM 125/56.

¹⁶⁶ Memorandum dated 7 April 1903, TNA, ADM 125/56.

¹⁶⁷ Letter dated 2 September 1884, TNA, ADM 123/110.

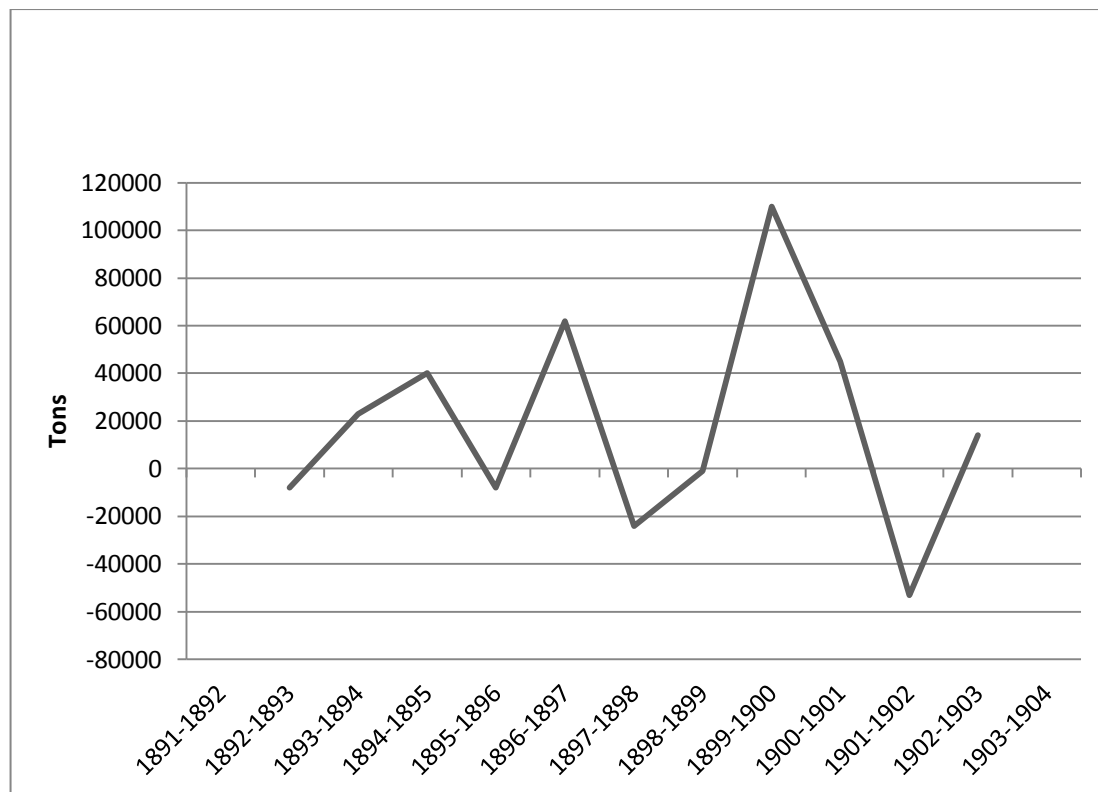


Figure 4.13: Chart showing additions to or reductions in stocks of coal at naval stations, 1891–1904. Compiled from British Parliamentary Papers, 1904 [Cd. 1991], *Royal Commission on Coal Supplies. Second report of the Royal Commission on Coal Supplies. Vol. II. Minutes of evidence and appendices*, 143-155.

Stresses and Failures in Coaling Infrastructure

Efficient infrastructure is often made invisible by its own success, ‘black boxed’, and thus often the only time it becomes noteworthy to contemporaries, or evident to historians, is when it fails.¹⁶⁸ What is remarkable in the case of British naval coaling infrastructure was how few failures occurred. Despite its size and complexity, the resilience of this coaling infrastructure to unexpected urgency or strain was extraordinary – indeed in 1892, the *New York Times* described British naval coaling as an ‘enormous system under ... splendid control’.¹⁶⁹

¹⁶⁸ Bruno Latour, *Pandora’s Hope: Essays on the Reality of Science Studies* (Cambridge, MA: Harvard University Press, 1999), 304. See also Graham, *Disrupted Cities*.

¹⁶⁹ *New York Times*, 6 March 1892.

Although there were early teething problems with supply, these largely predate this study. Indeed, accounts of British ships being unable to obtain coal are very rare, suggesting that this was highly exceptional, especially as the period went on. H.M.S. *Swinger*, under the command of John Marx, is one such example from 1884, however. Running very low on coal in Matapui, in the south-west Pacific, Marx was forced to negotiate with German naval officers to obtain fuel, eventually being able to obtain coal in return for taking the German mails. Although this situation perhaps reveals the relative weakness of British coaling infrastructure in the Pacific, this failure can be easily explained by the unique situation of the ship. Not only was it a twelve-year-old hybrid ship with an inefficient engine, but it also had, for unknown reasons, the ability to carry only 40 tons of fuel at a time.¹⁷⁰

The main weakness of British infrastructure in this period was caused by the Royal Navy's heavy reliance on Welsh coal, however. Predominantly using one type of fuel meant large-scale and long-term strikes in the Welsh coalfields could have been disastrous for the navy, causing huge supply issues and the paralysis of the fleet. Moreover, strikes were not uncommon. The worst of these occurred in 1898, and showed how easily the Admiralty could face a crisis not of its own making. Yet, although the strike precipitated a disastrous lock out which lasted some twenty-one weeks and five days, the Admiralty was able to not only avoid disaster but largely to continue in only a slightly limited capacity.

The strike was a result of tensions over the sliding scale used to determine colliers' wages, which had surfaced as early as 1892, but boiled over in 1898.¹⁷¹ Almost as soon as the strike began, the press recognised that it would cause significant problems to both the

¹⁷⁰ John Marx, *Recollections of the South West Pacific*, Royal Naval Museum, Manuscript Collection, 2009.39/1/20.

¹⁷¹ 'Merthyr Miners And The Sliding-Scale', *Western Mail*, 19 July 1892; Joseph Morewood Staniforth, *Cartoons of the Welsh Coal Strike, April 1st to Sept. 1st, 1898* (Cardiff: Western Mail, 1898), 3.

Admiralty and the liner companies.¹⁷² The Admiralty immediately put in place restrictions on the use of Welsh coal in the hope that this would allow its operations to be largely unaffected by the strike.¹⁷³ The Admiralty was still able to use coal from those collieries in Wales that were not involved in the strike, but this appears to have proved insufficient, and, as the strike continued, it was clear that alternative sources for coal would need to be found. This temporarily caused the navy to fall back on the previous fuelling arrangement, and navy ships used North Country coal in mixture, with the Admiralty inviting tenders for emergency contracts.¹⁷⁴ It is unclear how the strike affected other foreign stations, but, due to the shortage of quality Welsh steam-coal, Bermuda and Halifax bought quantities of American Pocahontas coal.¹⁷⁵

With a settlement taking far longer to appear than had been expected by the Admiralty, the naval manoeuvres of 1898 were cancelled.¹⁷⁶ The restrictions imposed were remarkably successful though, and despite the obvious strain on naval coal supplies caused by the strike, the Admiralty was able to withdraw the limitations on Welsh coal use almost immediately after it ended.¹⁷⁷ While this episode was something of an embarrassment for the Royal Navy, the strike largely proved the durability and versatility of the coaling infrastructure. Although concerns were raised about the levels of coal stock held, there was little the Admiralty could do without large amounts deteriorating in storage, and the development of patent fuel for reserve use was already underway.¹⁷⁸

The danger of strikes was a serious one, and thus when war came in 1914 the government took control of the Welsh coal industry 'to ensure that strikes over wages did

¹⁷² 'The Coal Strike', *Daily News*, 8 April 1898.

¹⁷³ 'Letter from R.C. Webster', *Morning Post*, 8 April 1898.

¹⁷⁴ 'Imperial Parliament', *Morning Post*, 25 June 1898; Appropriation Bill, House of Commons Debate, *Hansard*, 12 August 1898, vol. 65, cols 15-29; British Parliamentary Papers, 1904 [Cd. 1991], *Royal Commission on Coal Supplies. Second report of the Royal Commission on Coal Supplies. Vol. II. Minutes of evidence and appendices*, 143-155.

¹⁷⁵ *Hobart Mercury*, 28 September 1900.

¹⁷⁶ 'The Naval Manœuvres Abandoned', *Standard*, 20 June 1898.

¹⁷⁷ 'Welsh Coal for the Navy', *Isle of Man Times*, 10 September 1898.

¹⁷⁸ 'Letter from R.C. Webster', *Morning Post*, 8 April 1898.

not stop supply of coal to the Royal Navy'.¹⁷⁹ When a dispute led to a strike in 1915 did occur, however, it is noticeable that the reaction of the government was quite different. Whereas the government had largely remained at a distance from negotiations in 1898, the Chancellor of the Exchequer, David Lloyd George, travelled to South Wales just four days into the strike to offer concessions, successfully ending the dispute.¹⁸⁰ Even had Lloyd George failed to prevent a strike of the magnitude of 1898, however, Britain would still have held an advantage over its enemies. Such a strike would sever coal supplies to all navies that relied on Welsh coal, and make it more difficult for foreign vessels to obtain other sources of coal, as the Royal Navy would dominate those supplies. Furthermore, the local coal supplies, such as those in Nova Scotia, Vancouver, South Africa, and Australia, although seen as unfit for general naval use, would in emergency situations still be an equal, and usually better, fuel than that obtainable by an enemy. It was through this ability to control a large portion of suitable coal, and the infrastructure to make it available abroad, allowing it to deny its enemies, which made Britain's coaling apparatus so robust, even in times of crisis.

As well as a reliance on two sources of coal, the other obvious weakness in Britain's coaling infrastructure was its scale, and distance made the metropolitan oversight of the sub-imperial coaling network based in Sydney particularly difficult. Indeed, the Admiralty's lack of knowledge of the coaling infrastructure that existed in Australasia meant that they were even more reliant on agents in Sydney than they were in Cardiff. The autonomy of the local agents caused various problems for the Admiralty. For obvious reasons, such issues often involved difficulty in communication. On occasion, coal shipped to a station was found to be below the standard expected, and was returned with a complaint from the naval officer in charge, but these issues were not always communicated with London,

¹⁷⁹ Glamorgan archive guides:

http://www.archiveswales.org.uk/anw/get_collection.php?inst_id=33&coll_id=2318&expand.

¹⁸⁰ G.R. Carter, 'The Coal Strike in South Wales', *Economic Journal*, 25, no. 99 (1915), 453-465.

meaning little was done about it.¹⁸¹ There also seemed to be occasional problems with communication between agents and the stations. For example, in 1903, Admiral Cyprian Bridge, Commander-in-Chief of the China Station, complained that no telegram had been sent to inform him of when a coal shipment had actually left. The only documentation he had was the agreement form, dated 6 March, yet by 17 July nothing had been heard of the shipment. It later transpired that it had not actually left until 13 June, 15½ weeks after the form had been sent.

The autonomy of the agents could also bring about questions about abuses of power, such as those Messrs. Parbury and Lamb faced in 1875. With such power over Admiralty coal supply, it was inevitable that disgruntled colliery owners would accuse agents of favouritism, but the existence of complaints from senior naval officers about quality of fuel suggests larger problems. These accusations were also very serious. Not only was it suggested that the agents were supplying the Australia Station with low-quality fuel, but also that they were using collieries in which they had large interests in.¹⁸² Although the matter was dismissed by the Admiralty, coal supply was soon changed, even if the agents were not.

These problems appear to have been exceptions, however, usually resulting in consultation with the agents, followed by a change of practice.¹⁸³ It would seem that the system as a whole worked remarkably well, and there is no indication of the Admiralty ever considering taking command of any facet of the system at any point. This of course was no accident, as from the 1880s onwards measures were taken to improve the navy's ability to mobilise swiftly at the outbreak of war. These have been discussed at a departmental level in the previous chapter, but it is pertinent to assess how this worked on the ground. As has been shown, Britain's ability to mobilise in a war scare was tested through naval

¹⁸¹ Letter of 31 August 1877, Storekeeper's Out-letters to the Admiralty 1875–1878, NMM, HAL D/5.

¹⁸² Letter from H.M.S. *Clio* at Sydney to Admiralty, 22 March 1873, TNA, ADM 122/22.

¹⁸³ Letter from Cyprian Bridge to Admiralty, 25 July 1903, TNA, ADM 125/56.

manoeuvres which began in the late 1880s, but it was not until the twentieth century that arrangements for the continuance of supply of coal in an extended naval war are finalised, with the threat of a major European war looming large.

In 1900 a statement was sent from the Admiralty to its new agents, Messrs. Harrison, Moore and Company, based in Bute Docks, Cardiff, outlining arrangements that had been made should Britain be involved in a naval war. This document shows how the Admiralty, which was increasingly improving Britain's ability to swiftly mobilise the Royal Navy, planned to provide the navy with coal at short notice. 'Special arrangements' were made with principal Welsh collieries to provide coal in emergencies, with railways companies to dispatch the coal to port by rail, and dock companies were 'to give preference in loading to all colliers taken up on admiralty account'. The Cardiff-based agents were also instructed to nominate representatives in the other South Wales ports to make arrangements for mobilisation there. Although the agents and colliers would be responsible to the Director of Navy Contracts, mobilisation would effectively be carried out by private businesses.¹⁸⁴ An example of this mobilisation in practice was during a war scare in 1911. Fearing a naval war with Germany in the North Sea, the Admiralty co-ordinated the movement of Welsh coal, by ship and railway, to the north-east of England and Scotland.¹⁸⁵ As a result of these preparations, at the outbreak of the First World War the Admiralty was able to implement strategies swiftly for coaling in war. Not only were transport arrangements already in place, but the Admiralty was also able to order collieries to retain coal stocks in the event of the navy needing more supplies.¹⁸⁶ The success of these actions reflects how a coaling consensus at government level enabled operations to be effective on the ground.

¹⁸⁴ 'Instructions to the Admiralty Agents in South Wales for Shipping Coal', TNA, ADM 116/903.

¹⁸⁵ 'Coal For The Navy', *The Times*, 12 September 1911.

¹⁸⁶ *Border Watch* (South Australia), 1 August 1914.

The robustness of British coaling infrastructure is particularly apparent when compared to the failings of other nations' navies. Indeed, these numerous examples of disruption and disaster are in themselves a testament to the effectiveness of the Admiralty arrangements. The first example is particularly pertinent as it directly involved a British vessel that was able to escape tragedy, while foreign warships faced disaster. On 13 March 1889, when a hurricane hit Apia, Samoa, there was damage to 'every vessel in the harbour or shore except the English man-of-war *Calliope*, which got to sea'. Of those in harbour, two American ships, the *Trenton* and the *Vandalia*, as well as two German ships, the *Adler* and the *Eber*, were a total loss, and two more ships, the American *Nipsic* and German *Olga*, were badly damaged. Despite many of the crews being saved, the loss of life was horrific. Reports state that 'the *Vandalia* lost four officers and thirty-nine men ... and the *Nipsic* lost seven men'. In addition, 'German losses are ninety-six', bringing the total loss of life to 146.¹⁸⁷

Such a tragedy brought with it questions about how and why the German and American ships had not been able to get to sea as the British had done. Although the British ship had been nearer to the harbour entrance, its location was not the reason cited for avoiding the disaster, but that it was stocked with quality fuel. While the British ship had easily been able to refuel with Westport coal at Auckland on the way to Apia, both the American and German ships had arrived without coal, and, despite possessions in the Pacific, had been unable to find quality fuel. The American coaling station of Pago-Pago, just thirty miles from Apia, had not been adequately supplied, and thus the ships were stranded in harbour. A *New York Herald* journalist remarked that although 'the island was acquired in 1872 ... our government has not apparently discovered in seventeen years the

¹⁸⁷ 'Hurricane in Samoa', *New York Herald*, 31 March 1889.

strategic importance of having an ample supply of coal there'. It was then pointed out that 'the nearest point at which coal could be obtained was Honolulu, 2,100 miles away'.¹⁸⁸

Even those who had been lucky enough to survive the ordeal faced a long wait before they could move on. Although coal had been sent nearly a month before the hurricane, the wooden ship carrying the coal from San Francisco would not arrive for another four weeks. Another ship, sent from Philadelphia, would have to navigate around Cape Horn to reach the Pacific, and thus was 'months' away.¹⁸⁹ What is obvious from the tragic tale is that, although the hurricane was an unforeseeable disaster, Germany and the United States, despite growing as naval powers, were not able to match Great Britain in terms of naval coaling infrastructure.

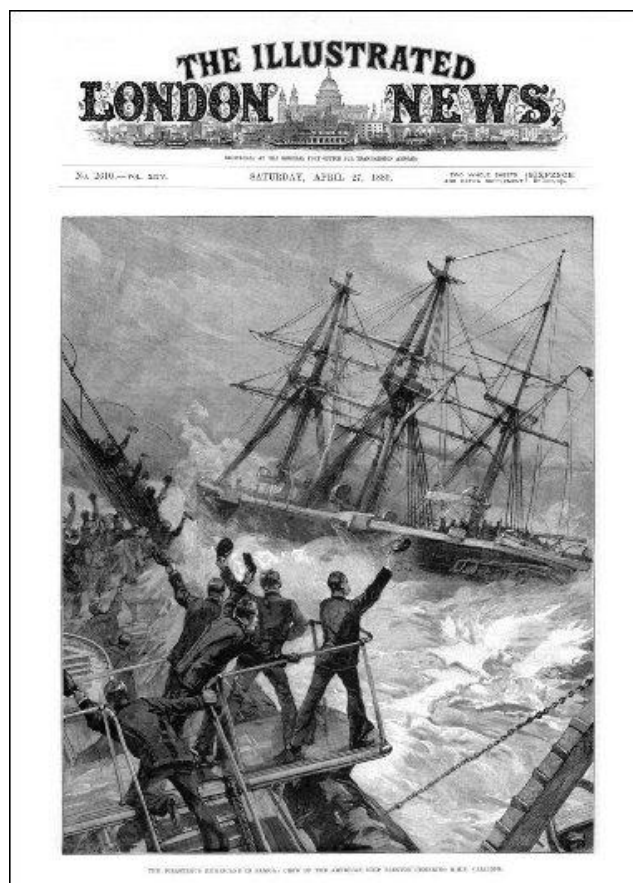


Figure 4.14: The *London Illustrated News* featured the tragedy on its front page on 11 May, 1889.

¹⁸⁸ Ibid.

¹⁸⁹ *New York Herald*, 31 March 1889. Original correspondence can be found in British Parliamentary Papers, 1889 [C.5756], *H.M.S. "Calliope." Report of the hurricane at Samoa on the 16th March 1889*. Other accounts can be found in TNA, ADM 1/6969; *New Zealand Herald*, 30 March 1889; Bach, *The Australia Station*, 220.

Perhaps a more famous example of a failure of naval infrastructure concerns the Russian Baltic fleet in 1905.¹⁹⁰ This is of interest to this study because of the way the British were able to weaken the Russian fleet through both the control of its own coaling infrastructure, and by exploiting Russia's lack of infrastructure outside its own waters. Forced to steam via the Cape when Britain refused the use of the Suez Canal, the Russian fleet was also denied fuelling opportunities, delaying its movement and causing vast inconvenience (see Figure 4.15). Although the Russians were able to make use of French coaling infrastructure, they constantly encountered British ships and possessions, and were even escorted by British ships around the Iberian coast.

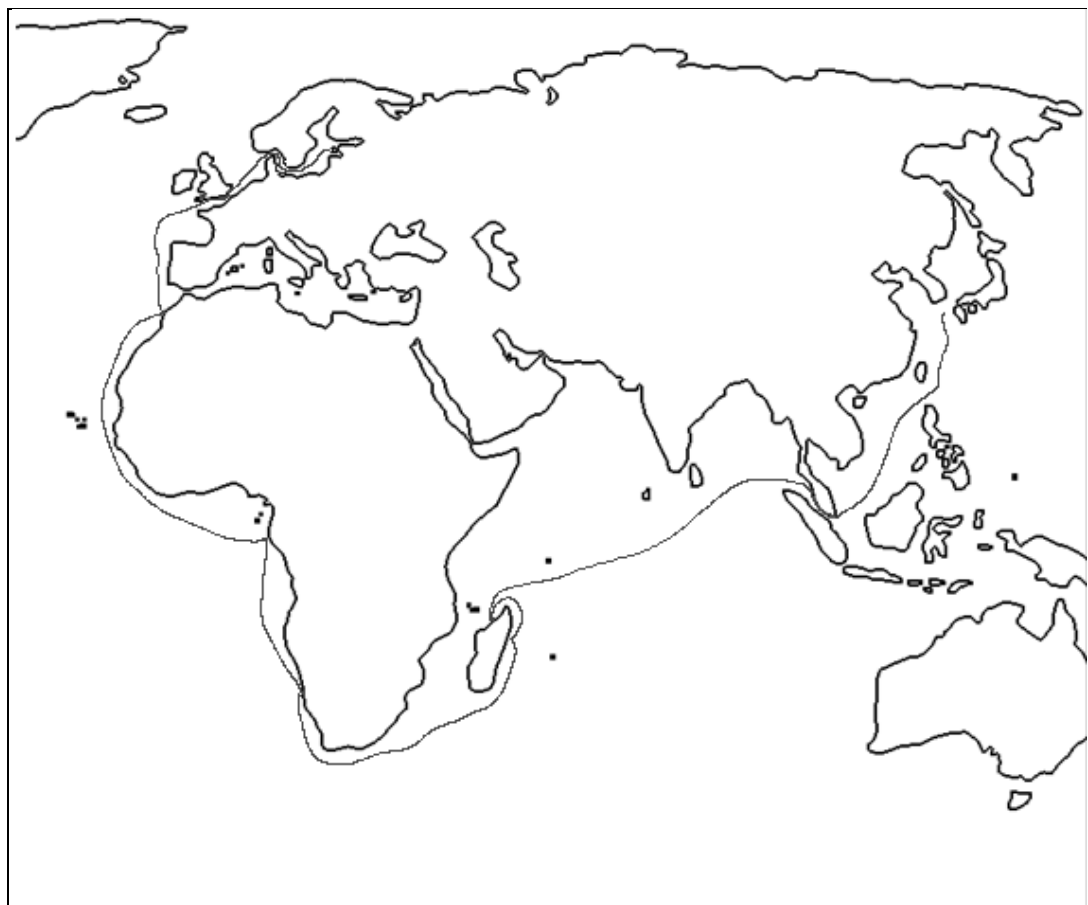


Figure 4.15: The route taken by the Russian Baltic Fleet, 1905.

¹⁹⁰ Konstantin Pleshakov, *The Tsar's Last Armada: The Epic Journey to the Battle of Tsushima* (New York: BasicBooks, 2002).

Much of our knowledge about the Russian fleet on its journey is provided by Eugene Politovsky, who was serving Engineer-in-Chief to the squadron, and was killed at the Battle of Tsushima. His diary is quick to recognise the value of coal: 'Coal! It is our weak spot. Our comings, our goings, our voyage, and even our success depend on coal'. Later, as the delays mounted up, and the precarious situation the Baltic fleet faced was fully realised, he remarked 'the coaling question is the question of life'. The diary constantly laments the lack of coaling infrastructure of his country and the struggles the Russian squadron faced, even with the ability to utilise the coaling stations of France, with infrastructure second only to Britain's. It also records how the fleet was constantly under the surveillance and at the mercy of the whims of the Royal Navy, which, with the ability to obtain quality fuel worldwide, was a constant presence for the Russian fleet.¹⁹¹

When the fleet arrived in Japanese waters, it was beleaguered from an 18,000-mile journey that had offered little chance for crucial maintenance, and was therefore heavily fouled, reducing its speed significantly in battle.¹⁹² The subsequent battle was a disaster for Russia, which lost all of its battleships, and a huge number of men, some 4,380 killed and 5,917 captured, including two admirals.¹⁹³ While it would be hyperbolic to suggest that it was coaling infrastructure that decided the Russo-Japanese War, it is clear that through its ability to obtain coal worldwide, and to deny its rivals the same right, Britain was able to inconvenience heavily, if not critically damage, a potential enemy's navy without having to engage in battle at all.

In fact, even outside of a war situation, Britain could cripple another naval power. In 1898, reports from Kiao-Chou, China, stated 'that the movements of the German fleet on the China Station are paralysed, owing to Russia and Great Britain having purchased the

¹⁹¹ E.S. Politovsky, *From Libau to Tsushima: A Narrative of the Voyage of Admiral Rojdestvensky's Fleet*, trans. Major F.R. Godfrey (London: John Murray, 1906), 257.

¹⁹² Robert Forczyk, *Russian Battleship Vs Japanese Battleship: Yellow Sea 1904-05* (Oxford: Osprey, 2009), 32.

¹⁹³ Geoffrey Regan, *The Guinness Book of Decisive Battles* (Enfield: Guinness, 1992), 178.

whole of the coal supplies in the Far East'.¹⁹⁴ Perhaps the most pertinent example of this was the plight of the famous American 'Great White Fleet' of 1907–1909, however. Seeking to demonstrate growing American military power and naval capability, the world tour instead exposed the fact that ship numbers and technology mattered little without infrastructure with which to coal the fleet. To this end, Senator Hale was particularly embarrassed that 'the greatest fleet of formidable ships that the world has ever seen' had to depend on 'the indulgence of foreign powers'.¹⁹⁵ Indeed, the United States only had eight colliers and poor port facilities and, as a result, during the cruise it used one Austro-Hungarian, seven Norwegian, and forty-one British colliers. More humiliation was to come, however, when the fleet arrived in Australia. There, the failure of British colliers to arrive to fuel the fleet 'caused great embarrassment' to Admiral Sperry – in charge of the exercise – 'for it illustrated how easily Great Britain could control the fleet's behaviour, stranding it halfway round the world, should the need arise, and causing it to be a "laughing stock"'. Indeed, because of Britain's refusal to supply them with coal, Sperry spent much of his time negotiating for Australian coal – generally of poor grade – at Auckland, Sydney, Melbourne, and Albany. A similar situation occurred at Port Said, where the Admiral spent most of his time arguing with coal dealers.¹⁹⁶ Not only was this humiliating for such an impressive fleet, but it also caused delays on their progress, with the poor quality of the Australian coal forcing some ships to cruise at the most economical speed. They were also delayed by problems of supply, especially at Apia, where there was no coal when they arrived. Contemporary reports reveal the level of uncertainty on board: 'the days went by ... days of anxiety ... and still no coal'. With the fleet arriving on 20 September, enough coal for four cruisers only arrived on 4 October, with the remaining cruisers stranded until 7 October.¹⁹⁷

¹⁹⁴ 'The German Navy Paralysed By Lack of Coal', *Perth Inquirer*, 3 June 1898.

¹⁹⁵ Robert A. Hart, *The Great White Fleet; Its Voyage around the World, 1907-1909* (Boston: Little, 1965), 33, 55.

¹⁹⁶ *Ibid.*, 198, 274.

¹⁹⁷ *Ibid.*, 201, 214.

This hugely embarrassing situation, precipitated by a lack of control over the infrastructure for the coaling of the fleet, severely undermined the imagined effect of the fleet on those who witnessed it. Indeed, despite several world records, there was a feeling in America that 'it had been unwise to display the nation's inability to coal and supply its own fleets'.¹⁹⁸

Conclusions

The coaling infrastructure used by the Royal Navy in the late nineteenth century was remarkable in many ways. The sheer geographical scale of operations, encompassing stations as far away as Esquimalt, Fiji, and Valparaiso was unparalleled, and the number of actors involved was extraordinary. Yet, despite this, the infrastructure was remarkably robust, even during crises, and especially compared with that used by Britain's rivals. This resilience stemmed from a combination of factors. The Admiralty was immensely fortunate that much of what was required already existed in Britain. Welsh steam-coal was the best in the world, and even the navy's secondary fuel, that of Westport, was as good as any other bar Welsh. Furthermore, the enormous and world-leading coal export industry was situated in Wales, which allowed the Admiralty to utilise commercial coaling networks in order to supply its coaling stations. Finally, Britain's burgeoning empire, both formal and informal, provided it with a plethora of strategic sites worldwide where it could store coal for the use of the navy, and its vast mail and telegraphic networks allowed swift communication.¹⁹⁹

Despite its reliance on the commercial coaling industry, the Admiralty had a significant role in the strength of British coaling infrastructure. Its trials of coal in the early

¹⁹⁸ Ibid., 300.

¹⁹⁹ John Beeler, *Birth of the Battleship: British Capital Ship Design, 1870-1881* (London: Chatham, 2001), 52.

part of the period were crucial to establishing suitable fuels, and its supervision over the commercial agents it employed to manage the structure was vital to ensuring the navy's needs were met. It was also key in the evolution of the infrastructure over time. With the Royal Navy unchallenged and the Admiralty still unfamiliar with the demands of a steam navy, the 1870s were a period of ad hoc measures. The rise of coal consciousness in the 1880s, however, led to a more considered approach to naval coaling, which involved two types of changes. Firstly, the Admiralty realised the need for premium quality coal at all its stations, and thus performed thousands of tests on coal from all over the world in order to find suitable examples. Ironically, in striving to expand the variety of fuel that the navy stocked, the Admiralty actually largely reduced itself to relying on two main sources, South Wales and Westport, finding that only they had the characteristics required by a modern steam navy.

Secondly, with the navy expanding, the Admiralty needed to ensure that stations were stocked with adequate amounts of quality fuel, but not so much that it deteriorated in storage. In order to fulfil these aims, the Admiralty standardised the administrative forms sent from the stations and the contracts it made with private companies. In doing so, it streamlined the naval coaling infrastructure, allowing the coal purchase to be more efficient, and export amounts to be more accurate. Furthermore, in line with wider efforts for the swift mobilisation of the navy in war, the Admiralty made contingency arrangements to ensure that coal of sufficient quality could be bought and exported to Britain's stations. These allowed the Admiralty to be able to react quickly and efficiently to crises, without having a hugely detrimental effect on the performance of the Royal Navy. These factors meant that, while British naval infrastructure was highly complicated, it remained an 'enormous system under ... splendid control'.²⁰⁰

²⁰⁰ *New York Times*, 6 March 1892.

Chapter 5: Coaling Labour

Coaling a naval ship at any station involved substantial work, especially as the amount of fuel ships required increased in the late nineteenth and early twentieth centuries. Coal, for all its advantages, is a solid, heavy, dirty fuel, and transferring it was a long and taxing process, however it was carried out. This chapter explores the coaling station as a working environment, and investigates the different systems employed to coal naval ships. Although one might expect the processes used to transfer coal to become more mechanised, even by 1914 coal was still largely loaded by hand, with the use of a simple hoist.¹ Thus, the history coaling warships in the period 1870–1914 is one largely of human labour, and this chapter is a story of the human experience of moving coal on board.

The chapter begins by assessing the systems employed for coaling naval ships. There was not one overall worldwide system of coaling, but methods varied from station to station. In fact, several could be used at a single site depending on labour, cost, and congestion. Nearly all methods involved extensive human labour, however, and the reasons for this were twofold. Firstly, mechanisation was enormously expensive to implement, and secondly, the remarkable efficiency of coaling using human labour made the benefits of mechanisation marginal. This was especially true when it is considered that the increasingly enormous warships had great difficulty in manoeuvring into harbours where more complex coaling systems could be installed. As a result of this lack of mechanisation, three main methods of coaling a warship in a station remained throughout the period 1870–1914: from a jetty, from lighters, or direct from a collier.

A reliance on these methods throughout the period in question makes the substantial human labour involved crucial to the story of naval coaling, and it is this human history which this chapter next analyses. The labour force employed by naval ships

¹ David W. Wragg, *Royal Navy Handbook: 1914-1918* (Stroud: Sutton, 2006), 173.

depended on the place and method of coaling, but these can be generally divided into two distinct groups, the labour of the ship, and the labour of local populations. The chapter examines these distinct groups during coaling, showing how the identity and views of sailors shaped their impressions of the processes – whether of the work they were required to do or of the labour force employed to heave the coal in their place.

The heavy, unrelenting work, as well as the filth of the coal dust, meant that coaling a ship was the least popular job the sailors did, yet naval discipline ensured that the process was done in a swift and organised way. Competition and fancy dress, as well as the involvement of the whole crew in coaling, acted as coping mechanisms for sailors, and the promise of shore leave and alcohol were enough to keep rates high and discipline intact.

When local heavers were employed in coaling, they often attracted the attention of sailors who considered differences in practices, discipline, and capacity of other people, inevitably seen through the racial lens of high imperialism. Responses to coaling practices were heavily influenced by the sailors' ideas of naval discipline and organisation, and local coaling labour was accordingly judged by these perceptions of efficiency and hard work. As a result, coal heavers were rarely seen as individuals but were largely reduced to cogs in a huge coaling machine. Indeed, despite the unique nature of the activities and interaction at coaling stations, sailors' ideas about local labour, and in particular race, reflected those held commonly by Britons in the late nineteenth and early twentieth centuries.

Finally, the chapter assesses the ever-present danger which existed during coaling. With a focus on speed and efficiency eclipsing any concerns about safety, accidents during coaling were unsurprising. In fact, these are regular occurrences, repeatedly mentioned in logs and other accounts of naval life. As coal was loaded in two hundredweight bags (112 lb), such accidents were often serious, involving broken bones and, all too frequently, death. That accidents involving local heavers are completely absent from records is perhaps

most revealing of the place of these labourers – as a part of a coaling system which could be easily replaced when used up or broken.

Systems of Coaling

The primary purpose of naval coaling stations was, of course, the storage and provision of coal. This part of the chapter will therefore analyse the process of coaling, including the storage, methods, and labour involved. The method of storing coal was important to ensure it reached ships in optimum condition. Despite this, it often remained open to the weather in many coaling stations, whether on dockside or in hulks stationed in the harbour, although coal was in general no longer stored loose on beaches by the 1880s (see Figure 5.1). Old warships were often used as hulks, utilising otherwise obsolete vessels. Leaving coal on the dockside was undesirable, and thus concerns about the degradation of uncovered coal were aired in Parliament. However, building extensive sheds was expensive and, despite discussion at Westminster, large stacks of coal continued to be stored in the open. Storage facilities therefore appear to have only been built in larger stations, or when other improvements were being made, such as at the new dockyard at Simon's Town in the early twentieth century.²

There were three methods of coaling naval ships, coaling from a jetty, coaling from lighters, and coaling from a collier, each of which are described in detail below. Next, the process of washing down the ship is described, a task for the ship's company whichever method was used. Finally, the section analyses the failure of the Royal Navy to develop a method of coaling at sea.

² Navy Estimates 1899–1900, House of Commons Debate, 13 March 1899, *Hansard*, vol. 68 cols 573–641; W.H. Rice, *Simon's Town Dockyard: The First 100 Years* (Cape Town: Simon's Town Historical Society, 2010), 7.



Figure 5.1: Simon's Town coaling station c.1900. Note the coal hulks in the harbour, and the piles of uncovered coal on shore. Courtesy of Simon's Town Historical Society.

Coaling From a Jetty

Coaling from a jetty was generally limited to large stations on trade routes or bases of supply, where significant stacks of coal were maintained and specialist wharves and jetties had been installed (see Figure 5.2). By the late nineteenth century, as a result of the growing size of battleships, this method was largely reserved for cruisers and independent vessels, rather than fleet warships.³ Although techniques could vary from station to station, coal was generally carried on board in baskets from neighbouring stacks, which required considerable shore labour.⁴ These heavers would begin by filling the coal sacks, followed by rigging the ships in one of two arrangements. If coal was simply to be carried on board, planks were placed between the ship and shore. If this was not possible, stages were rigged and baskets passed up. Although techniques varied between stations, this way of coaling

³ Some stations, such as Yokohama, did not allow large warships beyond the breakwater of the harbour.

⁴ 'Remarks on organisation and coaling (1900) – Capt. E.E. Bradford', NMM, BRD/29.

tended to be more efficient than from lighters and especially colliers.⁵ This speed of transference could be impeded, however, if shore labour was short, or deemed incompetent. In Sydney, for example, the workers of the Union Company left coal in sacks on the wharf, leaving the crew of the *Encounter* to carry 135lbs bags 200 yards across springy planks with inclines. Remarkably, the crew still averaged around 60 tons an hour, but this was significantly lower than normal rates.⁶

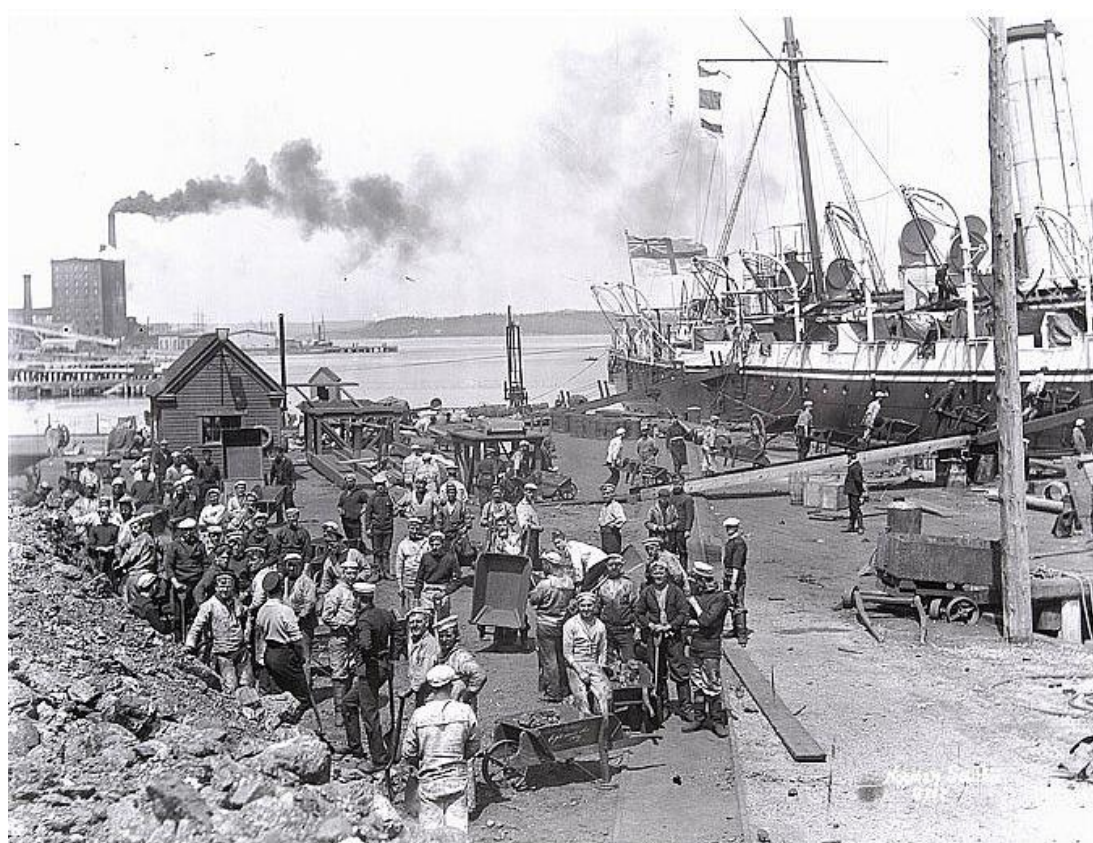


Figure 5.2: Coaling H.M.S. *Charybdis* at from a jetty at H.M. Dockyard, Halifax c.1901–1902. Nova Scotia Archives, Notman Studio NSARM, accession no. 1983-310 8717.

At the beginning of the twentieth century, it became more common to use cranes at the larger Mediterranean and British naval stations. Some of the early cranes installed on quaysides actually did little in terms of the speed of coaling, and could only load five or six

⁵ 'Remarks on organisation and coaling (1900) – Capt. E.E. Bradford', NMM, BRD/29; 'Portland coaling depot 1903', TNA, ADM 1/7675.

⁶ H.M. Fowler, *The Log of H.M.S. Encounter, Australian Station, 1908-10* (London: Westminster Press, 1910), 104.

bags at a time, although they did save back-breaking labour.⁷ The machinery installed at some larger stations in the last decade of the nineteenth century, such as at Portsmouth and Portland, included more advanced hydraulic cranes and hoists for receiving and discharging coal. Although each hoist could reportedly discharge at 500 tons per hour, a rate around double what could be achieved with manual labour, only cruisers could coal alongside. Battleships therefore still had to be coaled by lighter, although the bags were transferred from the dockside by cranes.⁸ At smaller stations such as Crete and Alexandria, and in much of the stations further afield, loading by baskets remained as the only method of coaling from a jetty.⁹

Coaling from Lighters

An equally common way to coal was from a lighter, which was especially used where a station did not have the facilities to coal a ship directly from the shore. In general, a lighter would come alongside a warship and be secured, usually the night before coaling, thereby giving as many daylight hours as possible to the task. In the morning, the coal would be transported, either passed by hand, or by using the ships winches, from the lighter to the deck. From there, it was deposited in the ships bunkers (see Figure 5.3).¹⁰

⁷ David G. Lance, 'Interview with Arthur Ernest Lilley', 1976, Imperial War Museum, 750.

⁸ 'A Coaling Station at Portsmouth', *The Times*, 27 March, 1893.

⁹ David G. Lance, 'Interview with James Anthony Maloney', 1975, Imperial War Museum, 663.

¹⁰ 'Remarks on organisation and coaling (1900) – Capt. E.E. Bradford', NMM, BRD/29.



Figure 5.3: Coaling the H.M.C.S. *Niobe* from a lighter or barge alongside c.1910–1914. George Metcalf Archival Collection, Canadian War Museum, 20030174-011.

In the 1870s, this coaling technique was less standardised and methods less perfected, and ‘it was frequently the deuces own job getting the coal out on account of the ship rolling like an empty tub and threatening either to fall on top of you or suck you under at every heave’.¹¹ From the 1880s onwards, however, the coal, or less often patent fuel, brought out by the lighter was already in bags, allowing a higher rate of transference.¹² This more uniform use of coal in bags, along with operational experience, went some way to alleviate earlier problems, and in time coaling from lighters became so efficient that some station records for the rate of coaling were broken using this method.¹³ Even so, although this was done regularly and in the calmness of a harbour, on rare occasions rough seas

¹¹ Sam Noble, *Tween Decks in the Seventies: An Autobiography* (London: Sampson Low, Marston and Company, 1925), 188.

¹² H. Breaks, *The Log of H.M.S. Bonaventure, Pacific and China Stations, 1903-1906* (London: Westminster Press, 1906), 83; Albert Newton, *The Commission of H.M.S. Grafton, Pacific Station, 1902-1905* (London: Westminster Press, 1905), 204.

¹³ D.E. Whiteley and C. Davis, *The Commission of H.M.S. Bulwark, Mediterranean Station, 1902-1905* (London: Westminster Press, 1905), 123.

overnight could detach lighters, which could then suffer damage or even sink with coal aboard.¹⁴

Coaling from a Collier

The last method, coaling using a collier, was used extensively, especially when large fleets were at a station together. As it prominently involved the ship's crew, it is of this method that most records and descriptions remain. Coaling was exclusively performed by a ship's company, and to be efficient, organisation was crucial. A division of responsibilities was usually done at the beginning of a commission, and each man kept his role throughout. Even so, it still took time for every man to know his duties and perform them competently. In the earlier part of the period, coal was loaded by one or several simple pulley systems known as whips, but after 1892 the newly invented Temperley Transporter was seen as a much superior option (see Figure 5.4).¹⁵ Described as 'a sort of overhead trapeze for running the coal from the collier to the ship', this machinery allowed the swift transference of coal, but its use was not without difficulty.¹⁶ Some ships 'could not get along at all with the collier', for example, and this could cause serious delays.¹⁷ Moreover, the Temperley was far from infallible and regularly broke down, and 'considerable time [was] lost in unshipping cross-beams and shifting gear'.¹⁸ Even with these delays, however, coaling averages using the machinery were often impressive, if not quite as high as the other methods.

¹⁴ S.E. Dunslow and R.J. Jones, *The Commission of H.M.S. Eclipse, China Station, 1901-1904* (London: Westminster Press, 1904), 106.

¹⁵ 'Remarks on organisation and coaling (1900) – Capt. E.E. Bradford', NMM, BRD/29.

¹⁶ J.R.M.A. Brown, *The Log of H.M.S. Repulse, 1902-1904, Mediterranean Station* (London: Westminster Press, 1904), 126.

¹⁷ Charles Gibbs, *The Cruise of H.M.S. Grafton. A Record of Her Commission on the China Station, April 1896 - September 1899* (London: Gale & Polden, 1900), 84.

¹⁸ A.H. Tyler, *The Commission of H.M.S. Lancaster, Mediterranean Station, 1904-1906* (London: Westminster Press, 1906).



Figure 5.4: A steam-coaling barge fitted with four Temperley Transporters c.1900. Swan Hunter Collection, Tyne and Wear Archives.

Before coaling could commence, the bags, shovels, strops, and other coaling equipment, which had been laid out on upper deck beforehand, were thrown into the secured collier, and all unnecessary work aboard ceased.¹⁹ Simultaneously, the stokers connected the chutes which would convey the coal from the deck to the bunker.²⁰ The process of coaling then began with the call 'Clear lower deck! Hands fall in for coaling ship!' After this, everything on deck was covered, newspaper was used to plaster over crevices, and hawsers (mooring ropes) made tight by the foretop men.²¹ Several of the sailors would then board the collier to begin the process of coaling. Once in the collier the sailors formed four or five groups of eight men: two for holding bags and slinging, the rest for shovelling the coal into the sacks, which held around two hundredweights each (see Figure 5.5).²² The collier's steam winches, colloquially known as donkey engines, would then whip up the first hoists of coal, holding ten bags; the coal dust soon turning everything, and everyone, black. The sailors would continue to shovel coal into empty bags, while also dodging coal falling from those already hoisted. One sailor recalled that 'to look down into the holds from the

¹⁹ K. Maclean, P. Macdonald, and Lionel Yexley, *The Log of H.M.S. Caesar, 1900-1903. Mediterranean Station* (London: Westminster Press, 1903), 9-15.

²⁰ Whiteley and Davis, *The Commission of H.M.S. Bulwark*, 3.

²¹ Maclean, Macdonald, and Yexley, *The Log of H.M.S. Caesar*, 9-15.

²² 'Remarks on organisation and coaling (1900) – Capt. E.E. Bradford', NMM, BRD/29.

deck above was like looking into a little inferno'. The dust was so thick that the collier held 'just black toiling beings, with red eyes and lips showing out in bold relief'.²³



Figure 5.5: Officers and ratings prepare coal sacks to be hoisted aboard, unknown date. Portsmouth Historic Dockyard: <http://www.flickr.com/photos/historicdockyard/5811618294/>.

On the deck, the crew would jump onto the hoisted coal sacks, release their straps, and then load them onto trolleys, which marines would then take to the chute. Here they were directed by an engineer sub-lieutenant who was responsible for seeing that each chute got equal amounts of coal (see Figure 5.6).²⁴ Stokers, stripped to the waist, would wait in their bunker for its chute to begin to be used.²⁵ They would then have the unenviable task of moving the coal to fill the bunker completely, clearing the coal deposited down the chute into the bunker, just in time for another load to arrive. Down the chute with the coal came a cloud of dust and, with nowhere to escape, the stokers

²³ W. Wheeler, *The Commission of H.M.S. Pandora, Mediterranean Station, 1901-1904* (London: Westminster Press, 1904), 123-126.

²⁴ McKee, *Sober Men and True*, 120-122; Maclean, Macdonald, and Yexley, *The Log of H.M.S. Caesar*, 9-15.

²⁵ Maclean, Macdonald, and Yexley, *The Log of H.M.S. Caesar*, 9-15.

increasingly found it impossible to see, had their lungs filled with black dust, and struggled to keep their lamps alight.²⁶ The empty bags were then returned to the collier, where the process could start again. With practice, this whole process could be done seamlessly, the ship's company acting as a great machine to achieve high efficiency.²⁷

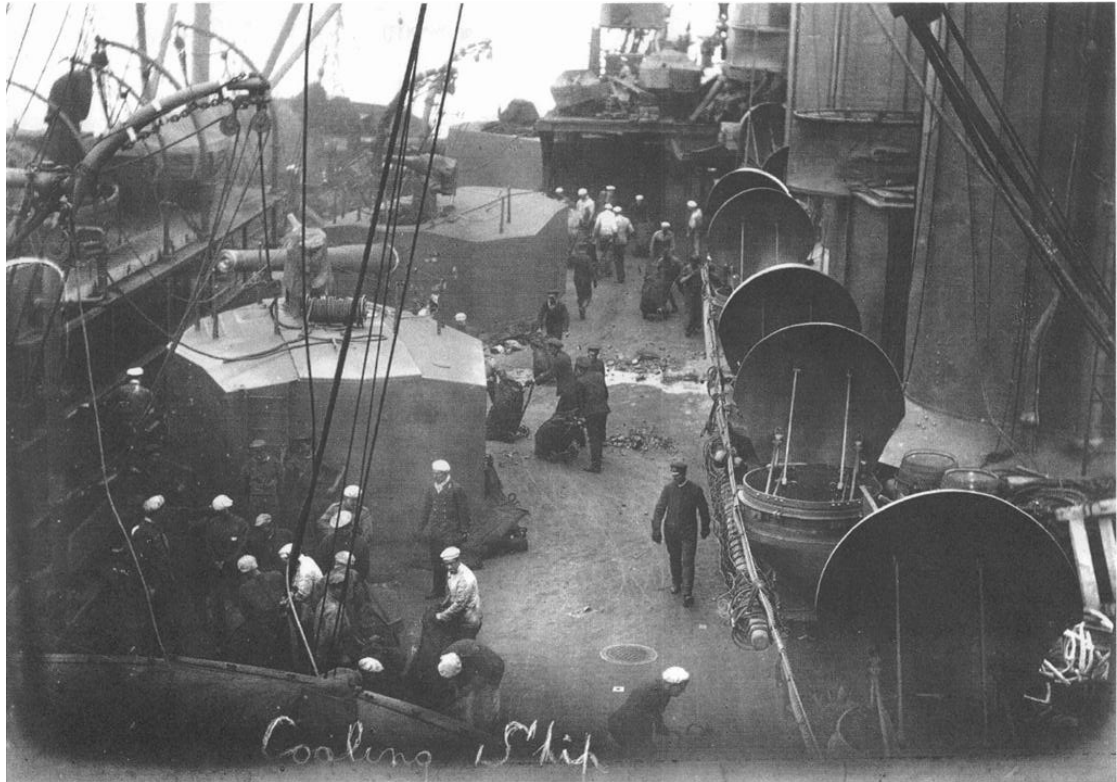


Figure 5.6: Coaling H.M.S. *Natal* c.1915. Note the marines pushing trolleys full of coal to the bunkers. NMM, C7137/R.

Breaks for food depended on when coaling commenced and how much coal had to be loaded. Generally there would be a race to breakfast, where everything – the men, the food and the deck – were black from coal dust.²⁸ After a short time, ‘commence’ would sound again, and the men would be back to their stations, with the encouragement of the senior officers.²⁹ Other meals tended to be for around half an hour, often of bully beef or

²⁶ McKee, *Sober Men and True*, 120-122.

²⁷ Ibid.

²⁸ David G. Lance, ‘Interview with James George Cox’, 1976, Imperial War Museum, 728.

²⁹ Maclean, Macdonald, and Yexley, *The Log of H.M.S. Caesar*, 9-15.

salted pork.³⁰ Liquid refreshment would either be oatmeal water or lime juice depending on what climate the ship was currently in.³¹

Once the requisite amount of coal had been taken in, a bugle would sound 'cease fire', after which the whips would be unrigged, the men, shovels, and other tools returned to the ship, and the collier shoved off.³² The collier would often then go on to coal several more ships: the naval collier *Mercedes*, while on the China Station, coaled the *Glory*, *Cressy*, *Blenheim*, *Amphitrite*, *Argonaut*, *Goliath*, *Eclipse*, *Talbot*, *Algerine*, and *Bramble* consecutively.³³ For the smaller destroyers, the coaling routine was similar but, with only four or five men to take on the coal, the amounts were smaller – around 50 tons – and coaling was done every three to four days.³⁴ It is notable that ships commissioned in the early twentieth century were designed with ease of coaling in mind. The *Dreadnought*, for instance, was easy to prepare for coaling: it was merely a case of taking the guardrails down before the coal bags could be brought up.³⁵ Similarly, the *Encounter* was better designed for sealing the decks when coaling, to the extent that 'a lower deck man can sit in his mess and eat his scran without the fear of coal-dust'.³⁶

Washing down

Once coaling was complete, the washing down of the ship began. Whether a ship's company had coaled the ship themselves or not, the exhausted men would rig the sea-water hoses and begin what was colloquially known as the 'water carnival' (see Figure

³⁰ McKee, *Sober Men and True*, 120-122.

³¹ Lance, 'Interview with James George Cox'.

³² Wheeler, *The Commission of H.M.S. Pandora*, 123-126.

³³ A.E. Butterworth, *The Commission of H.M.S. Glory, Flag Ship of Commander-in-Chief, China Station, 1900-1904* (London: Westminster Press, 1904), 72.

³⁴ Lance, 'Interview with James George Cox'.

³⁵ David G. Lance, 'Interview with Stanley Munday', 1973, Imperial War Museum, 9048.

³⁶ Fowler, *The Log of H.M.S. Encounter*, 12.

5.7).³⁷ Stringent standards of cleanliness aboard a naval vessel, combined with coal dust's ability to penetrate every crevice, meant that for some sailors the 'painful necessity of cleaning down' deck was 'the worst part of the whole business'.³⁸ There was some reward for completing coaling and washing down, though, and on most ships a draught of beer, or tot of rum, was customary.³⁹ Furthermore, unless there was an urgent need for the ship to move on imminently, leave was generally given to the ship's company.⁴⁰ Before leave could be taken, however, a sailor needed to wash. If the ship had the facilities, the crew would be given extra bathwater. If there were no baths, sailors would wash from a tub in the mess, which had to be shared with a dozen others. At some ports, such as Portsmouth, sailors were able to go ashore to bathe.⁴¹ Such was the filth accrued on their bodies that, as one sailor described, the effects of scrubbing and yellow soap 'convert our complexions into a likeness of salt beef. As red as beets, we are inspected, bundle over the side, and reach our pints after well earning them by "coaling ship"'.⁴²

³⁷ Wheeler, *The Commission of H.M.S. Pandora*, 123-126; H. Callow, *The Commission of H.M.S. Royal Arthur, Flag Ship, Australian Station. 1901-1904* (London: Westminster Press, 1904), 11.

³⁸ Breaks, *The Log of H.M.S. Bonaventure*, 3; Whiteley and Davis, *The Commission of H.M.S. Bulwark*, 21-22.

³⁹ Dunslow and Jones, *The Commission of H.M.S. Eclipse*, 37; Maclean, Macdonald, and Yexley, *The Log of H.M.S. Caesar*, 9-15.

⁴⁰ W.H. Watts, *The Commission of H.M.S. Retribution, North American and West Indies Station, 1902-1904* (London: Westminster Press, 1904), 131

⁴¹ Lance, 'Interview with Stanley Munday'; Lance, 'Interview with Arthur Ernest Lilley'.

⁴² Maclean, Macdonald, and Yexley, *The Log of H.M.S. Caesar*, 9-15.



Figure 5.7: Scrubbing the decks of H.M.S. *Goliath* after coaling, c.1900–1915. Photo courtesy of Dave Martin.

Coaling at Sea

In the late nineteenth and early twentieth century, a fourth method of coaling was discussed seriously: coaling at sea.⁴³ It was hoped that this method of coaling would function in a similar way to that from a collier in harbour, but with the increased convenience that it could be accomplished while a fleet was moving or blockading on the open sea.

Stores had often been transferred at sea in the past, and coal was no exception. But these processes were slow and limited, and could not hope to satisfy a modern

⁴³ An excellent survey of these attempts and their failings can be found in Warwick Brown, 'When Dreams Confront Reality: Replenishment at Sea in the Era of Coal', *International Journal of Naval History*, (2010), <http://www.ijnhonline.org/2010/12/01/when-dreams-confront-reality-replenishment-at-sea-in-the-era-of-coal/>.

warship's needs, especially after 1880. To solve this issue, over 60 systems for the coaling of the fleet at sea were submitted to the Admiralty between 1888 and 1905, and several were extensively tested. Despite this, by 1915, no mechanism for coaling at sea had yet been adopted, and British warships on manoeuvres still had to leave the fleet and coal in sheltered harbours.⁴⁴ Indeed, there seems to be little evidence 'that any of the belligerents coaled at sea during the First World War'.⁴⁵ Warwick Brown has argued that this was because 'no navy considered that the capacity of any of the many systems for coaling at sea on offer before the First World War showed sufficient promise to warrant allocating them a significant portion of their precious budgets or reorganising their logistical agreements to suit the system's requirements'.⁴⁶ He also goes on to point out that the systems simply did not develop fast enough to deal with the ever increasing demands of modern warships. A further explanation can be found in the words of W.H. Whiting, the Assistant Director of Naval Construction, who argued that 'such value as it possesses is a minimum in the case of a nation which has a great preponderance in coaling ports and in ships, and whose ships are generally larger and can carry a larger coal supply than those ships of the same class belonging to foreign powers'.⁴⁷ With this great advantage over its rivals, it was acknowledged that the ability to the Royal Navy to coal at sea was not as central to the action of the fleet in war as had been made out earlier in the period.

⁴⁴ *NSW Northern Star*, 24 February 1915.

⁴⁵ Brown, 'When Dreams Confront Reality'.

⁴⁶ *Ibid.*

⁴⁷ 'Metcalfe's System of Coaling at Sea', TNA, ADM 1/8004.

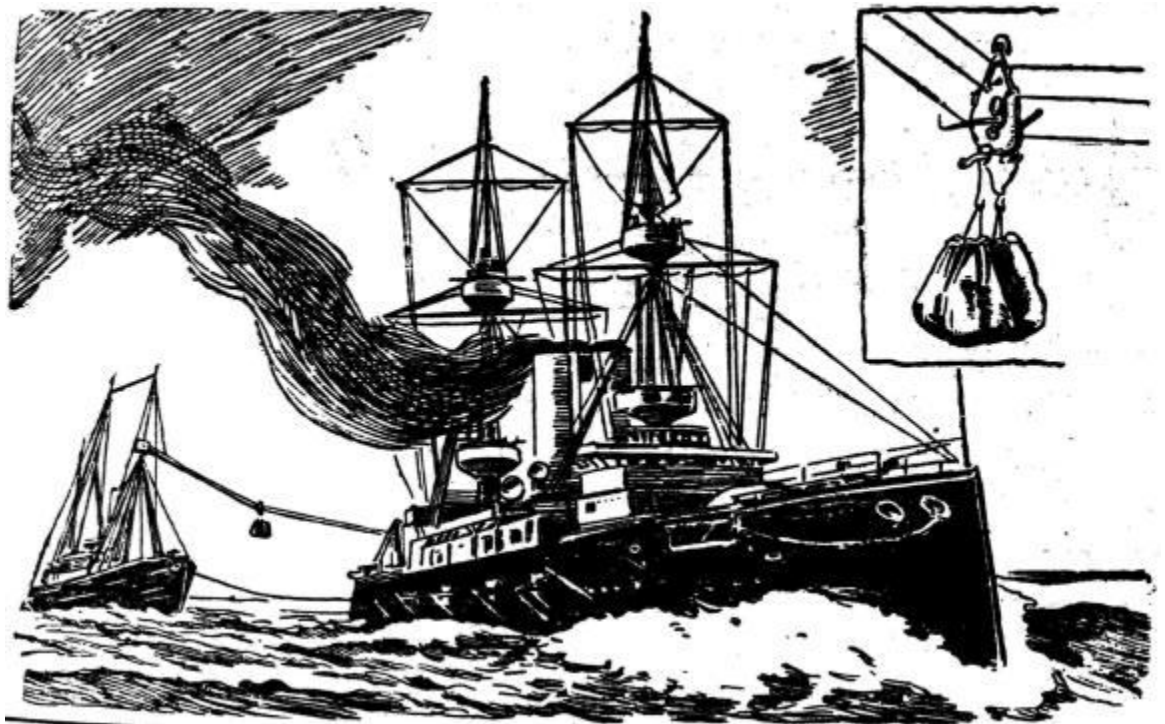


Figure 5.8: Great hope was held for coaling at sea, illustrated here, but it was to no avail. 'New Method of Coaling Warships at Sea', *Dundee Courier and Argus*, 14 May, 1900.

Naval Labour

In addition to coaling from a collier, which was always performed by naval men, there were several reasons why a ship's company might be called to coal their own vessel when using other methods. Occasionally there was simply not enough local labour to coal all the ships in harbour, and at smaller, purely naval sites, this was often the case. At Esquimalt, for example, although indigenous labour was sometimes used, it was usually the ship's crew that coaled from the lighters.⁴⁸ Temporary labour shortages also occasionally occurred at large stations, caused by strikes, or during cultural and religious festivals such as Christmas, and Chinese New Year.⁴⁹

⁴⁸ R. Knight, *Indians at Work: An Informal History of Native Indian Labour in British Columbia, 1858-1930* (Vancouver: New Star Books, 1978).

⁴⁹ H. Furneaux, *The Log of H.M.S. Diana, Mediterranean Station, 1904-1906* (London: Westminster Press, 1907), 50; E.G. Anning, F.J. Bentley, and Lionel Yexley, *The Log of H.M.S. Argonaut, 1900-1904. China Station* (London: Westminster Press, 1904), 76.

Although some stations that used local labour continued to do so throughout and beyond the period 1870–1914, there is a noticeable decline over time in its use in coaling. The log of the *Bedford*, which was on the China Station from 1907 to 1909, reports that it was ‘quite a luxury’ to ‘be stood off’ for coaling. Similarly, the *Implacable*, during its 1901–1904 commission, reported that ‘one of the advantages of laying at Malta – native labour is employed in coaling ship’, suggesting this was a rarity.⁵⁰ At some stations this was because the individual circumstances changed. For example, in order to reduce costs, Malta began to rely more heavily on crew labour, and to a much lesser extent mechanisation, than the local heavers who had numbered around 200 at the turn of the century.⁵¹

The decreasing use of local labour was more generally linked to the greater use of colliers for coaling, however, as a growth in ship size and numbers after 1889 meant it was not always feasible to coal at a jetty or by lighter. This situation was exacerbated by the amount of coal used by each ship: on average a battleship would coal every seven to ten days, and even the comparatively economical *Dreadnought* consumed on average 300 tons a day, and carried 2900 tons of coal.⁵² This represented a huge change in ships’ capacity for coal: H.M.S. *Collingwood*, launched in 1880, carried just 900 tons.⁵³ The use of colliers eased these issues, as they allowed multiple large warships to coal, under their own labour, in the relative calmness of a harbour. This was an advantage particularly at stations with large fleets where several ships would need to coal at once.⁵⁴ Furthermore, this allowed the navy to tap into a free labour force, and permitted them to coal in convenient harbours

⁵⁰ A.E. Butterworth, *The Log of H.M.S. Bedford, China Station, 1907-09* (London: Westminster Press, 1909), 44; G.R. Parker, *The Commission of H.M.S. Implacable, Mediterranean Station, 1901-1904* (London: Westminster Press, 1904), 7.

⁵¹ Watts, *The Commission of H.M.S. Retribution*, 17-19; Joseph Bonnici and Michael Cassar, *The Malta Grand Harbour and Its Dockyard* (Malta: Malta Maritime Authority, 1994), 360-363; Anning, Bentley, and Yexley, *The Log of H.M.S. Argonaut*, 76.

⁵² Wragg, *Royal Navy Handbook*, 15.

⁵³ ‘Ships’, in Hugh Chisholm and Franklin Hooper (eds), *Encyclopædia Britannica* (Cambridge: Cambridge University Press, 1922).

⁵⁴ Masker, ‘The China Station in Other Days’, 522-533.

while on manoeuvres far from coal stacks. The process of coaling was also seen as easier from colliers; the methods being fairly uniform for each class of ship.⁵⁵ Moreover, there was little difficulty in securing colliers: 'the Royal Navy were able charter private colliers as and when required without difficulty in peacetime and considered that the large, privately owned merchant collier fleet would be able to cater for any additional demands in wartime'.⁵⁶ While these advantages were considerable, the rates of transference achieved coaling from a collier did not often exceed 100 tons per hour, considerably lower than the highest rates seen by the other methods.⁵⁷

The largest disadvantage was to the ship's company though, as when using a collier they were now wholly responsible for 'the unpleasant task of coaling'.⁵⁸ There seems to have been near universal loathing for coaling, especially from a collier.⁵⁹ Getting in the 'black diamonds' was widely regarded as the most dangerous, most hated, and most filthy task: Joiner First-class George Clarkson suggested that 'a shadow would come over the ship as soon as you heard you were coaling'.⁶⁰ The detestation often made sailors look backwards 'I wish I could get hold of that man who first found coal', or forwards 'oh for oil fuel!'⁶¹ Consequently coaling was a stressful business; the combination of exhaustion, discomfort, and irritation could put the ship's company on edge, and tensions could easily spill over.⁶² The only thing, it appears, that could make the task even less enjoyable was inclement weather. Rain in particular made the experience uncomfortable.⁶³ The *Encounter* suffered such a fate in New Zealand with unceasing rain during coaling, 'which drenched all

⁵⁵ 'Remarks on organisation and coaling (1900) – Capt. E.E. Bradford', NMM, BRD/29; Lance, 'Interview with Arthur Ernest Lilley'.

⁵⁶ Brown, 'When Dreams Confront Reality'.

⁵⁷ 'Portland coaling depot 1903', TNA, ADM 1/7675.

⁵⁸ Gibbs, *The Cruise of H.M.S. Grafton*, 3.

⁵⁹ Lance, 'Interview with James George Cox'.

⁶⁰ Masker, 'The China Station in Other Days', 522-533; McKee, *Sober Men and True*, 119-122.

⁶¹ Parker, *The Commission of H.M.S. Implacable*, 97; McKee, *Sober Men and True*, 120.

⁶² Noble, *'Tween Decks in the Seventies*, 188.

⁶³ Brown, *The Log of H.M.S. Repulse*, 38.

hands to the skin, making coal-ship a very unpleasant and slow job'.⁶⁴ Coaling was also especially disagreeable in warm climates like Gibraltar, where: 'for the first four or five hours all was well, but when the sun got strong and our feet got sore with running up and down the planks things altered, and this did not make our job any easier'.⁶⁵ Similarly, uncomfortable heat was witnessed at Sierra Leone and Yokohama.⁶⁶ High temperatures could also be dangerous, especially if the commander was particularly ruthless. The diary of Able Seaman Percy Rooke, serving on H.M.S. *Canopus*, recalls coaling at Abrolhus Rocks near Brazil:

This has been our hardest coaling, as we were working in the sun and the temperature was ninety degrees in the shade. Quite a lot of men collapsed during the day, and our captain expressed his gratitude by telling us that the coal must damn well come in faster. If not, he would walk around himself and we knew what that that meant. Yes, we all knew what that meant: he would get his suit dirty and could not drink so much whiskey.⁶⁷

This episode relates to the First World War during the pursuit of von Spee in 1914, however, when it was particularly important to complete coaling quickly. In peace, few captains were this tyrannical however, and this entry perhaps shows the extreme toll that coaling took on a sailor. Indeed, they often used a diary to vent their anger, and thus a detested officer was more likely to be documented than an admired one.⁶⁸

In fact, coaling was one of the only levelling times on a ship. Unlike some foreign navies, both British officers and men were involved in coaling, and almost all members of

⁶⁴ Fowler, *The Log of H.M.S. Encounter*, 77.

⁶⁵ Parker, *The Commission of H.M.S. Implacable*, 103.

⁶⁶ Journal kept by Edward Charrington, 1894-1898, Royal Naval Museum, Manuscript Collection, 1999/51/5; Gibbs, *The Cruise of H.M.S. Grafton*, 57.

⁶⁷ McKee, *Sober Men and True*, 50.

⁶⁸ *Ibid.*, 59.

the crew had a role to play – it was usual for even the chaplain and cooks to be involved.⁶⁹ Only essential work continued during coaling, and specific jobs such as taking back the empty sacks were found for those, like telegraphists, who needed to protect their hands.⁷⁰ Other members of the crew performed service roles: ‘perhaps the most welcome figure was the ship’s steward who presided over a grog-tub filled with lime juice’.⁷¹ Furthermore, the Marine band played lively tunes throughout the coaling to keep spirits high (see Figure 5.9).⁷²



Figure 5.9: The Marine band of H.M.S. *Prince George* playing during coaling c.1900. Courtesy of E. Mason.

Even the commander was (nominally) involved, ‘immaculate under cap-cover and sea boots’, circulating with a rating holding a blackboard with a picture of a pint of beer on it, proclaiming ‘the sooner you get in, the sooner you can get ashore and have one of

⁶⁹ Wragg, *Royal Navy Handbook*, 173; Wheeler, *The Commission of H.M.S. Pandora*, 123-126; Brown, *The Log of H.M.S. Repulse*, 107.

⁷⁰ McKee, *Sober Men and True*, 120-122.

⁷¹ Wheeler, *The Commission of H.M.S. Pandora*, 123-126.

⁷² McKee, *Sober Men and True*, 120-122.

these'.⁷³ All naval hierarchy and deference were relaxed during coaling, all being equals under the coal dust, and even swearing was permitted.⁷⁴ This sense of equality was furthered by 'coaling dress'. The log of the *Pandora* notes:

It is very amusing to observe the number of grotesque and ludicrous figures that flit about on coal-ship days. Any old clothing suffices to coal in, and as a rule the bluejacket seems to revel in dressing himself as oddly and outrageously as he possibly can. All sorts of characters are represented – from a Prime Minister to a shoeblack.⁷⁵

The log of H.M.S. *Caesar* even records one man dressed in a sombrero and cricketing gear.⁷⁶ This practice appears to have been universal, for the log of the *Bulwark* also notes that 'hands were piped to dress in coaling suits, which presented quite a fancy dress display' (see Figure 5.10). The same log also notes that 'everyone was looking pretty black, making it quite laughable, for it is rather hard to distinguish one's own messmates,' suggesting that fancy dress and camaraderie were key coping mechanisms while coaling.⁷⁷

⁷³ Maclean, Macdonald, and Yexley, *The Log of H.M.S. Caesar*, 9-15; McKee, *Sober Men and True*, 120-122.

⁷⁴ McKee, *Sober Men and True*, 120-122.

⁷⁵ Wheeler, *The Commission of H.M.S. Pandora*, 123-126.

⁷⁶ Maclean, Macdonald, and Yexley, *The Log of H.M.S. Caesar*, 9-15.

⁷⁷ Whiteley and Davis, *The Commission of H.M.S. Bulwark*, 15-16.



Figure 5.10: Portrait of John 'Dinkum' Minogue, the 'ship's clown' of H.M.A.S. *Melbourne*, wearing fancy dress during coaling, 1915. Courtesy of Australian War Memorial: <http://cas.awm.gov.au/photograph/EN0132>.

Another mechanism for coping with the monotony, hard work, and discomfort of coaling was competition. This was unsurprisingly encouraged by the navy, as the ability to achieve high rates of coaling was key to swift mobilisation. As the log of the *Pandora* explains:

Coaling in the navy is, of course, one of the most important evolutions we do; because the quicker a ship can fill her bunkers in time of war, the quicker she can put to sea again. Owing to this, the competition is very great between the several classes of ships to make or break records.⁷⁸

⁷⁸ Wheeler, *The Commission of H.M.S. Pandora*, 123-126.

Flags on the yardarm were used to by the ship's company to work out the rate needed to break the current record, and the doctor would write the record onto a blackboard.⁷⁹ By introducing an element of competition into coaling, commanders were able to increase coaling rates throughout the period. Coaling records were a very serious business, and rates were noted with great reverence in ships' logs. The competition appears to have been most fierce, and consequently the rates were highest, on the larger and strategically more important Mediterranean and China Stations, where they could frequently top 200 tons per hour. The importance attached to the breaking of records can be seen by the fact that when H.M.S. *Barham* broke the Mediterranean fleet coaling record, one of the ship's company, John Gilderson, sent a postcard to his mother informing her of the news.⁸⁰ Photographs of record breaking crews were also included in logs (see Figure 5.11). Enthusiasm for records was not just limited to one's own ship either, the log of the *Glory* noting that the '*Ocean* coaled ship, doing very well', and also that the '*Vengeance* coaled ship, making a very decent show of it'.⁸¹ In particular, the logs of ships abroad give a sense of pride in the physical effort of achieving high rates of coaling. The log of the *Good Hope* suggests that the ship's hands worked 'like the veritable demons who are credited with forging the links of fate'. It even goes as far to suggest that despite coaling being 'monotonous [and] wearisome' the element of competition created 'cheerful hours of coaling'.⁸²

Although the highest rates of coaling were to be found on the largest stations, it is still curious that an enthusiasm for competition appears to be largely absent on the Australia Station. Here, rates are less regularly recorded and, where they are, coaling is

⁷⁹ Maclean, Macdonald, and Yexley, *The Log of H.M.S. Caesar*, 9-15.

⁸⁰ Joseph Bonnici and Michael Cassar, *A Century of the Royal Navy at Malta* (Malta: BDL, 1999), 26-32.

⁸¹ Butterworth, *The Commission of H.M.S. Glory*, 130.

⁸² Robert L. Moore, *Commission and Travels of H.M.S. Good Hope* (Cape Town: W.A. Richards & Sons, 1903), 41.

slow, less of the crew is involved, and smaller amounts of coal are taken aboard.⁸³ The records at the end of the period in question on the station remained under 130 tons per hour, significantly lower than those on larger stations.⁸⁴ Perhaps this reflects the Australia Station's relative isolation from danger, its small fleet and the more laid back nature of station life.



Figure 5.11: The record breaking crew of H.M.S. *Caesar*, who coaled at over 200 tons an hour from a collier. From Maclean, Macdonald, and Yexley, *The Log of H.M.S. Caesar, 1900–1903*.

Non-naval labour

At stations where coaling was completed from a jetty or by lighter the navy often employed specialised local workers to carry out the work. These heavers would either complete coaling alone (although the ship's stokers would often be required to manage the bunkers),

⁸³ Callow, *The Commission of H.M.S. Royal Arthur*.

⁸⁴ Fowler, *The Log of H.M.S. Encounter*, 44, 86.

or work with the ship's crews in order to get the coal in. Where it is recorded that local workers and crews coaled in tandem, the share of work undertaken by each could vary enormously. While it could mean that local heavers would deliver the coal aboard and the ship's company would stow the coal away, it could also mean that a few members of the crew were responsible merely for recording how much coal had been taken aboard.

Although the emotional and physical experience of sailors during coaling is well recorded, we have no such record for that of local workers. It is safe to assume, however, that these labourers had a similar contempt for coaling as sailors, despite naval officers often arguing that their supposed racial characteristics made them ideally suited to the work, especially when carried out in inhospitable heat.⁸⁵ In fact, disdain for coaling was probably even more pronounced, as the work – which was unpleasant and back-breaking in normal conditions – was almost constant. Not only were local heavers were expected to work at day and night, but they often coaled one ship after another.

What remains are the sailors' impressions of local labour. What Valeska Huber suggests of the Suez region was true across the world: 'watching the coal heavers amazed or disgusted many western travellers; they became one of the sights'. It is remarkable how similar and repetitive such observations were, mentioning not only the barges and the methods, but the appearance of the heavers, their chanting, and their work ethic.⁸⁶ As a result of the sailors' views of hard work and discipline, a product of their own naval training, the standards expected of heavers were high, and anything below this was castigated in their records. In general, sailors observed the local labour force as mere parts of the coaling process, almost machine-like. Thus they were not seen as humans, but were judged and identified on the basis of their efficiency and the quality of their work. While the accounts are not always explicitly racist, they are certainly racialised, with the

⁸⁵ Journals of Donovan C. Roe, 1911-1912, NMM, JOD/92/2; Watts, *The Commission of H.M.S. Retribution*, 40; G.H. Gunns, *The Log of H.M.S. Sutlej, Pacific and China Stations, 1904-1906* (London: Westminster Press, 1906), 15.

⁸⁶ Huber, *Channelling Mobilities*, 119-121.

characteristics of the local labour force, both favourable and not, often attributed to their ethnicity. These assessments of coaling labour were, of course, shaped by both the naval and the Victorian and Edwardian lens they were viewed through. These views were then reinforced by the dissemination of these accounts, shaping wider ideas about local populations.

That is not to say that all of which is written about local heavers was negative. In fact, some stations were specifically praised for the efficiency of the local labour. Indeed, the ability to coal for long hours, particularly in harsh climatic conditions, was often remarked upon, even if it was often ascribed to the imagined racial characteristics of the workers. Thus, Singapore was especially noted for being 'one of the smartest coaling places in the world' because of the efficiency of the Chinese 'coolies' employed.⁸⁷ Those employed in coaling would 'come in one gangway and out another, thus keeping up one continual stream'. Particularly impressive was their ability to do this in unbearable heat, and that often when they finished they would straight away coal another ship.⁸⁸ Likewise, Port Said was well known to be the 'acme of coaling ports, as coal can be brought on board ship here much faster than at any port in the world'.⁸⁹ Most British sailors who coaled here recorded their astonishment at the speed and efficiency of coaling, where rates could be in excess of 150 tons per hour.⁹⁰ The log of H.M.S. *Encounter* recalls:

Amidst loud cries of "Allah, Allah," sturdy niggers are carrying small baskets on their heads filled with coal, not walking but running, and as one gaping hole is filled up they are fast filling another. They are only of a small stature, and often many are mere boys; but it seems to make no difference to them, for they appear to never

⁸⁷ J.B. Brodie, A.F. Ray, and Lionel Yexley, *The Log of H.M.S. Goliath, China Station, 1900-1903* (London: Gerrards, 1903), 132.

⁸⁸ Gunns, *The Log of H.M.S. Sutlej*, 54; Gibbs, *The Cruise of H.M.S. Grafton*, 7.

⁸⁹ Anning, Bentley, and Yexley, *The Log of H.M.S. Argonaut*, 9. For an excellent analysis of the coal heavers of the Suez region, see Huber, *Channelling Mobilities*, 116-123.

⁹⁰ Gibbs, *The Cruise of H.M.S. Grafton*, 152.

tire, and seem to be gifted with strength that is not human. If one slackened in his speed a torrent of abuse would come from one of the dusty overseers, often accompanied by a clout on the head. This place is considered the smartest port in the world for coaling, the operation only taking a few hours, whereas a ships' company would be occupied for a whole day.⁹¹

The coal heavers of Perim, another station serving Suez Canal traffic, also impressed British servicemen. The log of H.M.S. *Bedford* records that: 'we had hardly dropped anchor before they were clambering up the ship's side ... everything seemed to be done at the double'. Furthermore, the heavers did not appear to eat but continued to coal for ten hours, in which time they loaded some 950 tons.⁹² Again, particularly impressive was the work rate in such an inhospitable climate and it was noted that these 'ginger haired niggers' were 'a quiet hardworking race', as they coaled the ship stripped to waist and without boots, singing songs as they worked.⁹³ The 'negroes' at Fernando Po passed the coal along in a chain, which ensured it was 'done in no time, and without the least dust or bother'.⁹⁴ Also highly appreciated were Fijians heavers, who 'worked like slaves ... very scantily clothed and took only half an hour for meals'.⁹⁵ Similarly, the labour at St Vincent, Cape Verde, was known for coaling 'in very good time', and were noted for their aquatic skills, diving after coal that had become dislodged from bags, some pieces as big as themselves, then using ropes to haul each other back up.⁹⁶

Particular praise was reserved for stations, particularly Gibraltar and Malta, where the ship's company worked in tandem with local workers. Although it required labour from the ship's company, competition between vessels to achieve ever higher rates of coaling

⁹¹ Fowler, *The Log of H.M.S. Encounter*, 3.

⁹² Butterworth, *The Log of H.M.S. Bedford*, 9.

⁹³ Gunns, *The Log of H.M.S. Sutlej*, 20; Anning, Bentley, and Yexley, *The Log of H.M.S. Argonaut*, 11.

⁹⁴ Noble, *'Tween Decks in the Seventies*, 152.

⁹⁵ Callow, *The Commission of H.M.S. Royal Arthur*, 74.

⁹⁶ Breaks, *The Log of H.M.S. Bonaventure*, 3; Newton, *The Commission of H.M.S. Grafton*, 208.

was fierce, and the help of specialist local labour drove these rates even higher. Thus, at these stations, having local labour to bring coal to the upper deck meant it was a 'great advantage coaling from lighters to coaling from a collier', as coal could be loaded twice as fast.⁹⁷ In fact, so efficient was this system that rates of over 200 tons per hour were regularly recorded, and 292.5 tons per hour became the station record in the early twentieth century. Such was the value of swift coaling, especially in terms of mobilisation, that when this record was broken, the Admiral signalled his congratulations.⁹⁸ The skill of these workers was so highly regarded that were renowned for their speed and balance on the planks while carrying baskets in 'bee like swarms'.⁹⁹



Figure 5.12: Coaling alongside the new mole at Gibraltar. Note the use of 'Rock Scorpions' to carry the bags on board. *Army and Navy Illustrated*, 10 December 1898.

Not all stations with local labour received praise, however. Where labourers did not live up to the high expectations of naval men they were roundly criticised. Sailors were

⁹⁷ Tyler, *The Commission of H.M.S. Lancaster*, 22-23.

⁹⁸ Whiteley and Davis, *The Commission of H.M.S. Bulwark*, 123.

⁹⁹ Bonnici and Cassar, *The Malta Grand Harbour and Its Dockyard*, 360-363; Anning, Bentley, and Yexley, *The Log of H.M.S. Argonaut*, 7.

particularly scathing of what they viewed as laziness and ill-discipline amongst the workers, which was generally attributed to the heavers' race or culture. This was an accusation frequently put to the heavers at Suez. The log of H.M.S. *Renown* recalled that on arrival they were surrounded by

coal laden dhows swarming with natives. After allowing them about half an hour for preliminary jabbering, in which it is hopeless to interfere, we have got them properly made fast, and they are rigging the stages, up which they will pass the coal in small baskets. At last they start as they pass the coal, they break into a weird chant ... The coaling is tedious; 'stand easies' are too much the order of the day with the natives.¹⁰⁰

Similarly, the log of H.M.S. *Sutlej* had little in the way of compliments for those working in Suez, describing their work as 'the worst specimen of coaling ever witnessed. The coolies, with a lazy indifference, absolutely declined to trouble themselves or hurry in any way'.¹⁰¹ Not only were the heavers perceived as slow working, but also, on occasion when they 'got tired of coaling, [they] deliberately dived over the side and swam ashore'.¹⁰² Similarly, heavers in Zanzibar were 'almost as bad as at Suez, and the crew were very disheartened'.¹⁰³ At Wei-Hei-Wei H.M.S. *Alacrity* endured 'a most tedious operation, the coolies being quite the laziest lot I have ever come across'. The journal then recalls that only 260 tons was loaded in 13 hours, and suggested 'comment is needless'. In a later entry, it again suggests slow progress was a result of 'the coolies being a very poor lot'.¹⁰⁴ In Colon, Panama, the heavers were regarded as not being energetic enough, the log of H.M.S. *Retribution* noting that 'the niggers had got in only 30 tons during the day, so we

¹⁰⁰ Charles Mitchell, *The Commission of H.M.S. Renown, 1900-1904, Mediterranean Station* (London: Westminster Press, 1904), 50.

¹⁰¹ Moore, *Commission and Travels of H.M.S. Good Hope*, 40.

¹⁰² Gunns, *The Log of H.M.S. Sutlej*, 15.

¹⁰³ Moore, *Commission and Travels of H.M.S. Good Hope*, 49.

¹⁰⁴ Journal kept by Edward Charrington, 1899-1902, Royal Naval Museum, Manuscript Collection, 1999/51/7.

had to set to and make up the deficiency'.¹⁰⁵ A similar accusation was made towards the coal heavers of Woosung, with suggestions that the 'coolies are not very good and no one seems to care how long they take to put coal on board'.¹⁰⁶ Similarly, Edward Charrington recalls that coaling at St Helena in 1897 was 'very slow work owing to great difficulty in getting anything like a regular supply from the shore'.¹⁰⁷

Criticism was not simply along racial lines, though, and fellow westerners were also bemoaned for their lack of efficiency. H.M.S. *Karrakatta* endured its 'dirtiest and worst coaling' in Western Australia, where the heavers would only get in a few hundred tons before 'they want their Smoke-o'. The log notes, however, that they were still better than colliers in Sydney.¹⁰⁸ The *Royal Arthur* coaled at just 20 tons per hour from lighters there, 'owing to the men on the lighters knocking off every half-an-hour for "spello", "smokeo" and other "excuseo"'.¹⁰⁹ At other stations, the method employed by the heavers was questioned as to its efficiency, often with an inference that such techniques represented evidence of lesser intelligence. When the *Sutlej* coaled at Surabaya, Java, it was noted that the Javanese method of passing 25lbs buckets in a chain was extremely slow, not helped by the workers 'not hurrying themselves in the least and jabbering all the time'.¹¹⁰ At King George's Sound, Albany 'baskets with a capacity for 5 cwt of coal were wheeled along planks from the lighter inboard to the ship, on small trolleys after the English bag system. Each basket was then emptied on to the deck and the coal had to be shovelled up again, which seemed an Irish way of doing a job'.¹¹¹ There was room to improve, however, and the locals at some stations seem to have enhanced their reputations over time. Those

¹⁰⁵ Watts, *The Commission of H.M.S. Retribution*, 163.

¹⁰⁶ Journal kept by Edward Charrington, 1899-1902, Royal Naval Museum, Manuscript Collection, 1999/51/7.

¹⁰⁷ Ibid.

¹⁰⁸ Reginald A. Silk, *The Log of H.M.S. Karrakatta, 1900-1903, Australian Station* (London: Westminster Press, 1904), 80.

¹⁰⁹ Callow, *The Commission of H.M.S. Royal Arthur*, 63.

¹¹⁰ Gunns, *The Log of H.M.S. Sutlej*, 15.

¹¹¹ Callow, *The Commission of H.M.S. Royal Arthur*, 11. The log refers to the station as 'St. George's Sound'.

working in Colombo in the late 1890s were said to 'work very slowly, and, as a consequence, we were all day at it, and the ship, from truck to keel, was one mass of coal dust'.¹¹² By 1907, however, the 'coolies' were said to be 'quickly on the job, though not so lively as our black friends at Perim'.¹¹³

As well as their efficiency, the characteristic ways that local labour would work also featured in almost all descriptions. Such comments ranged from a fascination with the exotic and alien nature of the workers, to showing them to be strange, primitive, and childlike. At stations where work forces were praised by for their work, such as Port Said, sailors suggest that 'it was amusing to watch the natives at work', and 'the chatter and chanting in their own "lingo" was interesting to listen to, as well as amusing'.¹¹⁴ Similar characteristics were less well received when work was not to the high standard expected, however.¹¹⁵ At Suez it was noted how 'the natives ... did more fighting and quarrelling than work'.¹¹⁶ Another log suggests that the singing of the 'crowd of dark, jabbering, unclean-looking coolies' was particularly unwelcome, 'with their dismal chant sounding in our ears like a funeral dirge'.¹¹⁷ Some heavers were so despised that their absence was welcomed. During Chinese New Year the log of the *Glory* recalls that having no Chinese heavers aboard was 'quite a treat ... without their shouting and their foreign jabber and especially their smell'.¹¹⁸ When situations reached an impasse, tensions between naval men and heavers were particularly noticeable. In an attempt to regain the control and to assert their superiority, the commanders had several techniques to 'convince' the locals to improve their attitude. In Suez, the commander sent marines to 'persuade' the locals to recommence coaling after they had left the job in the evening, and in Zea, Piraeus, a salt-

¹¹² Gibbs, *The Cruise of H.M.S. Grafton*, 148.

¹¹³ Butterworth, *The Log of H.M.S. Bedford*, 11.

¹¹⁴ Gunns, *The Log of H.M.S. Sutlej*, 20; Anning, Bentley, and Yexley, *The Log of H.M.S. Argonaut*, 11.

¹¹⁵ Tyler, *The Commission of H.M.S. Lancaster*, 48.

¹¹⁶ Gunns, *The Log of H.M.S. Sutlej*, 15.

¹¹⁷ Moore, *Commission and Travels of H.M.S. Good Hope*, 40.

¹¹⁸ Butterworth, *The Commission of H.M.S. Glory*, 136.

water hose was used to encourage heavers refusing to work in a swell.¹¹⁹ Negotiations during disagreements with heavers were often difficult, however, despite the presence of overseers, as there was generally a substantial language barrier, which could cause further delays.¹²⁰

Although officers were primarily concerned with getting coaling 'finished in the least possible time', efficiency was not the sole reason that sailors were scathing in their judgments of local labourers – slow coaling generally resulted in 'the Commander, hoping to expedite matters, [falling] the hands in'.¹²¹ This was especially detested, as these were a rare opportunity for the crew to avoid coaling.¹²² Furthermore, there was, perhaps, an element of the crew feeling coaling was beneath them when local labour, seen as racially inferior, was available. Thus when locals refused to coal, as they did for H.M.S. *Implacable*, it was blamed on it being part of the local heavers' lack of character: it was 'too hard work in the burning sun for the natives, so us unfortunate bluejackets had to lump it'.¹²³ At Aden, the crew of H.M.S. *Glory* fell victim to this, and the thoughts of the crew can easily be understood from the tone of the log entry: 'the niggers didn't seem to relish the job, so the ship's company had to coal'.¹²⁴ These occasions did allow sailors to show their own prowess at coaling, however. One log suggested that the ship's company made the best heavers, claiming that the 'niggers could not touch them; bag after bag was filled and passed from hand to hand until the end of its journey'.¹²⁵

At stations with only European settler populations, there was more difficulty with employing coaling labour, particularly in Australia. Not only did ships face problems with

¹¹⁹ Brodie, Ray, and Yexley, *The Log of H.M.S. Goliath*, 5; Gunns, *The Log of H.M.S. Sutlej*, 15; Wheeler, *The Commission of H.M.S. Pandora*, 9.

¹²⁰ Brown, *The Log of H.M.S. Repulse*, 57. Although supervisors were employed to oversee the heavers, there were still problems.

¹²¹ Gunns, *The Log of H.M.S. Sutlej*, 15; Moore, *Commission and Travels of H.M.S. Good Hope*, 40.

¹²² Gunns, *The Log of H.M.S. Sutlej*, 15.

¹²³ Parker, *The Commission of H.M.S. Implacable*, 96; Whiteley and Davis, *The Commission of H.M.S. Bulwark*, 4; Furneaux, *The Log of H.M.S. Diana*, 50; Anning, Bentley, and Yexley, *The Log of H.M.S. Argonaut*, 51-52.

¹²⁴ Butterworth, *The Commission of H.M.S. Glory*, 3.

¹²⁵ Moore, *Commission and Travels of H.M.S. Good Hope*, 41.

work rate, but an ability to unionise, due to their status as men of British or European descent, also caused disturbances to regular coaling practices, particularly after 1900. As a newspaper article of 1912 explains: 'the annual report ... shows that even the Imperial Navy in Australian waters has not been free from the inconvenience caused by the demands of unionists'. Sydney was unique in that the coal heavers (or 'lumpers' as they were known) had their own union distinct from that of the wharf labourers.¹²⁶ These unions could do little to protect the heavers from working conditions, which necessarily included long hours, horrific conditions, disease, danger, and death, but their actions did ensure that 'Sydney coal lumpers earned a higher hourly rate than even wharf labourers, and thus may have been the most highly paid casual labour in Australia at that time'.¹²⁷ The example of Australia shows the advantage held by white workers over non-white heavers, in their ability to form unions, demand better pay, and have regulated working hours. Furthermore, with a buoyant employment market, labourers were not faced with the choice between heaving and unemployment.

In contrast, the case of Simon's Town, Cape Colony, shows how labour pools could also be exploited at coaling stations. There the authorities rejected the use of a white labour force in order to avoid strikes, instead, using them only for skilled dockside jobs, an explicit example of the existence of racial hierarchies at imperial coaling stations. When the option of using convict labour was objected to by local residents, the Cape ports employed black labour to do the majority of coaling.¹²⁸ This appears to have been a decision made on the basis that black Africans were considered the lowest of all races and, although they could not be constrained in the same way as convicts, the employers could easily exploit

¹²⁶ Margo Beasley, 'Coal Lumpers', *Dictionary of Sydney*, http://www.dictionaryofsydney.org/entry/entry/coal_lumpers.

¹²⁷ *Adelaide Register*, 9 August 1912.

¹²⁸ C. Knox and C. Coetzee, *Victorian Life at the Cape, 1870-1900* (Cape Town: Fernwood Press, 1992), 32; Vivian Bickford-Smith, 'Black Labour at the Dock at the Beginning of the Twentieth Century', in C.C. Saunders and H. Phillips (eds), *Studies in the History of Cape Town* (Cape Town: The Department, 1979), 81-83.

these labourers. This was done through their large-scale importation, beginning in 1874, which created a saturated labour market despite a high turnover of labour, allowing firms to unite in fixing wages at low rates.¹²⁹ The majority of the labourers appear to have come from the Gold Coast and East Africa, and were in general preferred to other non-white labour forces. This was largely because Kaffirs, Indians, Portuguese, and Greeks were all more expensive to employ, and thus were only used as stop gaps. This difference in wages suggests that racial hierarchies existed even between types of 'non-whites' at these stations.¹³⁰ By 1890, the majority of dock workers in the Cape were black, and were oppressed with segregation and low pay.¹³¹ Although this was true of the whole of the Cape, the Admiralty harbour works at Simon's Town were a 'principal centre' of 'native work'.¹³²

While most stations employed adult male labour, some stations employed women and children in coaling ships. This appears to have been a phenomenon largely occurring in the West Indies and Zanzibar, where it was predominantly women who coaled, and Japan, where men generally coaled alongside women and children. In the log of the *Indefatigable* it states that at St Lucia 'native labour – mostly women – [were] employed, as usual'.¹³³ The log of the *Retribution* adds that the heavers were 'mostly women with baskets on heads' and they 'seem to do the work quite easily'. (See Figure 5.13).¹³⁴

¹²⁹ Bickford-Smith, 'Black Labour at the Dock at the Beginning of the Twentieth Century', in C.C. Saunders and H. Phillips (eds), *Studies in the History of Cape Town*, 85, 90-91.

¹³⁰ *Ibid.*, 100.

¹³¹ *Ibid.*, 86-87.

¹³² Native meaning black African, see *ibid.*, 90-91.

¹³³ Philip Alfred Malpas, *H.M.S. Indefatigable. Log of Second Commission from Jan. 1 1900, to Jan. 13 1903, on the North America and West Indies Station* (Bermuda: Colonist Press, 1903), 12.

¹³⁴ Watts, *The Commission of H.M.S. Retribution*, 17-19.



Figure 5.13: Local heavers coaling the *Balantia* in St Lucia in 1911. NMM, neg. no. P28491.

An earlier account from Port Royal, Jamaica, suggests that the practice of employing women in coaling warships was a long standing one. Sailors seemed to regard the use of women for this task as a novelty, but not a shocking one. A visiting female traveller, Isabelle Walton, however, was horrified by the practice. She recalls:

We arrived quite early in the morning at Kingston for coal. The deck was opened and a wooden shaft was put down. A man sat at a table with a large book. With a pen and ink, he kept a tally of the buckets of coal brought in. Then came the coal heavers, to my horror, all women with great buckets of coal on their heads, holding them with one hand and the other on their hips. Their only garment, a gown reaching about half way from the knees to the feet held on by straps over their shoulders. One of them seemed quite young, some middle aged, and some were evidently nursing mothers. I exclaimed, "Oh horrors, these women are doing work like that. Where are the men?" One [young man named] Chris said carelessly,

“They are nxxxers”. “But Chris, they are women, and men should be doing work like that.” I said no more because Chris had been raised to look on such people as cattle. These women came around and dumped the coal into the shaft, and then passed the man at the table and he [wrote] down the number of buckets.¹³⁵

The use of women for coaling appears to be something that happened all over the West Indies, as Figure 5.14 illustrates. It is not entirely clear why this was the case, although it was probably related to wage levels, and might also have been linked to the concentration of women workers in urban Caribbean spaces at the time.¹³⁶ The only other case of large amounts of women being used to coal British warships recorded is found in Zanzibar, where ‘the coaling is principally done by women who work very well’.¹³⁷

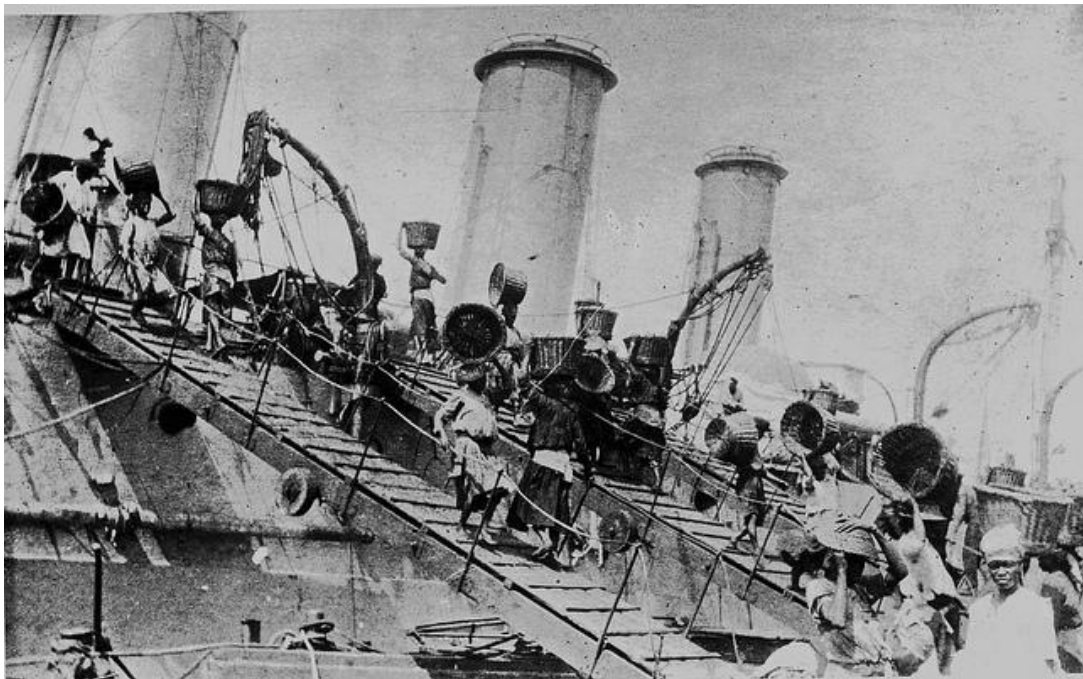


Figure 5.14: ‘Recruited local labour spares H.M.A.S. *Melbourne*’s men the chore of coaling at Martinique, c.1915’. Naval Historical Collection, Australian War Memorial, ID EN0158.

¹³⁵ Isabelle Walton Lusk, ‘A Trip to California in 1856’, http://www.sfcityguides.org/public_guidelines.html?article=1461&submitted=TRUE&srch_text=&submitted2=&topic=San%20Francisco%20Women.

¹³⁶ Private correspondence with Dr Anyaa Anim-Addo, University of Leeds.

¹³⁷ Journal kept by Edward Charrington, 1894-1898, Royal Naval Museum, Manuscript Collection, 1999/51/5.



Figure 5.15: Large coaling basket used in Bermuda. Courtesy of Bermuda Maritime Museum.

At Nagasaki, the log of the *Goliath* recalls that the coaling party were made up of a 'cheerful company of men, women and children ... passing their baskets from hand to hand ... the women [coaling] were a marvel the way they worked at it'.¹³⁸ Henry Swartz, who lived in Japan for some years, explained how the system worked:

Men in the barges shovel it up in shallow baskets holding a little less than half a bushel. This basket passes from hand to hand until it reaches the ladder, when the first girl seizes it and swings it straight up in front of her above her head, where it is caught by the girl above her; and so it goes on, from girl to girl, never stopping for a

¹³⁸ Brodie, Ray, and Yexley, *The Log of H.M.S. Goliath*, 17-18.

single minute until it finds its place in the bunkers of the ship. A line of small boys passes the empty baskets back to the barge to be refilled.

By operating in this way, Swartz worked out that coaling could be achieved at an almost unbelievable rate of 353¾ tons per hour.¹³⁹ This use of all types of labour suggests that British ships merely used the unrestricted labour available in Japan, where the method of coaling was tailored for the use of women and children as well as men. A photograph included in the *Army and Navy Illustrated* (Figure 5.16) suggests some surprise at the use of these 'dainty little maidens' to coal ships in Japan, however, remarking they were almost unrecognisable from the most famous Japanese women of the day, those in Gilbert and Sullivan's *The Mikado*. There is no sense of outrage, however, suggesting that although seen as quite peculiar, contemporary Britons had little problem with women engaged in manual labour. This is perhaps explained by the fact that many of the seaman originated in coastal towns, where female labour at the dockside was common. Indeed, women were often employed in the British fishing industry, curing and gutting fish, mending nets, and doing other general labour.¹⁴⁰

¹³⁹ Henry B. Schwartz, *In Togo's Country, Some Studies in Satsuma and Other Little Known Parts of Japan* (New York: Eaton and Mains, 1908), 200-201.

¹⁴⁰ See, for example, James R. Coull, *The Sea Fisheries of Scotland: A Historical Geography* (Edinburgh: John Donald, 1996).



Figure 5.16: 'Female Labour and the Fleet', *Navy and Army Illustrated*, 4 February, 1899.

Levels of exploitation of the local labour force appear to have been variable. The log of the *Grafton* suggests that at Singapore the 'Chinese [coal heavers] ... make a very good living out of the game, being paid so much per basket'.¹⁴¹ Conversely, contemporary evidence suggests that other heavers, in Jamaica at least, 'would work for twenty-four hours, then receive a pittance earned for their work while the white man would fill his pockets with the money they had earned for him'.¹⁴² As has been mentioned, however, at some stations there were few other employment opportunities. This was particularly the case in the more remote stations and those which were not significant towns or cities in their own right. The populations of St Vincent, Cape Verde, were nearly entirely employed in coaling, as were those in Port Royal, Jamaica, and Suez. Although coaling offered

¹⁴¹ Gibbs, *The Cruise of H.M.S. Grafton*, 147.

¹⁴² Isabelle Walton Lusk, 'A Trip to California in 1856'.

employment, with little other options, it also allowed low wages and high labour turnover.¹⁴³

Although little evidence survives, it is clear that there were also more serious ramifications for some of the populations of coaling stations. The need for labour brought large numbers of workers, either by free will or otherwise, to some coaling stations, which subsequently created areas of cramped accommodation, low wages, and disease. Similarly, the presence of large numbers of naval men encouraged high levels of prostitution, which in turn spread venereal disease throughout sailors and local communities, which is discussed in more detail in the next chapter.

Dangers of Coaling

Regardless of methods or labour type, coaling a warship was fraught with danger. Both full coal sacks and the coaling equipment were easily heavy enough to crush anyone unfortunate enough to be underneath them when they fell, and this happened with alarming regularity. This danger was escalated by the sense of competition that infected nearly every coaling day. Speed led to an increased chance of improperly secured equipment, collisions, and carelessness. Such was the rate of accidents that one sailor suggested that on 'nearly every ship some poor soul lost his life' coaling. In fact, death and serious injury were so common during coaling that the process would not stop when it happened.¹⁴⁴

As a result of these accidents, concerns about the dangers of coaling were raised, somewhat belatedly, in Parliament, both in 1909 and in 1913. On the second occasion, the new First Lord of the Admiralty, Winston Churchill, answered that:

¹⁴³ Journals of Donovan C. Roe 1911–1912, NMM JOD/92/2; Gunns, *The Log of H.M.S. Sutlej*, 15.

¹⁴⁴ Lance, 'Interview with Arthur Ernest Lilley'.

The risks attached to coaling are great, but in many cases accidents occur through want of care at a critical moment, and this, no action on the part of the Admiralty can prevent ... I am informed that as compared with the large quantities of coal handled under so many varying conditions, the number of serious accidents is small.

Even if it was 'doubtful whether it would serve any useful purpose', the question did precipitate a Parliamentary Paper: *The particulars of the more serious accidents which have occurred during the coaling of His Majesty's ships in the years 1910, 1911, and 1912*.¹⁴⁵ The report detailed only the most serious accidents that had occurred while coaling, stating that in these three years, 16 crew members had been killed, with 23 seriously injured. Most common serious injuries and deaths were a result of a hoist of coaling bags falling and several were as a result of the coaling apparatus collapsing. Although most accidents happened above decks, stokers could easily be trapped in bunkers, should the engineer sub-lieutenant's attention wander and too much coal was sent down the chute. As a result, there were several occurrences of carbon monoxide poisoning in the coal bunkers, and although these were usually not fatal, one case included in the report proved to be.¹⁴⁶

Reports given in logs suggest most accidents and deaths involved the hoist wires snapping, and the bags falling, confirming the findings of the Parliamentary Paper.¹⁴⁷ They also record less frequent types of accidents, which show just how dangerous and unpredictable coaling could be. The log of the *Eclipse* recalls 'several accidents occurred' during coaling, including a petty officer slipping down an empty bunker, fracturing his ribs

¹⁴⁵ Coaling Accidents (Navy), House of Commons Debate, 6 July 1909, *Hansard*, vol. 7 col. 1019; Coaling Accidents (Navy), House of Commons Debate, 15 January 1913, *Hansard*, vol. 46, cols 2046-7.

¹⁴⁶ British Parliamentary Papers, 1912-13 [Cd. 6634] *Navy (coaling accidents). Particulars of the more serious accidents which have occurred during the coaling of His Majesty's ships in the years 1910, 1911, and 1912*.

¹⁴⁷ *Lance*, 'Interview with Arthur Ernest Lilley'.

and being sent to Yokohama Hospital.¹⁴⁸ Accidents also included collisions with other vessels. The *Retribution*, coaling 'alongside' in rough weather in the West Indies, 'nearly put her funnel through the bottom of the first cutter'.¹⁴⁹ Similarly, on the Mediterranean Station, the steamship *Henry Aming*, supplying coal for the *Inflexible* and *Trafalgar*, was pierced by H.M.S. *Edinburgh* in a collision.¹⁵⁰ Surprisingly, although the danger of fire was constant, there is only one serious incident recorded in surviving logs, when, at Chefoo on the China Station, a collier full of Welsh coal caught fire.¹⁵¹

Conspicuously absent are accounts of accidents involving local labour. It seems inconceivable that the rate of accidents, and indeed deaths, amongst indigenous coal heavers could have been lower than that of sailors. Indeed, with local workforces coaling ships far more regularly, it seems highly probable that injury and death would have been quite common. That such occurrences are completely nonexistent in records underlines the view of the local labourer as part of the coaling machine, to be replaced when necessary.

Conclusions

This chapter has sought to understand the physical process of coaling a naval ship. As a result of the slow and very limited adoption of mechanised coaling, this process was still largely a human one throughout the period. As such, this chapter has been a history of human labour, both of naval men and of local and imported heavers. That is not to say that the process was static – in fact, due to the regularity of coaling, and the familiarity with the methods involved, rates of coaling improved throughout the period.

¹⁴⁸ Dunslow and Jones, *The Commission of H.M.S. Eclipse*, 65.

¹⁴⁹ Watts, *The Commission of H.M.S. Retribution*, 172.

¹⁵⁰ W.E. St Clair, *Three Years with the Mediterranean Fleet or the Cruise of H.M.S. Inflexible* (Valetta: L. Critien, 1893), 30.

¹⁵¹ Gibbs, *The Cruise of H.M.S. Grafton*, 100.

The use of manpower for coaling may have made sense economically and logistically, but it was a dirty, exhausting, and dangerous process. Indeed, surviving records from those seamen involved in coaling present it as a detested procedure only made worse by inclement or oppressive weather. As a result, coping mechanisms developed aboard. Competition with other ships for station records and the promise of a beer afterwards not only helped to conceal the monotony and pain of coaling, but also helped to improve mobilisation speeds. Other methods, such as coaling dress and the band playing jolly tunes, helped to create a more informal atmosphere during coaling, and the allowance of swearing and the fact all members of the crew had an active role in coaling were integral to morale. Such mechanisms were effective, and this is reflected in the high coaling rates achieved by naval crews. These coping mechanisms also show us that these seamen were defined during coaling by their highly disciplined nature, epitomised by co-operation and, often, a spirit of competition.

These ideas of discipline and efficiency, inherited from the navy, heavily influenced sailors' views of local coal heavers. These descriptions also show that they were also heavily shaped by perceived racial hierarchies. This is particularly visible where the heavers were deemed to be sub-standard, through the negative and racialised language used in these descriptions. Even where accounts are positive about the work of local heavers, there is a strong suggestion that they were treated merely as cogs in a coaling machine, as much part of the machinery of coaling as the lighter or the winch, not people, but tools for the use of the navy. This idea is furthered by the exploitation of labour in places such as Simon's Town, where economy came at the expense of labourer's health, safety, living standards, and earnings. Indeed, whereas the frequent accidents involving ships' crew members are described regularly in logs and journals, local heaver casualties are conspicuously absent. This again shows the place of local labour – when broken, it was simply replaced.

Chapter 6: Sojourning at the Coaling Station

Although their primary purpose was for refuelling, coaling stations were also sites of leisure and recreation for visiting sailors. As E.G. Anning explains, a sailor's time at a station was usually not a fleeting visit:

A ship on a foreign station, moving from port to port, offers continual opportunity for diversion, and as an abundance of leave is granted to men of good character, they have ample opportunity to visit the different towns, see the sights, and study the ways of the natives.¹

Indeed, these stays could be reasonably lengthy, Edward Charrington recalled that he spent 'a very pleasant fortnight at the island' of St Helena.²

The regularity and length of these stays makes sailors' leisure time at these stations a particularly important instance of how Britons interacted with the wider empire and world. Furthermore, sailors did not only encounter local places and people, but were parts of wider networks of westerners, connected by multiple interactions across Britain's chain of coaling stations. Thus, stations were not just centres of labour, merely pauses in a sailor's commission, but meaningful places which defined time spent abroad. Indeed, with significant numbers of sailors abroad, these periods of leisure are an important example of the everyday experience of empire.

The chapter considers how the sailors' time sojourning at coaling stations was shaped by both the character of the station and the opportunity to explore it at length. Indeed, although coaling stations did not stand apart from ports, cities and hinterlands, the naval man's experience was distinct from others at these places due to his more

¹ Anning, Bentley, and Yexley, *The Log of H.M.S. Argonaut*, v.

² Journal kept by Edward Charrington, 1894-1898, Royal Naval Museum, Manuscript Collection, 1999/51/5.

encompassing interactions with the station, and with other westerners present. The nature of coaling stations is therefore particularly important because they were not places merely passed through, but explored by naval visitors as tourists. Thus, although many coaling stations acted as points of entry to large imperial cities, ports, islands, or hinterlands inhabited by other Britons, the ample leisure time afforded to sailors, and encounters with the transient crews of other naval vessels, were key in shaping their experience of these places. Indeed, the ability of sailors to act as tourists meant they were more fully immersed in these hybrid 'place[s] of economic and cultural exchange' where 'races, cultures, and ideas as well as goods from a variety of places jostle, mix, and enrich each other and the life of the city'.³

Coaling stations were therefore important sites of regular transnational exchange between British naval men, local populations, and other transient people found there. This chapter examines how the sailors' sense of themselves, as Britons, Europeans, and mariners, influenced their views when on leave at coaling stations. Although different stations were perceived to have distinct characters, it is possible to draw a distinction between those with 'western' and 'non-western' populations. Attitudes towards non-western populations tended to be shaped by ideologies of race and civilisation typical of Britons in this period. In particular, a pervading assumed racial superiority was evident in patronising and often denigrating views of local populations, comments on the civilising power of British influence, and a fascination with the exotic. These same attitudes towards racial difference also precipitated the fraternisation between sailors and other 'westernised' visitors, including members of the Japanese navy, and inhabitants at coaling stations in unfamiliar climes.

³ B.S. Hoyle, 'Maritime Perspectives on Ports and Port Systems: The Case of East Africa', in Broeze (ed.), *Brides of the Sea*; Rhoads Murphey, 'On the Evolution of the Port City', in Broeze (ed.), *Brides of the Sea*, 225.

The continual interactions with westerners at each station meant that the mobility of sailors formed transient trans-oceanic bonds which spanned thousands of miles. The aggregation of these relationships linked these stations in a wider international maritime community which shaped the experience of British naval men at coaling stations. Although these interactions are integral to understanding the leisure time of British seamen abroad, the coaling station was not merely a neutral space in which these events took place, but differences in location, landscape, commercial importance, and local populations shaped the mobile communities that emerged. This chapter therefore argues that it was through the shared encounters of the unique facets of each station that the distinctive experience of sailors at coaling stations emerged. Indeed, it was through the way that sailors explored these places, coming together and crossing boundaries in ways other westerners did not, that was a major factor in transforming stations from being merely an amalgamation of the western cultures present there, but rather a distinct culture of their own.⁴

Finally, the chapter considers the most predictable pastimes for unsupervised single men abroad: vice and the abuse of alcohol. Although these were occluded from almost all of those records disseminated in Britain – in order to preserve a moral image of the navy – this was not a reflection of the reality abroad.⁵ While alcohol was an integral part of naval life, and of socialising on leave, the use of prostitutes was more problematic for the Admiralty. The spread of venereal disease, which was exacerbated by the movement of the maritime community who frequented these stations, was a particular concern. Losing large numbers of sailors to the sick bay for not inconsiderable amounts of time led to measures to control venereal diseases, but this was solely for the benefit of the seamen. In fact, the instigation of such measures clearly shows the place of the stations’

⁴ Lucy Lippard cited in Tim Cresswell, *Place: A Short Introduction* (Oxford: Blackwell, 2004), 49; A.D. King, *Colonial Urban Development: Culture, Social Power and Environment* (London: Routledge, 1976), 58-59.

⁵ Leggett, ‘Navy, Nation and Identity in the Long Nineteenth Century’, 156.

local populations in the minds of the navy, merely there to service British personnel, and only of concern if their wellbeing affected that of naval men.

The Sailors' Experiences of the Coaling Station

For ships' companies, shore-leave in an interesting port provided relief after the exhausting and dirty work of coaling. Leave was generally granted as standard once the coal was loaded, unless orders were given for immediate departure.⁶ This leave was in almost all cases enjoyed by the crew, officers and bluejacket alike.⁷ During a three-year commission, these men would spend significant time at leisure on numerous stations. As a result, despite sailors' mobile existence, coaling stations were not experienced as places of work, but explored as 'authentic, rooted, bounded place[s]' with distinct 'histor[ies] that permeate[d] the networks that flow[ed] through' them. Thus, sailors did not see coaling stations as a series of 'non-places' of little significance, merely filling the time between naval manoeuvres. Instead, the individual characteristics of each place were crucial, as they shaped the experience of British naval men.⁸

As most of those aboard naval vessels initially had no knowledge of foreign lands, the experience of being given leave on a foreign station was usually a culture shock, especially for those on stations outside European and 'western' waters. Even those who had extensively travelled remained captivated by the landscapes of coaling stations. Thus, recollections of their stays at stations are littered with references to the local peoples, landscapes, flora and fauna, and entertainments.

⁶ W.H. Watts, *The Commission of H.M.S. Retribution*, 131.

⁷ On very rare occasions only officers were given leave. See, for example Callow, *The Commission of H.M.S. Royal Arthur*, 35, 38.

⁸ Tim Cresswell, *On the Move: Mobility in the Modern Western World* (London: Routledge, 2006), 220, 225, 257.

During leave, relieved of official duties, sailors could become travellers, tourists, and explorers. This was in contrast to other Britons present at these stations, meaning that they experienced stations in a different way.⁹ Even fellow British seamen working for commercial shipping companies, and sharing the same need for fuel, did not experience the station in the same way. They were tied to schedules and stopped at these stations solely for coaling or business, with little time for leave, making their experience briefer and less leisurely than a sailor's time at a station. There were also differences in the experience of a sailor and resident Britons at some coaling stations. Unlike the colonial elites who remained in these spaces permanently, and often segregated themselves from local populations, the fleeting and recreational nature of the visits to these places meant that sailors were far more likely to interact with local people and stations through visiting landmarks, enjoying the landscape, and immersing themselves in foreign bazaars.¹⁰ Moreover, the necessary positioning of coaling stations on the coast meant that sailors were thrust into imperial contact zones as soon as they came ashore, with local workers filling the port areas. Thus, unlike spaces such as the Indian military station or British Administrative Areas, the surrounds of the coaling stations were not 'occupied, modified and principally inhabited by representatives of the colonising society' nor were they spaces marked 'in terms of separateness, but in terms of co-presence, interaction, interlocking understandings and practices, and often within radically asymmetrical relations of power'.¹¹

The way in which sailors interacted with others at stations was also influenced by the issue of class and rank. As opposed to permanent British residents, the variance in class

⁹ Cresswell, *Place: A Short Introduction*, 23.

¹⁰ Stephen J. Hornsby, 'Discovering the Mercantile City in South Asia: The Example of Early Nineteenth-Century Calcutta', *Journal of Historical Geography*, 23, no. 2 (1997). This was also true of British Hill Stations in India. See Judith T. Kenny, 'Climate, Race, and Imperial Authority: The Symbolic Landscape of the British Hill Station in India', *Annals of the Association of American Geographers*, 85, no. 4 (1995).

¹¹ King, *Colonial Urban Development*, 17; Mary Louise Pratt, *Imperial Eyes*, 8.

of naval men meant they would form relationships with different levels of society at the stations, not just those colonial elites resident there. There was, of course still some level of segregation, at places like naval clubs, but bluejackets and junior officers were noticeably more likely to mix in bazaars and to have a common interest in local cultures. By recognising this, it is clear that in entering these coaling stations, sailors became 'one of the ingredients of an existing hybridity', a 'colonial third culture' which was not just a combination of distinct cultures, but a new culture in itself.¹² As nodes of naval coaling networks, the stations were therefore linked 'contact zones', where transient communities interacted with permanent residents.¹³

Even much smaller stations based on islands or tiny littorals were distinctive because of their place in a wider maritime system. By the later nineteenth century, most were connected with each other and other parts of the empire by telegraph, making them far less isolated than many island spaces. Furthermore, most had regular naval visitors, who interacted with local populations and each other, which fostered a sense of maritime community that spanned the thousands of miles between stations. The connections between these nodes are crucial, as 'places need to be understood as sites that are connected to others around the world in constantly evolving networks which are social, cultural and natural/environmental'.¹⁴ As a result, the analysis of the transient maritime community which emerged across these stations requires the inclusion all naval coaling stations within the same scope of enquiry.

¹² Lucy Lippard cited in Cresswell, *Place: A Short Introduction*, 49; King, *Colonial Urban Development: Culture, Social Power and Environment*, 58-59.

¹³ The idea of a 'non-place' is put forward by Marc Augé. See Cresswell, *Place: A Short Introduction*, 43.

¹⁴ William Cronon, cited in *ibid.*, 43.

Interactions with Non-Western Local Populations

It seems obvious to state that when arriving at naval coaling stations sailors could only access land through the harbour, but this had an impact on the way that they experienced these imperial places. Indeed, from their arrival seamen were thrust immediately into the most diverse racial and cultural space, particularly at large trading centres. Interactions with local peoples encountered in these places were often reciprocal: naval vessels provided a captive market for the local merchants and opportunist pedlars, and sailors were usually in want of goods, laundry services, and hospitality. Indeed, it was the mobility of the sailors that was crucial to the survival of many local populations, such as at Valletta, where the local populations 'depend[ed] very largely on the fleet for a living'.¹⁵

Often, sailors would encounter local peoples even before disembarking, as many traders took a more aggressive attitude to selling their goods, coming directly to the ship at anchor (see Figure 6.1). When the *Retribution* arrived at St Lucia, 'there was a fine crowd of niggers there waiting [its] arrival with baskets of fruit', where they would swap fruit for jumpers.¹⁶ At Madeira, ships were surrounded by boats of all descriptions, selling wicker baskets, fruit, parrots, and canaries, which would be swapped for sailors' old clothes.¹⁷ At Cape Coast Castle H.M.S. *Swallow* witnessed 'natives' in war canoes 'chanting their wild, weird litanies like people possessed', and selling bananas, pineapples, pomegranates, mangoes, yams, ivory, wood, and jewellery.¹⁸ At Singapore the *Karrakatta* was swarmed with locals selling silks and fruit, and at Bombay people came aboard not only to sell cashmere and silk, but also to repair boots and perform chiropody.¹⁹ It was not just to sell wares and services that locals visited warships, but also to entertain the sailors, and these

¹⁵ Cresswell, *On the Move: Mobility in the Modern Western World*, 251; Parker, *The Commission of H.M.S. Implacable*, 6-7.

¹⁶ Watts, *The Commission of H.M.S. Retribution*, 17-19.

¹⁷ Ibid., 14.

¹⁸ Noble, *'Tween Decks in the Seventies*, 92-93.

¹⁹ Silk, *The Log of H.M.S. Karrakatta*, 15, 19-21.

visitors appear to have been welcomed by sailors. At Penang, 'natives' came aboard to dance and juggle.²⁰ At Bombay, sailors were again entertained by 'native jugglers', and also by snake charmers and fortune tellers. In Suva, Fiji, sailors enjoyed a catamaran race, dancing, fire walking and even a visit from a Royal party.²¹ More primitive entertainment was also enjoyed, including pitting a mongoose against a snake in a fight to the death, allowing the sailors to partake in gambling.²² Although some accounts bemoan such invasions of naval space, evidence of the employment of services, goods, and entertainments by sailors aboard ship suggests that these interactions were mutually beneficial.



Figure 6.1: Local people coming aboard a warship, c.1900. NMM, ALB 10/254.

²⁰ Ibid., 17.

²¹ Callow, *The Commission of H.M.S. Royal Arthur*, 74-76.

²² A. Reeve, *The Commission of H.M.S. Perseus. East Indies, Including Persian Gulf and Somaliland. 1901-1904* (London: Westminster Press, 1904), 26; Silk, *The Log of H.M.S. Karakatta*, 19-21.

Whereas local merchants saw the arrival of these warships as a business opportunity, some visitors came only to witness the size and modernity of a British warship. Such impressive ships and large numbers of men inevitably drew interest from local populations, and thus, at those stations less frequently visited by state-of-the-art warships such as Piraeus, Karachi and Madras, large crowds would visit to marvel at these wonders of technology.²³ Those who encountered these vessels and seamen interpreted their identities in different ways, and these interactions were deeper than merely transactional, but were also potent symbols of the power of the British Empire abroad. As such, they could variously be interpreted as a reassuring presence and deterrence to potentially aggressive rivals, or as a statement of power and a warning against rebellion.

The need for services provided by locals is further reinforced by the fact that sailors would often seek them out on land. In particular, naval men would usually frequent the markets and bazaars of non-westernised foreign stations to purchase wares and immerse themselves in local maritime culture (see Figure 6.2). Although purchasing essential goods and services was often the reason for visiting such places, sailors would usually buy souvenirs. These purchases suggest an interest in the cultures of stations which went beyond simply buying essential supplies. This appears to have happened at almost all stations, for example when the *Royal Arthur* arrived at Malta ‘the usual invasion of vendors took place, making bargains (?) for lace, holy stone, etc’.²⁴ Most was written about the markets of the more culturally different stations, however. Several cities were well known for their bazaars – Tokyo was said to ‘swarm’ with them – and the products and people drew many comments from sailors.²⁵ In Shanghai, for example, ‘practically anything could

²³ Wheeler, *The Commission of H.M.S. Pandora*, 25-28; Reeve, *The Commission of H.M.S. Perseus*, 6, 40; G. Crowe, *From Portsmouth to Peking Via Ladysmith with a Naval Brigade* (Hong Kong: Hong Kong Daily Press, 1901), 86.

²⁴ Callow, *The Commission of H.M.S. Royal Arthur*, 7.

²⁵ Brodie, Ray, and Yexley, *The Log of H.M.S. Goliath*, 103.

be obtained, Chinese or English'.²⁶ Similarly, on Hong Kong's Queen's Road there were 'merchants of every type'.²⁷ At Yokohama, a sailor's appetite for silk, bronze, lacquer, porcelain, and other curiosities could be met, and at Chefoo, they could visit the silk factories themselves.²⁸ At Karachi, cashmere was abundant in markets, at Gibraltar one could purchase Indian shawls, and at the Turkish port of Smyrna a visitor could buy silk scarves, carpets, and Turkish delight.²⁹

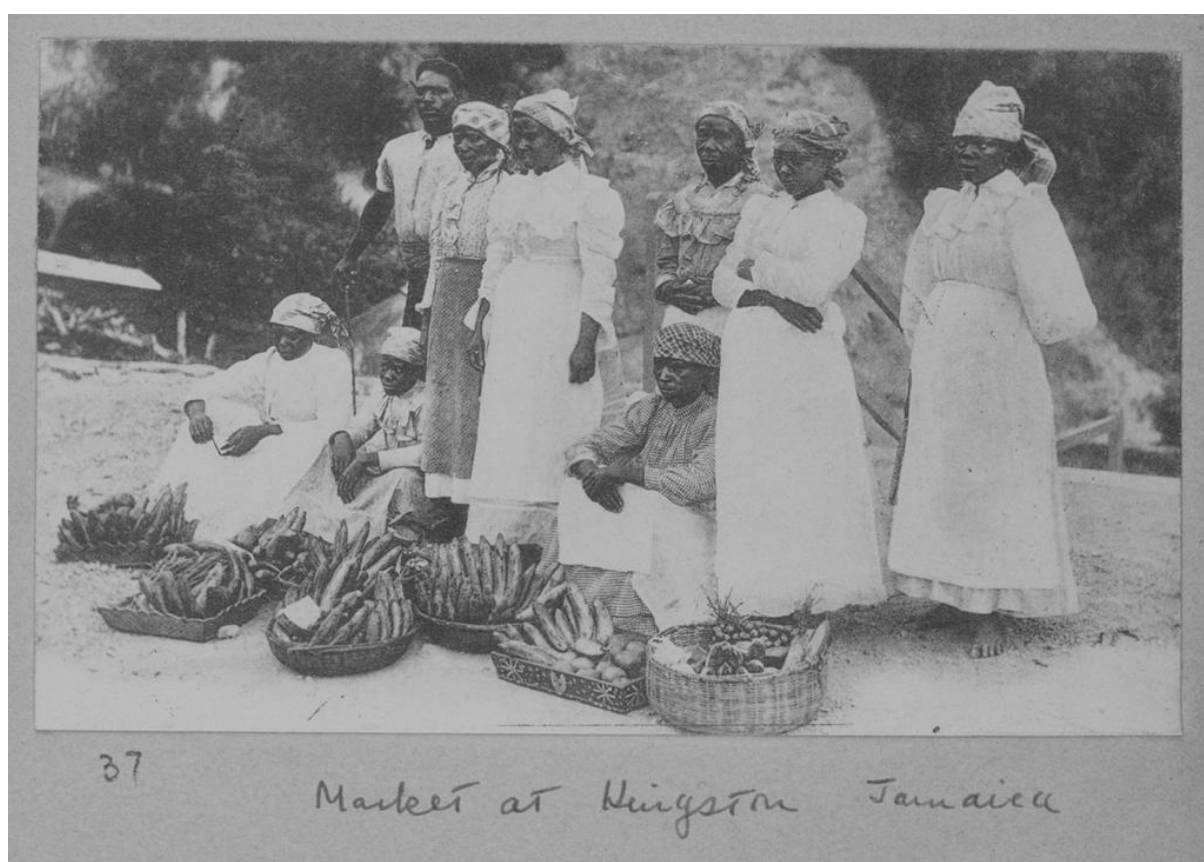


Figure 6.2: A sailor's photo of fruit for sale at a market in Kingston, Jamaica c.1900. NMM, ALB 10/37.

The sense of fascination with the unique facets of individual coaling stations suggested by these purchases of local wares is augmented by the descriptions of the racial

²⁶ Gunns, *The Log of H.M.S. Sutlej, Pacific and China Stations, 1904-1906*, 140.

²⁷ W.J.J. Spry, *The Cruise of Her Majesty's Ship Challenger* (London: Sampson Low, Marston and Company, 1899), 193-201.

²⁸ Ibid., 230-242; H. Breaks, *The Log of H.M.S. Bonaventure*, 70-71.

²⁹ Journals of Donovan C. Roe, 1911-1912, NMM, JOD/92/2; Reeve, *The Commission of H.M.S. Perseus*, 6; Brown, *The Log of H.M.S. Repulse*, 56.

and cultural diversity of traders at the station. Bombay's bazaars were said to contain a 'motley population', just as Colombo's were 'teeming with every variety of oriental race and costume'.³⁰ In Hong Kong, although there were many Chinese, often wearing national dress, a visitor could also expect to see 'Jew, pagan, and Christian, Buddhist and Parsee, ... Japanese, and European fill[ing] the streets'.³¹ Singapore, although dominated by a large Chinese population, was also home to Malay, Japanese, 'Hindoo', Persian, 'wild tartar', Bornese, Sumatran, Japanese, 'jet black Africans' and even New Zealanders. This variety of races and customs made 'Singapore's human panorama most exciting and interesting'.³² At Bombay, the 'gaudy headdresses of its mixed population turn the streets into a blaze of colour'.³³ European stations also presented visitors with a vast array of cultures and peoples. Both Malta and Gibraltar contained 'men of pretty well every nationality'.³⁴ This variety made these places unique, containing 'a mixture of races, customs, and manners, such as can scarcely be found at any other place in Europe'.³⁵ Even at small stations such as Freemantle, Western Australia, 'the streets [were] crowded with all nationalities'.³⁶

Such diversity was generally celebrated as creating a thrilling and novel environment, but local peoples were often seen as objects of curiosity, merely part of the exotic landscape.³⁷ Attitudes towards local people at stations in general adhered to contemporary ideas of race and their characteristics, even if they were not chiefly negative or denigrating. In fact, it is remarkable how much interest naval men took in at least some indigenous peoples, perhaps as a result of the nature of these interactions. Indeed, just as impressions of local heavens were shaped by the fraught nature of coaling, impressions of

³⁰ John Anderson Dougherty, *The East Station; or the Cruise of H.M.S. Garnet 1887-90* (Malta: Muscat Printing Office, 1892), 87, 115.

³¹ Spry, *The Cruise of Her Majesty's Ship Challenger*, 193-201.

³² Brodie, Ray, and Yexley, *The Log of H.M.S. Goliath*, 8; Raphael Semmes, *The Confederate Raider Alabama* (London: Richard Bentley, 1865), 320-35.

³³ Reeve, *The Commission of H.M.S. Perseus*, 66.

³⁴ Brown, *The Log of H.M.S. Repulse*, 16.

³⁵ Spry, *The Cruise of Her Majesty's Ship Challenger*, 14; Gunns, *The Log of H.M.S. Sutlej*, 8.

³⁶ Callow, *The Commission of H.M.S. Royal Arthur*, 35, 38.

³⁷ See Mimi Sheller, *Consuming the Caribbean: From Arawaks to Zombies* (London: Routledge, 2003).

local populations during leave were tempered by the touristic nature of these encounters. Of particular note were the comments devoted to Polynesian and Melanesian peoples, which reflected the accepted idea of them as 'exotic, distant and other', illustrated by the log of the *Karrakatta*, which dedicated twelve pages to notes on traditional Maori culture.³⁸ Similarly, the praise of Fijians for their 'splendidly formed bodies', reflected the connection between ideas of Pacific Islands as idylls and their peoples as 'a valuable backdrop for island dreaming'.³⁹ The wider idea that these South Sea islanders were 'almost Caucasians', was supported by the reports given by naval men of the progress of the civilising mission on the Australia Station.⁴⁰ Indeed, reports in naval logs suggested that Aborigines, Maoris, and South-Sea Islanders were, somewhat patronisingly, 'fast coming within the pale of civilisation'. Even though they were held back by 'strange customs and superstitions', they were still of great interest to the sailor.⁴¹

Similarly, ideas about civilisation, or indeed westernisation, brought about positive reports of some local peoples on the China Station. The company aboard the *Grafton* took great interest in the 'figure, physiognomy, costume, and customs of the people' of Yokohama, concluding that they were, 'on the whole, a short, sturdy race of people,' who were 'also very intelligent, industrious, and very courteous in their manners'. Such was the impression that the locals made on the ship's company that the log records 'Yokohama had endeared itself to the hearts of our ship's company, and we left with many regrets and wishes for a speedy return'.⁴² It was also noted that on stations such as Nagasaki and Yokohama, locals were slowly adopting English customs.⁴³ The idea of a racial hierarchy is particularly shown in these examples, with the adoption of western, and particularly

³⁸ John Connell, 'Island Dreaming: The Contemplation of Polynesian Paradise', *Journal of Historical Geography*, 29, no. 4 (2003); Silk, *The Log of H.M.S. Karrakatta*, 54-65.

³⁹ Callow, *The Commission of H.M.S. Royal Arthur*, 74-76; Connell, 'Island Dreaming'.

⁴⁰ Connell, 'Island Dreaming'; Silk, *The Log of H.M.S. Karrakatta*, 54-65.

⁴¹ Fowler, *The Log of H.M.S. Encounter*, 124.

⁴² Gibbs, *The Cruise of H.M.S. Grafton*, 10-11.

⁴³ Anning, Bentley, and Yexley, *The Log of H.M.S. Argonaut*, 33.

British, customs seen as a step toward civilisation for these peoples. Many imagined the British sailor to be an object of admiration to 'orientals'.⁴⁴ In fact, sailors consistently used themselves as a yardstick to measure other against, and there was an assurance that contact with Britons would act as a catalyst in their progress towards civilisation. Thus, the log of the *Bedford* considered that 'Chinamen at the ports', who had been in contact with sailors, 'in many respects [were] a more advanced and enlightened being than those of inland towns', who had not.⁴⁵ The influence of British servicemen appears to have had less of an impact at Chefoo, however, where 'the natives [were] evidently learning the English language, but their ideas are still confused'.⁴⁶ Sailors would often divide populations by their perceived civility. Thus, the population of Kowloon, Hong Kong, were 'very noisy and dirty. The company's officials however are most civil and obliging to one'.⁴⁷

Those peoples observed by sailors to lack the willingness to 'civilise', or to conform to western expectations, were portrayed more critically, and sailors often resorted to crude stereotypes. Whereas there were many examples of praise for inhabitants of the China Station, some populations received more disparaging comments. At Chinampo it was observed that 'Korean people seem to be a slovenly race; the women only dress to the waist, the upper part of the body being exposed and very dirty'.⁴⁸ Sailors of the *Alacrity* paint a similar picture describing them as 'most curiously dressed', and as a 'decidedly dirty race'.⁴⁹ Similarly, at Singapore, the people were lambasted for their 'ridiculous attire'.⁵⁰ At Canton, it was reported that the population was some two million, 'the majority of them

⁴⁴ Butterworth, *The Log of H.M.S. Bedford*, 128.

⁴⁵ *Ibid.*, 128.

⁴⁶ Gibbs, *The Cruise of H.M.S. Grafton*, 85.

⁴⁷ Journal kept by Edward Charrington, 1899-1902, Royal Naval Museum, Manuscript Collection, 1999/51/7.

⁴⁸ Now Namp'o, North Korea. Gunns, *The Log of H.M.S. Sutlej*, 96.

⁴⁹ Journal kept by Edward Charrington, 1899-1902, Royal Naval Museum, Manuscript Collection, 1999/51/7.

⁵⁰ Silk, *The Log of H.M.S. Karrakatta*, 15.

are an awful looking lot of ruffians and blackguards'.⁵¹ The populations of some parts of Asia were seen as particularly barbarous. At Formosa, the 'natives' were 'considered savage and warlike, and have given much trouble to the Chinese and Japanese due to their proclivity for head hunting'.⁵²

Almost universal criticism was reserved for those inhabitants of South America and the Caribbean. At Acapulco, for example, the populace were criticised for their 'indolent nature', as they spent 'most of their time in wine shops and watching cock fighting'.⁵³ Similar criticism was aimed at the black inhabitants, particularly at St Lucia and Jamaica. Not only were these 'niggers' idle, but they were 'dressed in the most grotesque rigs imaginable: one in a pair of pants which are tied round his neck, and a bluejacket's old cap'.⁵⁴

Judgements of a station's population were not always based solely on perceived race, however. At some stations, less savoury incidents coloured perceptions of its people. By the 1910s, the sailors' relationship with the locals of St Helena was in severe decline, with locals complaining that naval ships drained its vital resources, causing the ship's company to not be sorry to leave.⁵⁵ Minor tensions such as these were put into context by more serious events, though. A sailor who went to buy provisions for the ship at St Vincent, for example, was drugged by a 'vile looking Portugee', robbed, stripped, and left on some rocks. Once found, the offender was hanged by the local authorities, leading one sailor to suggest that he would 'wager none in that cinder keep of an island ever wanted to interfere with a British bluejacket again'.⁵⁶ Other serious incidents at stations included a member of the Mediterranean fleet, at Salonica, Turkey, being 'badly stabbed', and at Malta, a young

⁵¹ Journal kept by Edward Charrington, 1899-1902, Royal Naval Museum, Manuscript Collection, 1999/51/7.

⁵² Ibid.

⁵³ Albert Newton, *The Commission of H.M.S. Grafton*, 125.

⁵⁴ Watts, *The Commission of H.M.S. Retribution*, 99-100.

⁵⁵ Journals of Donovan C. Roe, 1911-1912, NMM, JOD/92/2.

⁵⁶ Noble, *'Tween Decks in the Seventies*, 90-92.

bluejacket was murdered 'in cold blood'.⁵⁷ These incidents appear to have been rare, however, and in general relationships appear to have been cordial between sailors and local populations.

Interactions with other 'Westerners'

At most stations, sailors would also interact and spend extensive time with other westerners. Here the term 'westerner' is used to refer to other Britons, the crews of European, American, or Japanese naval vessels, or local Europeanised populations, especially on stations in the settler colonies. That British sailors interacted with Japanese sailors in the same way as Europeans and Americans was a result of the westernisation of Japan by the later nineteenth century. Furthermore, there was a strong connection with Britain, which became an official ally in 1902, and manufactured many of Japan's ships, trained its cadets, and provided a model for the Japanese navy.⁵⁸

Depending on the facilities of a station and the rank of the naval man, these interactions could be formal, such as dinners and balls, or informal, such as enjoying local cultural activities, or the local hospitality. Such interactions, unlike those between British sailors and non-western populations, were made on an equal footing, and this fraternisation created human networks that spanned across stations.

Sport

One of the most pervasive interactions between British sailors and other westerners was through sport, and this was a key factor in the formation of these transnational, imperial,

⁵⁷ Wheeler, *The Commission of H.M.S. Pandora*, 8, 81.

⁵⁸ See Olive Checkland, *Britain's Encounter with Meiji Japan, 1868-1912* (Basingstoke: Macmillan, 1989), especially 148-158.

naval, and maritime relationships.⁵⁹ Sport not only fostered a sense of competition among sailors, useful for fleet exercises such as coaling, gunnery and signalling, but also helped naval men foster the imagined characteristics of the 'imperial man': self control, discipline, and *esprit de corps*. It also encouraged the development of relationships between British naval ships, British populations at the station, foreign warships, and local western populations. It helped to cultivate solidarity in colonial societies, and developed a sense of imperial fraternity in the settler colonies. Indeed, 'sport played a major role in the transmission of imperial and national ideas'.⁶⁰ During almost every leave and at practically every station some sort of sport occurred.

The simplest of these were impromptu swimming and boat races – both easy to organise at short notice. These were often informal races between sailors from two warships, attracting gamblers from both sides. Rivalries grew between ships on a station, and challenges and counter challenges ensued. British crews also competed against foreign crews, generally Americans, as a matter of national pride.⁶¹ As well as informal racing, there were also regular organised regattas on stations, where each ship would enter various classes of boats, such as launches, whalers, skiffs, pinnaces, and cutters, in a general fleet competition which would last several days.⁶² These were taken extremely seriously, often with trophies for winners, and detailed results were recorded in ships' logs.⁶³ There was also a level of interaction with local populations, particularly in the settler colonies, with ships' racing crews competing against local crews. At the Australian Anniversary Day Regatta in Sydney, for example, some events were open to naval crews, and British crews

⁵⁹ Sport was a major pastime for all the armed forces. An examination of this for the British army can be found in Tony Mason and Eliza Riedi, *Sport and the Military: The British Armed Forces 1880-1960* (Cambridge: Cambridge University Press, 2010). For the American military, see Wanda Ellen Wakefield, *Playing to Win: Sports and the American Military, 1898-1945* (Albany: State University of the New York Press, 1997).

⁶⁰ Richard Holt, *Sport and the British: A Modern History* (Oxford: Clarendon, 1989), 203-209, 223.

⁶¹ Dunslow and Jones, *The Commission of H.M.S. Eclipse*, 90; Parker, *The Commission of H.M.S. Implacable*, 59; Callow, *The Commission of H.M.S. Royal Arthur*, 94.

⁶² Butterworth, *The Commission of H.M.S. Glory*, 83-84.

⁶³ Breaks, *The Log of H.M.S. Bonaventure*, 72.

raced each other and 'Yankee' crews. There was a large amount of local interest in these races, as shown by the reports in Australian newspapers.⁶⁴ Likewise, at the Victoria Regatta near Esquimalt, locals competed with navy and army crews, watched by holiday-makers from the shore or on launches and canoes.⁶⁵ Less frequent were sailing races, although at Malta there were regular races for the Gibraltar Cup.⁶⁶ Outside of the settler colonies, however, it appears only in Japan did local participation occur. At the annual regatta at Yokohama, for example, Japanese crews entered the sampan race.⁶⁷

Although sport was primarily between different ships of a fleet, or between the services, there were occasions where sports were played against other teams. These could be against foreign warships also present in harbour, against British nationals resident in a port, or against local populations. Against foreign naval teams, the sports competition was limited by what sports those nations played. For example, British naval teams would compete regularly against American ships, but generally only in boat racing, swimming, and track and field.⁶⁸ Similarly, when the *Bedford* was at the German port of Tsingtau, China, the crews were limited to competing at football.⁶⁹ Competition against local populations was less often limited in the same way, as the British influence permeated into sporting pursuits. Thus we see cricket being played against local populations at Corfu, Cyprus, Port Said, Alexandria, Zanzibar, Valparaiso, and Fiji.

These matches were predominantly against British settlers, but it was certainly not rare for sailors to play against local populations at ports, although these teams tended to be largely made up of Europeans.⁷⁰ Football was played against locals at Port Said, Smyrna,

⁶⁴ Callow, *The Commission of H.M.S. Royal Arthur*, 94, 97.

⁶⁵ Newton, *The Commission of H.M.S. Grafton*, 138, 144.

⁶⁶ Parker, *The Commission of H.M.S. Implacable*, 54.

⁶⁷ A sampan is a relatively flat bottomed Chinese wooden boat. Gibbs, *The Cruise of H.M.S. Grafton*, 69.

⁶⁸ *Ibid.*, 34-35, 59.

⁶⁹ Butterworth, *The Log of H.M.S. Bedford*, 102.

⁷⁰ Whiteley and Davis, *The Commission of H.M.S. Bulwark*, 21; Wheeler, *The Commission of H.M.S. Pandora*, 20, 23, 39-41; Moore, *Commission and Travels of H.M.S. Good Hope*, 49; Newton, *The Commission of H.M.S. Grafton*, 132.

Alexandria, Esquimalt, Zanzibar, and Valparaiso.⁷¹ At the gymkhana at Suda the crew of the *Implacable* had 'a most enjoyable afternoon ... the foreigners greatly delighted at being permitted to take part in the many races and sports'.⁷² At Esquimalt, crews competed against local loggers at tug-o'-war as well as football, and at King George's Sound, the crew of the *Royal Arthur* were invited to a shooting match against West Australian Artillery.⁷³ Although most sports were taken seriously, there were chances for sailors to participate in less competitive sports. At the Shanghai gymkhana for instance, sailors took part in an unusual bicycle race. Firstly, they would don fancy dress, then ride to a specified point, drink a pint of beer, then cycle back to the finish.⁷⁴ In a similar vein, at a sports day on an American ship stationed at Hong Kong, sailors partook in a pie race, an eating contest performed with hands tied.⁷⁵ Sport could also bring tragedy, however, and the log of the *Crescent* records the death of E. Case, a petty officer killed by a field gun in the naval sports in 1903.⁷⁶

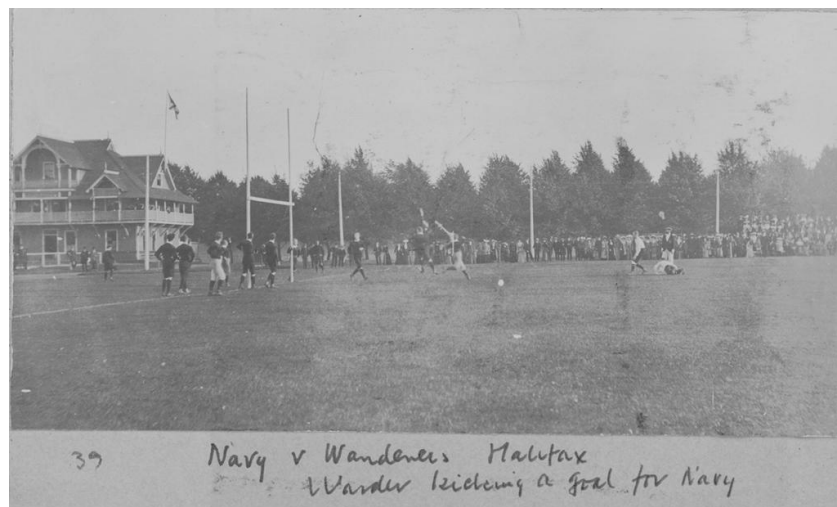


Figure 6.3: Royal Navy ships often played local teams at sport, such as this rugby game in Halifax, c.1900. NMM, ALB 10/39.

⁷¹ Wheeler, *The Commission of H.M.S. Pandora*, 39-41; Journals of Donovan C. Roe, 1911-1912, NMM, JOD/92/2; Newton, *The Commission of H.M.S. Grafton*, 90, 93, 117, 130, 132; Moore, *Commission and Travels of H.M.S. Good Hope*, 49.

⁷² Parker, *The Commission of H.M.S. Implacable*, 48.

⁷³ Newton, *The Commission of H.M.S. Grafton*, 90; Callow, *The Commission of H.M.S. Royal Arthur*, 11.

⁷⁴ Dunslow and Jones, *The Commission of H.M.S. Eclipse*, 80.

⁷⁵ Gibbs, *The Cruise of H.M.S. Grafton*, 34-35.

⁷⁶ M.E. Donoghue, *The Log of H.M.S. Crescent* (London: Westminster Press, 1907), 64.

Some sports were enjoyed solely by officers, and these included racquets, tennis, and fives.⁷⁷ Golf courses, often laid out by British officers, were also immensely popular, especially on the Mediterranean Station, allowing them opportunity to spend time with other men of their rank, while enjoying the often spectacular scenery of these coastal courses. Again, such pursuits were very competitive, and regular tournaments were held, with medals as prizes. In many cases, local men were used as caddies, reinforcing hierarchies of rank and race.⁷⁸



Figure 6.4: British naval officers playing golf in Crete. Note the use of local caddies. *Navy and Army Illustrated*, 18 February 1899.

Many of the activities enjoyed by British seamen abroad required specialised facilities. These often belonged to local sports teams, but for the servicemen stationed at larger stations such as Hong Kong and Malta there were extensive sporting facilities

⁷⁷ Journal kept by Edward Charrington, 1890-1892, Royal Naval Museum, Manuscript Collection, 1999/51/3.

⁷⁸ 'A Nine-hole Course in Crete', *Navy and Army Illustrated*, 18 February 1899.

provided for their use. Those at Hong Kong were particularly impressive. Happy Valley, as it was known, was immensely popular. Converted into a racecourse for the amusement of British residents, the log of the *Sutlej* describes it as 'one of the finest sports fields I have ever seen', with its stands, running track, and facilities for football, rugby, golf, hockey, and cricket (see Figure 6.5).⁷⁹ Such facilities allowed Hong Kong to host regular sporting fixtures, including the Hong Kong Shield for football, which included local clubs, regiments of the garrison, and teams from British ships. They were also well supported, with the log of the *Goliath* recalling that 'as many men as can be spared from the fleet' were allowed to watch the semi-final of the Shield.⁸⁰ At Malta, sports were played at the Corradino sports ground. Although the calendar included regular Army versus Navy football matches, it was the annual naval athletics sports which were the highlight of the year.⁸¹ The two days of competition attracted thousands of viewers, leaving those who could not fit into the ground to spectate from tree tops and roofs. Events included the gun crew competition, sack race, obstacle race, flat racing, and tug-o'-war, with the ship's officers the 'chief encouragers of our naval sports'.⁸²

Sporting facilities also existed at other, smaller stations. When the crew of the *Vulcan* arrived in the Platea, they found 'nothing but dense scrub', but quickly set about creating a sports ground. By 1899, there was a tennis court, two football pitches, and a cycling track made from ash. The 'Empress of India Football Cup', played at the recreation ground, was soon one of the most coveted prizes for the Mediterranean fleet.⁸³

⁷⁹ Crowe, *From Portsmouth to Peking Via Ladysmith with a Naval Brigade*, 93-94 ; Anning, Bentley, and Yexley, *The Log of H.M.S. Argonaut*, 15, 22; Gunns, *The Log of H.M.S. Sutlej*, 37.

⁸⁰ Brodie, Ray, and Yexley, *The Log of H.M.S. Goliath*, 119; Butterworth, *The Commission of H.M.S. Glory*, 50-51; Gibbs, *The Cruise of H.M.S. Grafton*, 104; Masker, 'The China Station in Other Days', 522-533.

⁸¹ Wheeler, *The Commission of H.M.S. Pandora*, 104.

⁸² Whiteley and Davis, *The Commission of H.M.S. Bulwark*, 151- 153; Tyler, *The Commission of H.M.S. Lancaster*, 42.

⁸³ *Navy and Army Illustrated*, 18 February 1899.

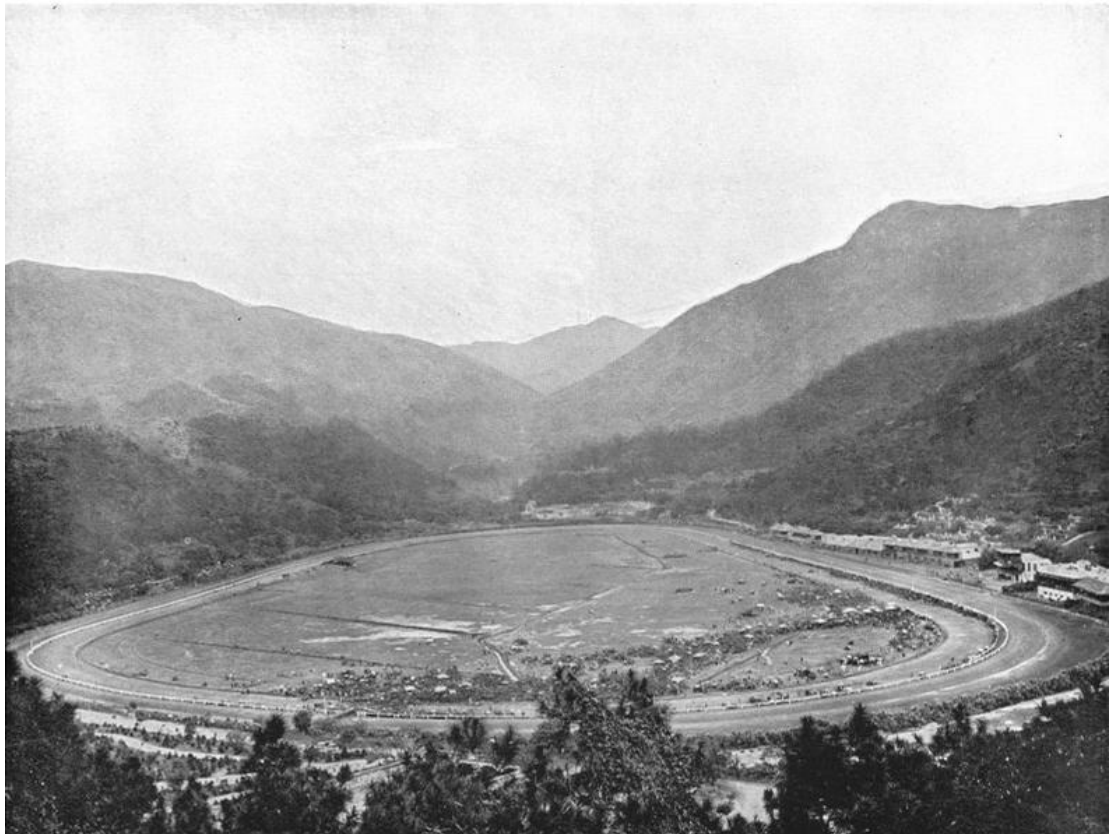


Figure 6.5: Happy Valley, 1895. From *Round the World* (London: News of the World, 1895).

Even outside these centres with organised leagues and competitions sport was taken very seriously. Indeed, such was the importance of a cricket match against the Gibraltar garrison for the team of the *Pandora* that they almost drowned in heavy swells getting from the ship to land.⁸⁴ Furthermore, all the scores for cricket, football, rugby, water polo, hockey, and shooting, whatever the venue or opponent, recorded in each ships' logs, illustrating the depth and importance of sport at naval stations (see Figure 6.6).

⁸⁴ Wheeler, *The Commission of H.M.S. Pandora*, 56-57.

MEDITERRANEAN FLEET PULLING REGATTA.					
FIRST DAY.		Argostoli, 11th September, 1906.			
BOAT AND CREW.	NO. STARTING.	FIRST.	SECOND.	THIRD.	FOURTH.
5-oared whalers and gigs...	A 10	Formidable	Queen	Irresistible	—
Racing Crew ...	B 7	Formidable	Carnarvon	—	—
4-oared whalers and gigs...	A 1	Implacable	—	—	—
Racing Crew ...	B 1		—	—	—
14-oared 32-foot cutters ...	A Nil.	—	—	—	—
Ordinary Seamen ...	B 2	Carnarvon	—	—	—
5 or 6-oared galleys or wh'l's.	A 7	Irresistible	Venerable	—	—
C.P.O.'s ...	B 7	Carnarvon	Suffolk	—	—
Pinnaces (racing crews) ...	13	Implacable	Lancaster	Diana	Bulwark
12-oared cutters (boys) }	A 2	Venerable	—	—	—
	B 5	London	Suffolk	—	—
4 or 5-oared whalers & gigs	A 8	Barham	Irresistible	Bulwark	—
Stokers ...	B 5	Suffolk	Formidable	—	—
5-oared whalers and gigs...	A 9	Irresistible	Irresistible	Implacable	—
Marines ...	B 7	Formidable	London	—	—
14-oared 32-ft. cutters ...	A 2	Suffolk	—	—	—
Racing Crew ...	B 3	Carnarvon	—	—	—
12-oared cutters ...	A 2	Carnarvon	—	—	—
Ordinary Seamen ...	B 7	Suffolk	Bulwark	—	—
5 or 6-oared galleys & wh'l's.	A 10	Implacable	Bulwark	Irresistible	—
Daymen ...	B 5	Lancaster	London	—	—
A.—Foreign built boats.			B.—English built boats.		

Figure 6.6: Nearly all sports results were recorded in ship' logs. From the cover of W.T. Cole, *The Log of H.M.S. Carnarvon, Mediterranean Station 1905–1907*.

Leisure

Sport was a prominent method of integration in port life, at least in daylight hours, but was by no means the only way that a ship's company would interact with other members of the maritime community. Finding themselves in a strange port, it is unsurprising that many sought the company of fellow Britons. Often, other British ships would invite sailors aboard for smoking concerts and supper, offering the chance to fraternise with old friends.⁸⁵ Sailors could also guarantee British company by visiting spaces designated for naval men, whether they were naval canteens, Junior Officers' Clubs, United Services Clubs, or sailors' homes, depending on their rank and the station they were at (see Figure 6.7). In general, these offered refreshments, billiards, bridge, reading materials, concerts, and singing, as well as sleeping quarters.⁸⁶ Some, such as those on the Mediterranean Station also had

⁸⁵ Brodie, Ray, and Yexley, *The Log of H.M.S. Goliath*, 62, 74; Tyler, *The Commission of H.M.S. Lancaster*, 42.

⁸⁶ Dougherty, *The East Station*, 27, 130; Callow, *The Commission of H.M.S. Royal Arthur*, 12-16; Journals of Donovan C. Roe, 1911-1912, NMM, JOD/92/2.

fives, racquet, and tennis courts, which were immensely popular with junior officers.⁸⁷ Where a station had a garrison, sailors would frequently visit to enjoy a meal and beer, smoking concert, or be guided round the sights by the soldiers.⁸⁸ There were also joint recreation rooms for services, which offered similar facilities to the purely naval ones.⁸⁹ British service personnel also patronised certain public houses, hotels, and clubs, such as the Central Hotel in Hong Kong, the Prince of Wales Hotel in Colombo, or the George and Dragon at Corfu, where they could find company, cheap food and beer, and spend time singing.⁹⁰ Again, who mixed in these meeting places would be a question of rank, with the officers and bluejackets largely frequenting different establishments. At some stations, as well as mixing with Britons, seamen could pick up mails from home, giving them a connection with people and events back home.⁹¹

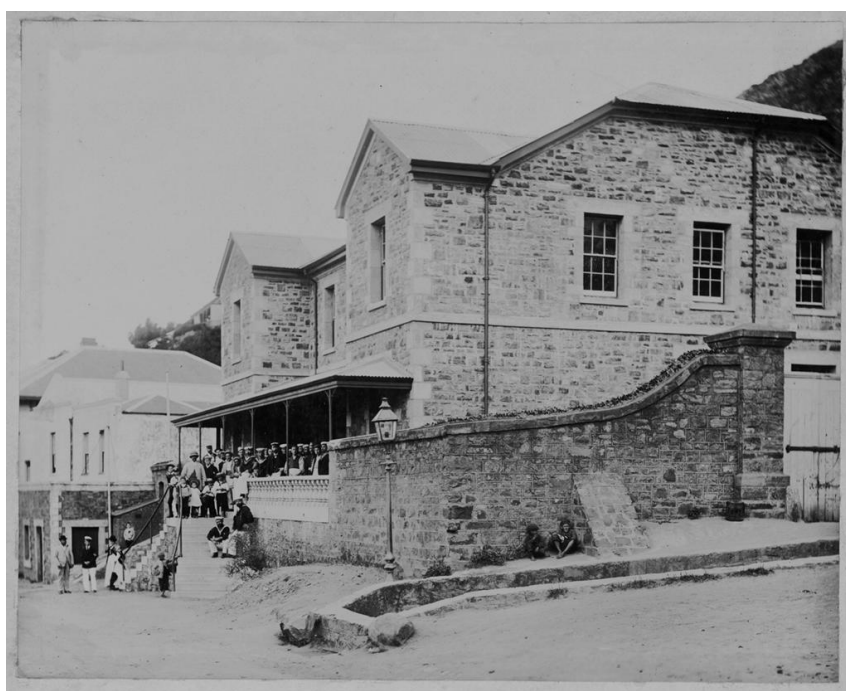


Figure 6.7: The Sailors' Home in Simon's Town, c.1900. NMM ALB 26/130.

⁸⁷ Journal kept by Edward Charrington, 1890-1892, Royal Naval Museum, Manuscript Collection, 1999/51/3.

⁸⁸ Watts, *The Commission of H.M.S. Retribution*, 131; Brodie, Ray, and Yexley, *The Log of H.M.S. Goliath*, 130; Journals of Donovan C. Roe, 1911-1912, NMM, JOD/92/2; Whiteley and Davis, *The Commission of H.M.S. Bulwark*, 5.

⁸⁹ Dougherty, *The East Station*, 22.

⁹⁰ Gunns, *The Log of H.M.S. Sutlej*, 23, 34; Brown, *The Log of H.M.S. Repulse*, 27.

⁹¹ Journal kept by Edward Charrington, 1894-1898, Royal Naval Museum, Manuscript Collection, 1999/51/5.

At stations in the settler colonies, there were similar levels of interactions and communal feelings between sailors and the populations at the ports. Although these populations were not strictly British, they often felt a strong familial bond between themselves and Britain. Interactions often occurred through visitors coming aboard warships in harbour, a phenomenon particularly prominent on the Australia Station (see Figure 6.8). Here ships' arrivals were greeted with pride and celebration, and visitors not only came to marvel at the technology, but also to reinforce the feeling of the fraternity between the metropole and the wider empire. Indeed, these naval men were 'flying the flag' for the navy, Britain, and the empire abroad. When the *Nelson* was stationed at Melbourne, it attracted around 3,000 visitors in one day, and at Wellington it was again the centre of attention with thousands visiting during its stay.⁹² The *Royal Arthur* attracted visitors from hundreds of miles away, which gave the crew opportunity to converse with woodsmen, cattlemen, and miners, many of whom had been born in England.⁹³ There appears to have been a unique bond on these stations, and its log notes that in each port it visited the '*Nelson* did much to bind closer the ties that unite Australia to the mother country'.⁹⁴ The log of the *Encounter* also recalls that on the Australia Station the 'spirit of brotherhood strongly manifested at each and every port we called at'.⁹⁵

⁹² John S. Shearston, *H.M.S. Nelson: An Account of Her First Commission on the Australian Station* (Sydney: Thomas Richards, 1885), 22, 24-25.

⁹³ Callow, *The Commission of H.M.S. Royal Arthur*, 22-23.

⁹⁴ Shearston, *H.M.S. Nelson*, 26.

⁹⁵ Fowler, *The Log of H.M.S. Encounter*, 125.



Figure 6.8: Visitors aboard H.M.S. *New Zealand* in Wellington, 1913. Sir George Grey Special Collections, Auckland Libraries, AWNS-19130501-2-2.

This sense of kinship was sustained by a reciprocal relationship between locals and the company of the ship on land. Residents of the Australia Station in particular went out their way to entertain the seamen. In Wellington, for example, ‘socially, here as elsewhere, the “Nelsons” were everywhere welcomed – nay, even sought after – both officers and men sharing alike in the general goodwill’.⁹⁶ As a result of this, it became ‘well known that New Zealanders are Big Navy people’.⁹⁷ In Sydney, residents ‘found pleasant exercise in entertaining their welcome friends’.⁹⁸ These entertainments included balls, dinners, and concerts, which were often held by residents ashore, then reciprocated by the ships’ crew aboard.⁹⁹ Relationships with the ‘friends on shore’ were also cemented through the ship’s

⁹⁶ Shearston, *H.M.S. Nelson*, 23.

⁹⁷ Fowler, *The Log of H.M.S. Encounter*, 71.

⁹⁸ Shearston, *H.M.S. Nelson*, 270.

⁹⁹ Callow, *The Commission of H.M.S. Royal Arthur*, 65; Shearston, *H.M.S. Nelson*, 23-26, 270.

company becoming part of community life. At Sydney and Auckland the ships' bands would play weekly in Botanical Gardens whenever they were in town.¹⁰⁰

Similar occurrences can also be seen on other stations with westernised populations. Often, these interactions came through the ships' theatrical companies, which entertained local populaces (see Figure 6.10). At Malta the *Bulwark's* amateur theatre company put on a show for a few nights in Royal Clarence Theatre, and when the *Swallow* stopped at Port Stanley it gave islanders a theatrical performance.¹⁰¹ A benefit performance in St Helena was so popular that people were turned away from the door.¹⁰² The seamen would also join in special occasions if they were in port; at Melbourne the *Royal Arthur* marked the King's birthday along with colonial troops, sailors, and dignitaries in front of lots of spectators.¹⁰³ The *Bonaventure* likewise joined in the concerts and celebrations for Victoria Day and Dominion Day in Victoria.¹⁰⁴



Figure 6.9: The theatre of the Royal Navy Canteen, Malta. *Navy and Army Illustrated*, 11 March, 1899.

¹⁰⁰ Shearston, *H.M.S. Nelson*, 23, 26, 32.

¹⁰¹ Whiteley and Davis, *The Commission of H.M.S. Bulwark*, 79; Noble, *'Tween Decks in the Seventies*, 229.

¹⁰² Journal kept by Edward Charrington, 1894-1898, Royal Naval Museum, Manuscript Collection, 1999/51/5.

¹⁰³ Callow, *The Commission of H.M.S. Royal Arthur*, 128.

¹⁰⁴ Breaks, *The Log of H.M.S. Bonaventure*, 27-28.

UNDER THE PATRONAGE
OF
Vice Admiral SIR A. L. WYNSLOE, K.C.B. &c. & HIS HONOUR THE COMMISSIONER of the MARINE,

H.M.S. "MONMOUTH"
VARIETY PARTY

AT

THE QUEEN'S HALL,

LIU KUNG TAO

IN AID OF

THE NAVY EMPLOYMENT AGENCY

ON NIGHTS OF

8TH, 9TH & 10TH JUNE,

COMMENCING EACH NIGHT AT 8 o'clock.

The Management will present

A MUSICAL COMEDY (IN TWO ACTS)

ENTITLED

"A STRETCH OFF THE LAND"

PRECEDED BY

A

GRAND VARIETY ENTERTAINMENT

PRICES OF ADMISSION

	JUNE	
8 th and 9 th	\$1, 50 cents, 50 cents
10 th	\$2, \$1, 50 cents








Figure 6.10: An advert for a theatrical performance by British sailors on the China Station, c.1900. NMM, ALB 10.

Just as the crews of different British ships would socialise and explore stations together, if a foreign man-of-war was in port their crews often joined British sailors in activities. On occasion British ships would be visited by high-ranking naval officers: at Yokohama the *Goliath* attracted visits from Japanese and American Admirals, and at Wei-Hei-Wei a ball on board the *Glory* was attended by the wife of the American rear admiral.¹⁰⁵ These visits were not limited to just the top ranks, though, and often sailors from foreign vessels were invited to celebrate special occasions on board British warships. At Port-of-Spain, Christmas dinner was shared with Italian sailors, at Esquimalt it was Americans, and at Malta Russian, Greek, and Italian officers came aboard to celebrate New Year's Eve.¹⁰⁶ Invitations for foreign sailors to come aboard British warships were not limited to special occasions, but appear to have occurred almost every time British and foreign naval vessels were in port together.¹⁰⁷ Nor, perhaps surprisingly, were they reserved for allies of Britain. Indeed, even with war looming on the horizon, German sailors and marines visited a British warship at Tsingtau.¹⁰⁸ This suggests that the tensions of European high politics were felt less keenly in these alien environments, and instead British sailors were glad to have the company of what they saw as fellow westerners.¹⁰⁹

These interactions were not limited to ships, but extended into the port itself. Here, British seamen would integrate with westerners of a similar rank. Often, officers would attend official banquets in town, such as that at Malta when a French warship visited

¹⁰⁵ Brodie, Ray, and Yexley, *The Log of H.M.S. Goliath*, 61; Butterworth, *The Commission of H.M.S. Glory*, 88-89.

¹⁰⁶ Watts, *The Commission of H.M.S. Retribution*, 111-116; Breaks, *The Log of H.M.S. Bonaventure*, 47; Whiteley and Davis, *The Commission of H.M.S. Bulwark*, 120.

¹⁰⁷ Butterworth, *The Log of H.M.S. Bedford*, 119; Brodie, Ray, and Yexley, *The Log of H.M.S. Goliath*, 80, 86; Mitchell, *The Commission of H.M.S. Renown*, 31; Journals of Donovan C. Roe, 1911-1912, NMM, JOD/92/2; Breaks, *The Log of H.M.S. Bonaventure*, 93.

¹⁰⁸ Butterworth, *The Log of H.M.S. Bedford*, 102. In fact, there was no animosity between British and German sailors at any level before August 1914, although relations with Russian sailors were often bad.

¹⁰⁹ Jonathan Hyslop makes a similar point about a white imperial working class, which largely ignored national identities, but instead identified themselves against the 'othered' non-white workers. See Jonathan Hyslop, 'The Imperial Working Class Makes Itself 'White': White Labourism in Britain, Australia, and South Africa before the First World War', *Journal of Historical Sociology*, 12, no. 4 (1999), 398-421.

for the first time that century.¹¹⁰ Bluejackets similarly embraced encounters with foreign naval men, and when the Japanese visited Malta, they were entertained by the crew of the *Implacable* at the Royal Naval Canteen, and also at a smoking concert at the Clarence Theatre. The log recalls that 'it was pleasant to see the jolly tars fraternising with their gallant allies, and many warm friendships were thus cemented. On their departure from Malta, the hands ... cheered the little Japs'.¹¹¹ A similar feeling of fellowship was manifested when American ships arrived at Esquimalt – in the evenings all over town 'groups of English and American men-o'-war's-men could be seen fraternising sociably together'. While the officers enjoyed dinner, the ratings could be found singing and enjoying refreshments.¹¹²

As well as a high level of social interaction, an overriding sense of fraternity amongst the crews of warships of different nationalities on foreign stations was manifested in other ways. On foreign stations the dressing of a ship – a sign of celebration – was extended to include foreign celebrations if they were in port together. For example, British ships on the China Station dressed in honour of birthdays of the German Emperor, the Chinese Emperor, the King of Italy, and the Queen of Denmark.¹¹³ Royal Navy ships also flew an American ensign for Independence Day. In return, foreign warships joined in celebrations for Queen Victoria's diamond jubilee, and for coronation day, the Chinese warships at Woosung had 'Long live H.M. King Edward VII' stretched between their funnels.¹¹⁴ This communal feeling was also manifested in less celebratory matters, and was especially prominent when a sailor died in port. It was common practice that the funeral of a seaman of any nationality was attended by representatives from every warship in harbour. Thus, forty British seamen were at the funeral of the captain of the German

¹¹⁰ St Clair, *Three Years with the Mediterranean Fleet*, 81.

¹¹¹ Parker, *The Commission of H.M.S. Implacable*, 27.

¹¹² Newton, *The Commission of H.M.S. Grafton*, 172.

¹¹³ Dunslow and Jones, *The Commission of H.M.S. Eclipse*, 45-47.

¹¹⁴ Gibbs, *The Cruise of H.M.S. Grafton*, 58; Brodie, Ray, and Yexley, *The Log of H.M.S. Goliath*, 96.

gunboat *Tiger* in Amoy, as well as Italian, Japanese, and American naval men.¹¹⁵ This sense of community is also shown by the actions of the crew of the *Goliath* at Yokohama, when they helped Japanese firemen to tackle a blaze at the Oriental Hotel.¹¹⁶ Of course, fraternity was most keenly felt between British warships. A memorandum circulated after the *Bonaventure* was towed off an 'unknown rock' praised the actions of other British vessels. It argued that such deeds showed 'that a good wholesome spirit for work and feeling of comradeship exists in the China Station'.¹¹⁷

This fraternising amongst an international naval community suggests that British seamen saw themselves as something more than just British, but as part of wider, interconnected communities. Indeed, through these examples it is possible to see that British seamen abroad had complex identities which changed depending on context. As mobile imperial subjects, they identified with other Britons abroad, such as expatriate communities, soldiers, and imperial administrators, just as their shared heritage helped them identify themselves with the white populations in the settler colonies. That they spent extensive time with European, American, and Japanese sailors suggests that not only were European tensions not borne out, at least as strongly, in the wider world, but also that there was a strong naval identity which transcended nationalities.

Exploring the Station

Although, as described above, many of the same interactions occurred between sailors and other westerners across naval coaling stations worldwide, each station also offered opportunities for sailors to fraternise while exploring its unique attractions. The ability to explore at length the areas surrounding British coaling stations was distinctive to the

¹¹⁵ Breaks, *The Log of H.M.S. Bonaventure*, 99.

¹¹⁶ Brodie, Ray, and Yexley, *The Log of H.M.S. Goliath*, 59.

¹¹⁷ The memorandum is included in the Journal kept by Edward Charrington, 1899-1902, Royal Naval Museum, Manuscript Collection, 1999/51/7.

sailors' experience, and they appear to have used at least some of this time to experience the cultural attractions, often with other westerners. These interactions not only allowed new associations between different groups at stations, but also helped to reinforce old friendships, which had been made on previous visits or at other stations. As such, these connections linked coaling stations across the world.

Stations became synonymous with certain attractions, whether they were religious, ancient, or royal, and there was often a loose itinerary visitors would follow. Furthermore, if they were at a station at the right time of year, crews could attend the religious, cultural and sporting festivals which some stations were famous for. Such an itinerary and cultural calendar suggests a body of knowledge that existed at these stations, and that was disseminated across sailors of all nationalities. That these itineraries, and indeed the experiences themselves, were shared not only between British sailors, but also by residents, soldiers, and naval men of differing nationalities suggests such activities strengthened the sense of a western maritime community at these stations, and, in turn, that these relationships were shaped by the stations themselves. These shared experiences were key to the 'third culture' which emerged across these stations.¹¹⁸

Visits to these attractions were generally group affairs. Usually these were made with other British sailors, but, just as British sailors joined their foreign counterparts in the sporting and social activities, they also accompanied other naval men as tourists. At Sydney, for example, some of the officers of the *Challenger* travelled to the Blue Mountains from Sydney with German officers.¹¹⁹ Similarly, at St Helena sailors explored the island with the crew of a French warship, seemingly finding it a pleasant experience: 'we common Jacks found the Frenchmen splendid fellows, ready to hob-nob with us to our hearts

¹¹⁸ Lucy Lippard, cited in Cresswell, *Place: A Short Introduction*, 49; King, *Colonial Urban Development: Culture, Social Power and Environment*, 58-59. This was not strictly 'colonial' as described in the citation, as it contained those from outside the British Empire.

¹¹⁹ Spry, *The Cruise of Her Majesty's Ship Challenger*, 125-130.

content'.¹²⁰ These visits indicate an encompassing enthusiasm from sailors for the exploration of local sights at these stations. Although it is not within the scope of this chapter to explore the unique attractions of each naval station, it seeks to provide some examples that demonstrate the extent of interests manifested by sailors.

A fascination with ancient oriental civilisations meant that those on the China Station would often take the opportunity to visit the ancient temples and other religious sites. These remnants of past civilisations were visited throughout the station: Hong Kong and Shanghai had many famous temples, and Nagasaki was well known amongst visitors for its many thousands of Buddhas.¹²¹ At Kobe, sailors would make a journey to Kyoto, where they would be shown around the Buddhist Temples, Mikado Palace, and Shinto shrine.¹²² Interest in the Far East also extended to its contemporary culture. The crew of the *Sutlej* were treated to a garden party at the Kyoto Nanko temple, where they witnessed wrestling, ju-jitsu, sword dancing, and fencing, and at Osaka they were entertained by geisha girls and Japanese theatre.¹²³ As the author of the log, G.H. Gunns, is not included in the accompanying list of officers, it seems that this was a party that included even lower ranks of the crew. British sailors also experienced traditional Hong Kong musical theatre, although few appear to have been impressed, one suggesting 'melody there is none'.¹²⁴

Sailors on the Mediterranean Station also sought out religious and historic buildings and monuments, particularly in Malta. The log of the *Implacable* suggests that Valetta's 'chief features may be summed up in four words – steps, holy-stones, bells, and goats'.¹²⁵ The churches, and especially the Chapel of Bones, were frequently visited and

¹²⁰ Noble, *'Tween Decks in the Seventies*, 165; Dunslow and Jones, *The Commission of H.M.S. Eclipse*, 45-47.

¹²¹ Anning, Bentley, and Yexley, *The Log of H.M.S. Argonaut*, 25, Butterworth, *The Commission of H.M.S. Glory*, 8-9.

¹²² Breaks, *The Log of H.M.S. Bonaventure*, 85.

¹²³ Gunns, *The Log of H.M.S. Sutlej*, 113, 114, 119.

¹²⁴ Spry, *The Cruise of Her Majesty's Ship Challenger*, 193-201.

¹²⁵ Parker, *The Commission of H.M.S. Implacable*, 7.

processions during religious festivals generally added colour to a stay there.¹²⁶ Of particular interest was the Citta Vecchia, the ancient capital just a few miles from Valetta. Here were the cathedral, catacombs, and a spectacular view of the whole island.¹²⁷ Stopping to coal at Piraeus allowed visits to Athens, where ships' crews could immerse themselves in ancient history, visiting ancient monuments such as the Acropolis, as well as the museum.¹²⁸

Where the port itself was uninteresting or there was a major city or attractions further afield, sailors often left the confines of the station, frequently in large groups, and used whatever local transport was available to reach them. Especially after 1890, this often involved a train, including between Woosung and Shanghai, Kobe and Osaka, Piraeus and Athens, Callao and Lima, and Simon's Town and Cape Town.¹²⁹ Similarly, trams connected Esquimalt with Victoria, and Yokohama with Tokyo.¹³⁰ On the Australian Station, naval men were given free railway passes, suggesting that they were being actively encouraged to visit and explore local towns and cities.¹³¹ At Hong Kong, a cable tramway would take visitors to a view of the highlands and islands: 'one of the finest in the world'.¹³² Likewise, if they were granted enough leave while at Yokohama, sailors could catch the train to Fukuyama (Mount Fuji) where they could feel the tremors of earthquakes.¹³³ Sailors enjoying leave in Japan would explore the countryside on bikes, often in large groups. The log of the *Grafton* recalls how 70 or 80 bluejackets explored the area surrounding Yokohama by bike, many for the first time, and caused chaos by hitting walls and colliding with rickshaws.¹³⁴ Crew members would also experiment with local methods of transport. In Colombo and Durban, for

¹²⁶ Journals of Donovan C. Roe, 1911-1912, NMM, JOD/92/2; Brown, *The Log of H.M.S. Repulse*, 16.

¹²⁷ Parker, *The Commission of H.M.S. Implacable*, 9.

¹²⁸ Ibid., 36; Wheeler, *The Commission of H.M.S. Pandora*, 25-28.

¹²⁹ Gunns, *The Log of H.M.S. Sutlej*, 140; Butterworth, *The Commission of H.M.S. Glory*, 15; Wheeler, *The Commission of H.M.S. Pandora*, 25-28; Breaks, *The Log of H.M.S. Bonaventure*, 10; Journals of Donovan C. Roe, 1911-1912, NMM, JOD/92/2.

¹³⁰ Newton, *The Commission of H.M.S. Grafton*, 19; Brodie, Ray, and Yexley, *The Log of H.M.S. Goliath*, 103.

¹³¹ Shearston, *H.M.S. Nelson*.

¹³² Butterworth, *The Commission of H.M.S. Glory*, 5-6.

¹³³ Ibid., 24.

¹³⁴ Gibbs, *The Cruise of H.M.S. Grafton*, 53-54; Butterworth, *The Commission of H.M.S. Glory*, 14.

example, men would take a rickshaw.¹³⁵ In Osaka, they used jinrikisha, the main mode of transport there, which consisted of a two-wheeled vehicle pulled by two men, or used sampans, traditional Japanese boats (see Figure 6.11).¹³⁶



Figure 6.11: Using local transport on the China Station c.1900. NMM, ALB 10/285.

Landscape

As well as the towns and cities, the natural surroundings of a station also provided areas to explore, study, and hunt in, and seamen took these opportunities at almost all stations. This fascination with foreign landscapes shown by sailors was something of a naval tradition going back centuries. Although this most famously included observations made by those on official survey ships, explorers, and surveyors, there was a rich tradition of

¹³⁵ Gunns, *The Log of H.M.S. Sutlej*, 23; Journals of Donovan C. Roe, 1911-1912, NMM, JOD/92/2.

¹³⁶ Butterworth, *The Commission of H.M.S. Glory*, 15.

ordinary crew members recording the landscapes of stations. The interest sailors had in these places was 'not simply [in] the global reach of empire, but also the very specific sites constituted as ports of call'.¹³⁷ Thus they were keen to explore beyond the shoreline, and into the hinterland.

Often these natural spaces outside of the ports would be walked to. To avoid the 'rather uninteresting' Jamestown, sailors at St Helena would trek into the countryside, where they enjoyed the large variety of plants and breeze of the mountains.¹³⁸ Also mountainous, the Seychelles possessed extraordinary vegetation, and was, according to Donovan C. Roe, 'one of the prettiest places we have visited on the station'.¹³⁹ Less extreme, but no less beautiful, were the surrounds of Hobart, which possessed 'lovely hills, covered with gardens and orchards'.¹⁴⁰ In the same way, Zanzibar was celebrated for its impressive flowers, and Simon's Town was particularly noted for its sunsets and Table Mountain.¹⁴¹ The environment of a station was also linked to a sailor's wellbeing, and thus, although Ascension Island 'may be dull' it was 'reasonably healthy'.¹⁴²

It was not just the striking scenery surrounding many of the stations that fascinated seamen. Further evidence of the interest of ships companies' in the exotic was found in textual and visual recordings of the local wildlife, and in particular the many references to the more extraordinary animals, such as the whales at Simon's Town or the sharks at Fiji and Suez.¹⁴³ Stations such as Cape Coast Castle, offered ample opportunity to see wild animals like crocodiles, lions, and zebra, as well as natural events such as turtles laying their eggs on a beach. Similarly, at the French Station at Cape Lopez, Gabon, the sailors viewed

¹³⁷ Felix Driver and L. Martins, 'John Septimus Roe and the Art of Navigation'.

¹³⁸ Journals of Donovan C. Roe, 1911-1912, NMM, JOD/92/2.

¹³⁹ Ibid.

¹⁴⁰ Shearston, *H.M.S. Nelson*, 22.

¹⁴¹ Journals of Donovan C. Roe, 1911-1912, NMM, JOD/92/2.

¹⁴² Journal kept by Edward Charrington, 1894-1898, Royal Naval Museum, Manuscript Collection, 1999/51/5.

¹⁴³ Journals of Donovan C. Roe, 1911-1912, NMM, JOD/92/2; Callow, *The Commission of H.M.S. Royal Arthur*, 74-76; Furneaux, *The Log of H.M.S. Diana*, 94-95.

elephants, buffalo, parrots, and gorillas.¹⁴⁴ Those given leave at Colombo would often see elephants, and Colon in Panama was infested by alligators (see Figure 6.12).¹⁴⁵ Within Beacon Hill Park at Esquimalt there were two bear pits, 'which contain five bears of the grisly species', which could be viewed from a safe distance.¹⁴⁶

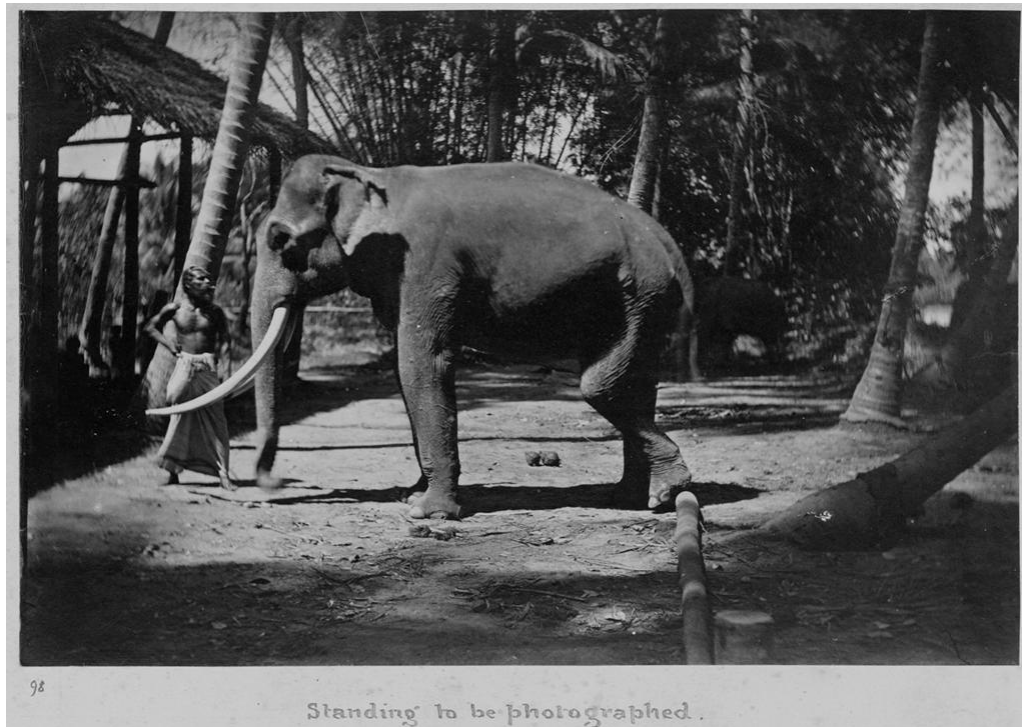


Figure 6.12: An elephant photographed in Ceylon, c.1900. NMM, ALB 22/98.

Sailors did not always remain as passive spectators of the wildlife, and hunting was a major pastime, especially amongst the officer class. Hunting was a 'central part of imperial culture' at this time, being a 'ritual of prestige and dominance' for an 'imperial and largely masculine elite'. As well as being a statement of manliness, it was also a metaphor for British global dominance. Moreover, it was linked with romantic ideas of adventure,

¹⁴⁴ Journal kept by Edward Charrington, 1894-1898, Royal Naval Museum, Manuscript Collection, 1999/51/5. The journal later reports that a hunting trip killed three buffalos.

¹⁴⁵ Crowe, *From Portsmouth to Peking Via Ladysmith with a Naval Brigade*, 90; Watts, *The Commission of H.M.S. Retribution, 1902-1904*, 163.

¹⁴⁶ Breaks, *The Log of H.M.S. Bonaventure*, 15.

and gave officers a chance to immerse themselves in 'genuine wilderness'.¹⁴⁷ At Trincomalee, officers of the *Perseus* hunted deer, jackal, wild boars, and cheetahs, and encountered lizards, centipedes and snakes.¹⁴⁸ In Port Mahon, 'sport [was] fairly good', and officers hunted partridges, rabbits, woodcock, and snipe.¹⁴⁹ Fishing was also popular, at Port Hamilton the crew of the *Glory* enjoyed fishing, oystering, camping and hunting for game, and the *Grafton's* men fished at Esquimalt.¹⁵⁰

As well as hunting, many seamen collected exotic animals and kept them aboard. Although some were collected for specific scientific missions, and some to sell to zoos and pet shops, many were simply adopted as pets and mascots. Buying them from local traders, the animals would become a part of the shipboard life, and were often then distributed amongst the fleet at the end of its commission.¹⁵¹ This helped form a sense identity and continuation at the station, and also suggests a strong sense of community amongst British naval ships on stations together. While for some, pets merely helped pass time at sea, many returned to Britain with exotic animals, thus reinforcing the domestic connection between the empire and the exotic.

The most common of these pets were exotic birds, which could easily be taken home with the sailors after the commission.¹⁵² The log of the *Implacable* records that two to three hundred birds were purchased at Malta, the *Bonaventure* adopted 104 canaries, a parrot, and five parakeets, and the *Encounter* brought home over fifty parrots.¹⁵³ Also common, depending on the stations visited, were monkeys, dogs, and cats.¹⁵⁴ A more

¹⁴⁷ John M. MacKenzie, *The Empire of Nature: Hunting, Conservation and British Imperialism* (Manchester: Manchester University Press, 1988), 22, 26, 37, 46, 50.

¹⁴⁸ Reeve, *The Commission of H.M.S. Perseus*, 39.

¹⁴⁹ Journal kept by Edward Charrington, 1890-1892, Royal Naval Museum, Manuscript Collection, 1999/51/3.

¹⁵⁰ Butterworth, *The Commission of H.M.S. Glory*, 43-44; Newton, *The Commission of H.M.S. Grafton*, 35.

¹⁵¹ Gibbs, *The Cruise of H.M.S. Grafton*, 140.

¹⁵² Dougherty, *The East Station*, 19.

¹⁵³ Breaks, *The Log of H.M.S. Bonaventure*, 118; Parker, *The Commission of H.M.S. Implacable*, 104; Fowler, *The Log of H.M.S. Encounter*, 118.

¹⁵⁴ Wheeler, *The Commission of H.M.S. Pandora*, 54.

bizarre but relatively common pet was the mongoose, which was ideal for catching the cockroaches and rats on board.¹⁵⁵ Surprisingly, these were not the strangest animals taken aboard; others included donkeys, squirrels, hawks, and eagles.¹⁵⁶ Some stations were synonymous with animals. In these cases, these mascots were clearly more than just company, but also a powerful connection to the station. At Esquimalt, it was common to adopt a black bear cub.¹⁵⁷ Malta was popular for adopting goats, an animal it was synonymous with.¹⁵⁸ Similarly, in the Falklands, one ship adopted penguins as pets.¹⁵⁹

This contact with the hinterlands and wildlife at coaling stations show an enduring fascination amongst naval men with stations' landscapes. This interest is another example of the interactions that took place at the stations, and the records, images, and animals that returned with the sailors added to metropolitan ideas about the empire. That these experiences were often shared with other members of the maritime community found at British coaling stations both reinforced these connections and crafted a unique character at each station, as these activities defined the experience of a particular station, and therefore the nature of the maritime community found there.

¹⁵⁵ Noble, *'Tween Decks in the Seventies*, 92-93.

¹⁵⁶ Parker, *The Commission of H.M.S. Implacable*, 104; Newton, *The Commission of H.M.S. Grafton*, 135, 201.

¹⁵⁷ Newton, *The Commission of H.M.S. Grafton*, 91.

¹⁵⁸ Many servicemen referred to the Maltese as goats. See Brown, *The Log of H.M.S. Repulse*, 6.

¹⁵⁹ Noble, *'Tween Decks in the Seventies*, 229.



Figure 6.13: A Venezuelan deer adopted by several British sailors, c.1900. NMM ALB 10/81.

Prostitutes and Alcohol

Absent from published accounts of sailors at coaling stations, in order to preserve a wholesome image of the navy, were the two most predictable pastimes for unsupervised single men abroad, vice, and the abuse of alcohol. Seen as part of catering for a sailor's needs, these activities were widespread in stations.¹⁶⁰ Both of these had an effect on the transient maritime communities. Alcohol was a key part of the social element of station life, and was often invaluable in the integration of sailors into a wider community. Although alcohol often caused bar brawls and other altercations, the widespread use of prostitutes

¹⁶⁰ Philip Howell, *Geographies of Regulation: Policing Prostitution in Nineteenth-Century Britain and the Empire* (Cambridge: Cambridge University Press, 2009), 179.

at the majority of stations, combined with the transient nature of the communities present at them, caused far more damage through the proliferation of venereal disease.

The almost complete omission of these activities in the records published by Westminster Press, which make up the bulk of the surviving evidence, is not surprising. Not only did these logs portray sailors as the moral guardians of empire but also only included those ships whose commissions had been 'happy'.¹⁶¹ Despite these omissions, evidence for the widespread nature of these pastimes can be found through other sources. The existence of much of this evidence shows that these pastimes were seen as physically and morally destructive, both to naval personnel and to local populations.

The use of alcohol by naval men was widespread, although there were sailors who were part of the temperance movement. Indeed, alcohol was officially sanctioned through the daily rum ration, and was used as an incentive by some captains to achieve higher coaling rates.¹⁶² Furthermore, ships' logs make frequent references to men enjoying a beer at local naval clubs, or while fraternising with garrison soldiers in barracks. It is noticeable how few mentions of excessive drinking there are however.¹⁶³ Although alcohol often caused bar brawls amongst Royal Naval sailors, it was not on the scale of the U.S. Navy, which, in 1909 had restricted shore leave because 'the riots in Rio and Auckland were not forgotten, nor was the Melbourne orgy'.¹⁶⁴ Perhaps this reflects the fact that the Royal Navy was more established abroad at this point, and that US sailors were smaller in number and relatively new to stations outside their homeland. The towns adjacent to coaling stations offer evidence of more excessive consumption, however. Valetta in Malta, for example, was well known a favourite of bluejackets where 'his requirements are catered for on a somewhat lavish scale', and a sailor's pain from coaling could be drowned

¹⁶¹ Within the text at the end of each book in the series, this fact is explicitly stated.

¹⁶² McKee, *Sober Men and True*, 120-122.

¹⁶³ See, amongst others, Watts, *The Commission of H.M.S. Retribution*, 17-19; Dougherty, *The East Station*, 22.

¹⁶⁴ Robert A. Hart, *The Great White Fleet*, 220.

in drink.¹⁶⁵ Local traders gave their public houses anglicised or naval names, such as *Flagship*, *British Flag*, *British Crown*, or after naval ships, and provided British beer, cheap lodging, and the opportunity to drink with army men.¹⁶⁶ Although Malta was well known for its hospitality, most coaling stations offered ample opportunity for refreshment. Many of those who visited Simon's Town would take travel to Cape Town by stagecoach or by railway after 1890, ostensibly to drink.¹⁶⁷ When sailors did over-consume, and were sick in their cabins, they could expect to be punished on board.¹⁶⁸ If caught by local authorities, they could expect double the punishment. Drunken sailors caught in Coquimbo, Chile, for example, were made to sweep local streets at sword-point in the morning, and were then fined and punished when they returned aboard.¹⁶⁹

At some stations, especially those with little else in way of entertainment, alcohol consumption was seen as a problem, but these concerns were rarely aired.¹⁷⁰ It is therefore difficult to assess how acute the problem of over-consumption was, as most logs and diaries fail to mention all but the most interesting anecdotes. Furthermore, official health records only show when it resulted in a visit to the sick bay. What they do show, however, is that 'Poisoning (by alcohol)' was seen as serious enough to be given its own subheading in annual health reports, but the statistics suggest that there were relatively few cases. In 1903, for example, in the whole of the navy afloat, there were only 88 cases, a rate of 0.85 personnel in 1000, and of these just one was invalided, and two died.¹⁷¹ Perhaps for this reason, despite much evidence of heavy drinking, the Admiralty do not appear to have had much concern about the practice.¹⁷² Indeed, the use of alcohol not only provided the

¹⁶⁵ Anning, Bentley, and Yexley, *The Log of H.M.S. Argonaut*, 8.

¹⁶⁶ Brown, *The Log of H.M.S. Repulse*, 16; Bonnici and Cassar, *A Century of the Royal Navy at Malta*, 26-32.

¹⁶⁷ Semmes, *The Confederate Raider Alabama*, 286; Knox and Coetzee, *Victorian Life at the Cape*, 32.

¹⁶⁸ Journals of Donovan C. Roe, 1911-1912, NMM, JOD/92/2.

¹⁶⁹ Newton, *The Commission of H.M.S. Grafton*, 12-13.

¹⁷⁰ Semmes, *The Confederate Raider Alabama*, 320-335.

¹⁷¹ British Parliamentary Papers, 1904 (320) *Navy (Health) for the Year 1903*.

¹⁷² Brown, *The Log of H.M.S. Repulse*, 16.

seamen with an outlet for the frustrations of life at sea, but also lubricated the social interactions with other groups met at stations. Although some moral reformers may have balked at the frequent use of alcohol by naval personnel abroad, it was a crucial part of creating a maritime community that extended beyond the single ship, and indeed beyond solely Britons.

Unlike the abuse of alcohol, prostitution was far more of a concern to the Admiralty. Anxious to present a wholesome image of the navy, there is only one suggestion of immorality in over forty logs in the series published by Westminster Press at the turn of the century. Within an entry for Mauritius, some of the ship's company visited several 'houses of refreshment and entertainment', where they enjoyed 'wine, women and song' after which, 'they went for an orgie' with several of the women.¹⁷³ Beyond this, there is little direct evidence in the logs of the use of prostitutes by ships companies on foreign stations. Overwhelming evidence is provided, however, by the *Statistical Reports of the Health of the Navy* published each year. Each gives figures, with varying degrees of detail, for the rate of contraction of venereal diseases, particularly syphilis, on each station. These reports not only show that the use of prostitutes in foreign stations was commonplace, but that it was a major cause of ill health within the fleet, due to the spread of venereal disease. Indeed, while the flows of people into these coaling stations created many positive cultural exchanges, they also allowed for the flow and exchange of diseases throughout the maritime world.

The infection of sailors was a serious issue, as an infected man needed a considerable amount of time in the sick bay to recover. Furthermore, in the case of syphilis the recurrence of the disease in its secondary form was another significant reason for a

¹⁷³ Dougherty, *The East Station*, 84.

sailor to be incapacitated. The transient nature of maritime communities meant that infections could easily spread between stations, especially if concealed by infected men.¹⁷⁴

Station	1868	1874	1877	1884	1892	1897	1903	1908	1913
All	-	-	-	-	47.53	-	35.9	9.49	5.66
Mediterranean	47.5	45.6	27.87	56.14	41.73	31.45	24.33	7.87	5.4
North America and West Indies	68	22.7	28.84	37.6	31.46	37.65	29.25	7.66	5.07
South East Coast of America	15.5	16.5	27.77	24.33	12.9	27.53	-	-	-
Pacific	54.7	30.6	34.39	35.33	33.33	25.98	27.02	-	-
West African	20.6	21.8	35.71	31.42	32.43	25.62	-	11.4	12.71
East Indies	45.1	47.8	57.61	39.37	65	64.7	25.87	9.3	4
China	112.1	106.3	69.01	39.63	59.72	98.44	34.8	10.68	5.68
Australian	21.6	40.2	51.16	15.7	19.67	42.8	31.6	13.01	6.66

Figure 6.14: Primary syphilis infection rate (per 1000) on British naval stations, 1868–1913. Compiled from British Parliamentary Papers, *Navy (Health)*.

In general, syphilis was deemed to be more serious than gonorrhoea, as it was congenital and could cause systemic consequences, and even death. It accounted for an average of 31.6 days of service time lost per case over the period, although in some cases this was as high as 43 days. It would also, of course, have effects on local populations, but this seems to have been of little concern to the navy. Indeed, measures taken to reduce venereal disease were not for the protection of prostitutes but, as the Governor of Hong Kong, Sir J. Pope Hennessy, suggested, for ‘the provision of clean Chinese women for the use of British soldiers and the sailors of the Royal Navy’.¹⁷⁵ Such statements suggest that, like the local coal heavers, local prostitutes were seen as there merely to serve the needs of the navy, dehumanised to the point of becoming no more than a tool with which to

¹⁷⁴ British Parliamentary Papers, 1870 (202) *Navy (Health) for the Year 1868*.

¹⁷⁵ R.J. Miners, ‘State Regulation of Prostitution in Hong Kong, 1857 to 1941’, *Journal of the Hong Kong Branch of the Royal Asiatic Society*, 24 (1984), 145. See also Philip Howell and David Lambert, ‘Sir John Pope Hennessy and Colonial Government’, in Lambert and Lester (eds), *Colonial Lives across the British Empire*, 228–256.

perform the 'necessity of catering to the sexual requirements of service personnel'.¹⁷⁶ The use of prostitutes in this way was judged the best way of tempering the sailors' sex drive – 'an aggressive, active force' – preventing life at these stations from becoming 'morally and physically dangerous'. This was deemed acceptable, perhaps even natural, as prostitution was seen as 'living evidence of the native disorder'.¹⁷⁷

This stance is confirmed by the fact that those prostitutes catering solely for local men in Hong Kong and other stations were often exempt those measures implemented to control venereal diseases, as they posed no threat to naval or military personnel.¹⁷⁸ Where measures were in place, regular invasive checks and mandatory incarceration for infected prostitutes were enforced. Squarely placing the blame on prostitutes, these measures were often 'a matter ... of intrusive, authoritarian government founded on the subject status of the native population'.¹⁷⁹ Not only did this confirm contemporary views of racial hierarchies, but also established the status of women as more likely to be subjects of control than men.¹⁸⁰ This allowed the satisfaction of the sexual needs of naval men, while justifying the close control of local peoples, and especially women.¹⁸¹ Thus, these measures were 'derived from the same principles and assumptions, the same kinds of biases and blindspots about gender and sexuality, class and race, much the same view of the world'.¹⁸²

Such degrading and prejudiced measures were justified in the minds of the Royal Navy by what appeared to have been positive outcomes of the policies, at least in terms of naval rates of infection. Again, the reports of lower infection rates at stations assert that the blame for these diseases lay solely with the prostitutes, not with those sailors soliciting

¹⁷⁶ Howell, *Geographies of Regulation*, 179.

¹⁷⁷ Philippa Levine, "'A Multitude of Unchaste Women': Prostitution in the British Empire', *Journal of Women's History*, 15, no. 4 (2004).

¹⁷⁸ Howell, *Geographies of Regulation*, 211; Levine, "'A Multitude of Unchaste Women': Prostitution in the British Empire', 161.

¹⁷⁹ Howell, *Geographies of Regulation*, 189.

¹⁸⁰ *Ibid.*, 5.

¹⁸¹ Levine, "'A Multitude of Unchaste Women': Prostitution in the British Empire', 162.

¹⁸² Howell, *Geographies of Regulation*, 2.

sex at each port they visited. Thus it was reported that in Yokohama, which was previously been notorious for disease, 'the condition of the native prostitutes had been considerably ameliorated by the judicious measures adopted for their benefit'.¹⁸³ Similarly, at Port Royal, Jamaica, where prostitutes had once been described as 'in a very diseased condition', the measures had brought 'very beneficial results'.¹⁸⁴

Where there was less success in reducing rates of disease, it was inevitably concluded that this was down to the prostitutes. In Barbados, the measures were seen to be of 'very little use' as it was suggested that 'nearly all the coloured population are prostitutes'. In Hong Kong, as brothels for Europeans were 'as a rule, entirely free from disease', syphilis contracted by naval men was blamed on 'sly' prostitutes and boatwomen. Similarly, even though Tokyo's red-light district had medical surveillance, it was seen as too far distant from the naval stations, so Yokohama prostitutes not subject to examination were used, and then blamed for outbreaks. The uneven implementation of the recommendations at stations also led to problems. Other stations, such as St Helena, did not implement the recommendations fully, while some, such as Bombay and Cape Town, withdrew their measures because of the costs it involved. These stations therefore remained rife with venereal disease, inevitably blamed on local populations.¹⁸⁵

Even where it was recognised that the flows of people around maritime spaces, which included foreign stations with no measures in place, caused outbreaks of venereal diseases, it was suggested the blame lay with the women, other seamen, or the town itself. The rate of infection at Barcelona, for example, was 'very remarkable, but easily understood, when one considered the lamentable condition of that town, as far as the propagation of venereal diseases is concerned'.¹⁸⁶ Similarly, Coquimbo in Chile did not fare

¹⁸³ British Parliamentary Papers, 1870 (202) *Navy (Health) for the Year 1868*.

¹⁸⁴ British Parliamentary Papers, 1870 (202) *Navy (Health) for the Year 1868*; British Parliamentary Papers, 1875 (380) *Navy (Health) For Year 1874*.

¹⁸⁵ British Parliamentary Papers, 1878 (397) *Navy (Health) for the Year 1877*.

¹⁸⁶ British Parliamentary Papers, 1875 (380) *Navy (Health) For Year 1874*.

well 'as there is less amusement they [the sailors] are more likely to plunge into dissipation, and there is a considerable amount of syphilis, as women have been attracted by the prospect of ships being stationed here, and of more money being thus spent'.¹⁸⁷ A further problem was that infected men would arrive en masse at stations with previously low rates of infection, and cause an outbreak. This was the case at Malta and Esquimalt, where British sailors carried venereal disease from home to their new stations, which was blamed on the state of prostitutes in Britain.¹⁸⁸ Similarly, an especially virulent form of gonorrhoea arrived with whalers 'of all colours and nationalities' because of their 'filthy habits'.¹⁸⁹

Moral fervour against what was seen as state sponsorship of prostitution in 1886 caused the repeal of the measures implemented in Hong Kong and Singapore. This meant that prostitutes no longer had to attend regular examinations and brothels spread all over cities, rather than being confined to small areas. The result of this was that in 1897 half the soldiers stationed in Hong Kong and sixty per cent in Singapore were under treatment for venereal diseases.¹⁹⁰ One can only assume the numbers for sailors were similar. Although this was caused by sailors continuing to solicit sex, this unsurprising rise in infection was attributed to the lack of ability for the British to control the bodies of colonial women, and similar measures were reinstated soon after.

Venereal diseases were, of course, not the only ailments which affected the seamen at coaling stations. Just as sexually transmitted diseases were easily spread due to the global nature of maritime connections, other contagious diseases could be transmitted across an entire station if they were not effectively controlled. Regulation of these diseases seems to have been fairly successful in the period 1870–1914, at least amongst naval seamen, with few cases of epidemics appearing to have been recorded in surviving

¹⁸⁷ British Parliamentary Papers, 1875 (380) *Navy (Health) For Year 1874*; British Parliamentary Papers, 1898 (343) *Navy (Health). Statistical Report of the Health of the Navy for the Year 1897*.

¹⁸⁸ British Parliamentary Papers, 1878 (397) *Navy (Health) for the Year 1877*.

¹⁸⁹ British Parliamentary Papers, 1893–1894 (404) *Navy (Health) for the Year 1892*.

¹⁹⁰ Miners, 'State Regulation of Prostitution in Hong Kong'.

documentary evidence. This was generally achieved with the use of quarantine.¹⁹¹ Little appears to have been done for local workers, however. The types of diseases that affected locals at stations varied, but were most common at stations with climates and conditions conducive to contagious diseases. Heat and the presence of mosquitoes were generally singled out as the most likely causes of illness on a foreign station.¹⁹² Furthermore, stations with large areas of dock workers living in close living quarters, such as Simon's Town, were especially susceptible to disease epidemics.¹⁹³

What is clear from these sources is that the presence of a mobile maritime community at these stations not only influenced the experience of sailors while on leave, but also facilitated the spread of diseases. Although the use of quarantine at stations could be effective against some diseases, the nature of the movements of naval ships meant that diseases would often spread from station to station. Indeed, the demand for labour at coaling stations often created the perfect conditions for epidemics to occur, with labour forces often housed in cramped conditions.¹⁹⁴ Furthermore, the widespread use of prostitutes throughout British coaling stations worldwide aided the spread of venereal disease, not just between naval men, but into local, and domestic populations. Whereas measures were instated for the benefit of naval men, not only was little done to protect local populations. Instead, diseases were often blamed on them. Such actions not only reinforce the idea that British concepts of racial and gender hierarchies existed at these stations, but also demonstrate the view that local peoples were seen as merely there to service naval needs.

¹⁹¹ Watts, *The Commission of H.M.S. Retribution*, 98.

¹⁹² British Parliamentary Papers, 1870 (202) *Navy (Health) for the Year 1868*.

¹⁹³ Christopher C. Saunders, 'Mozambiekers: The Immigration of an African Community to the Western Cape 1876-1882', in C.C. Saunders and H. Phillips (eds), *Studies in the History of Cape Town*, 129; B.B. Brock, B.G. Brock, and H.C. Willis, *Historical Simon's Town* (Cape Town: A.A. Balkema, 1976), 46.

¹⁹⁴ For a history of the spread of contagious disease across maritime spaces, see M. Harrison, *Contagion: How Commerce Has Spread Disease* (New Haven, CT : Yale University Press, 2013).

Conclusions

Coaling stations were key contact zones between Britons, colonial populations, and other European people abroad, and are one of the foremost examples of everyday encounters between Britons and the wider world. It is therefore especially important to have an understanding of these experiences and communities found there, as they shaped both the British seaman's perception of empire, and colonial population's impressions of Britain and the navy. Furthermore, through the diffusion of these accounts to the domestic British population, they were crucial to how the empire and sailor were perceived at home, and reinforced the idea that the Royal Navy was a primary agent of empire in the public consciousness. Moreover, as Mike Crang has suggested, to understand a globalised world of transitory experience, we need to understand the points and nodes at which mobilities are produced.¹⁹⁵

This chapter has shown that coaling stations were not transient, insignificant places, but had distinctive characters that defined the experience of the sailor on leave. The ability of ship's companies to act as tourists allowed them to fully interact with a station's unique attractions, populations, and landscapes. In doing so, sailors were able to both satisfy their curiosity and to reinforce their perceptions of an exotic and alien empire. These activities were often performed as part of an established itinerary, along with other westerners present at the station. As a result, the coaling stations itself shaped the relationships formed by those present there, with sailors becoming 'one of the ingredients of an existing hybridity'.¹⁹⁶ The character of these stations was not only defined by what

¹⁹⁵ Cited in Cresswell, *On the Move*, 220.

¹⁹⁶ Lucy Lippard cited in Cresswell, *Place: A Short Introduction*, 49; King, *Colonial Urban Development: Culture, Social Power and Environment*, 58-59.

was found at the stations, but also by the fact they were not isolated sites but interconnected contact zones. Linking these stations were the mobility and fraternisation of British and other western naval men, and these connections helped to create a maritime community, which existed across coaling stations worldwide. These were places where sailors would renew friendships with those on other ships, resident at local barracks, part of local westernised populations, or aboard foreign warships. The extensive contact between these groups, through sport, concerts, at sailors' homes, and in exploring the stations, cemented these connections, and the western identities of the seamen. Furthermore, at stations with populations of British descent, this spirit of community helped foster and strengthen imperial ties between themselves and the motherland.

The context of the station and the nature of the interactions also shaped the seaman's sense of identity, and consequently how he viewed and interacted with these places and their populations. This chapter has shown the sailor largely identified himself as a western maritime man in alien climes, which not only drew him to other westerners but also shaped how local populations were viewed. Although of great interest, views of many local peoples expressed by British naval men tended to revert to those held by many Britons in the period 1870–1914, and accounts were influenced by ideas of race and civilisation. Even where attitudes were largely positive, local people were often seen as part of the landscape, becoming mere 'exotic object[s]' in cultural panoramas.¹⁹⁷ Even so, the interactions between locals and sailors at many stations provided inhabitants with work and trade, and sailors with goods, services, and entertainment. Again, however, these encounters were often racialised, with local peoples often seen merely as there for the sailors' needs, entertainment, and sexual desires.

These periods of leave were not completely harmless, either to sailors or local populations. Despite the use of quarantine, the presence of a mobile maritime community

¹⁹⁷ Sheller, *Consuming the Caribbean*, 157.

at all of these stations facilitated the spread of diseases from station to station. Furthermore, the use of local labour forces often housed in cramped conditions often had disastrous consequences through epidemic diseases. Perhaps more damaging, both to local populations and the moral and physical health of sailors was the widespread use of prostitutes throughout British coaling stations worldwide, which aided the spread of venereal disease amongst naval men and within local populations.

These moments of leisure therefore provide us with more than just interesting anecdotes, but are in fact integral to understanding the nature of the maritime and naval networks which spanned the British Empire. The lengthening of stays on foreign stations due to the emergence of a steam navy had huge effects on the populations of naval coaling stations and the seaman's experience of visiting it. These were spaces that were not foreign or British, neither imperial nor local, but contained 'a mixture of races, customs, and manners, such as can scarcely be found at any other place'.¹⁹⁸

¹⁹⁸ Spry, *The Cruise of Her Majesty's Ship Challenger*, 14; Gunns, *The Log of H.M.S. Sutlej*, 8.

Chapter 7: Conclusions

This thesis has assessed the wider ramifications of the expansion of a steam-powered Royal Navy in the second half of the nineteenth century, and its subsequent reliance on coal across the world. The aims of this have been twofold. Firstly, it has sought to understand how a focus on the coaling issue adds to the understanding of the navy's global role in the period 1870–1914. Secondly, it has sought to use naval coal as a lens through which to view wider aspects of British imperial and naval history. By emphasising the importance of coal and coaling infrastructure, it has not only redressed the coal-blindness of previous histories, but also shown how an understanding of coaling infrastructure and networks can inform and connect wider histories of navy, nation, and empire.

It has been demonstrated that the history of naval coaling extends far beyond local studies of mines, ports, islands, and littorals. Although coal has been largely ignored in histories of the late nineteenth and early twentieth centuries, naval coaling infrastructure was integral to Britain, its empire, and the world.¹ In fact, this coal-blindness – perhaps a result of the unglamorous nature of coal – is a modern trend, and coal was far from a trivial concern for contemporaries.² By centring the analysis on the crucial part that the navy played in sustaining the trade and defending the interests of Britain and its empire, this thesis has shown that the availability and security of coal were integral to the two pillars of British imperial power: trade and control of the oceans. As a result, by using the subject of coaling, and coaling infrastructure, this thesis is able to elucidate and connect issues of imperial defence, mobilisation, state control, labour, imperial encounter, and 'exotic' adventure in the later nineteenth century.

¹ Porter, *The Oxford History of the British Empire. Vol. 3, the Nineteenth Century*.

² Freese, *Coal: A Human History*, 2.

More widely, this study has used naval coaling abroad to show the importance of maritime worlds to the global history of empire in the late nineteenth and early twentieth centuries. In this way, it has sought to extend the scope of existing histories of imperial networks and infrastructure, giving a fuller understanding of previously ignored naval and imperial connections that existed in the period 1870–1914. In doing so, it shows a far more complex situation than is suggested by the idea of periphery and centre, but instead demonstrates the existence of transnational, international, and sub-imperial connections. By highlighting these linkages, it shows the importance of considering three often separated areas of study – those of the state, the navy, and the empire – in the same frame. It does this by analysing each in four contexts, showing connections which are not only evident in high politics and imperial defence, but also in questions of coal supply, working practices, and sailors’ imperial encounters.

Politics and Geostrategy

The third chapter of this thesis assessed the strategic challenges faced by Britain when it introduced a steam navy in the mid-nineteenth century. It showed that steam warships needed large quantities of high-quality coal safely stored across the globe, a huge infrastructural and strategic challenge for the Admiralty. Coal was crucial to the ability of the navy to function in the period 1870–1914, and without a secure supply, changes in technology and ship numbers would have counted for little. In modern scholarship this fact has been largely ignored, but to contemporaries it was hugely significant, and had considerable implications for government foreign policy. As well as being a central worry to the navy, both in terms of supply and protection, it also became a growing concern to the state and across the empire, owing to the importance of imperial commerce. As a result, this thesis has used a wider scope than previous histories to analyse the effect of the

introduction of coal as fuel for the fleet, emphasising that its ramifications were felt beyond the ship's engineers and the boardroom at Admiralty House. Furthermore, it has also shown that the strategic and infrastructural changes necessitated by a coal-powered navy were also directly affected by broader changes in government, state, empire, and the global balance of power. By assessing the coal question in this wider scope, therefore, it has linked histories of naval technology and strategy, with studies of imperial defence and transnational infrastructure.

This thesis has argued that the growing acceptance of the importance of coal in the political and public perception was an integral part of wider efforts to develop and improve imperial defence. This 'coal consciousness' was initially small-scale, but developed significantly and gained political credibility from the 1880s, becoming what might be termed a 'coaling consensus' in the 1890s. By demonstrating how this reflected and affected political shifts, this thesis has extended existing studies by showing that such a consensus could only grow with a more general move away from the detached liberal imperial policies of the mid-nineteenth century. Indeed, each influenced the other, and with the rise of coal consciousness the fuel issue became part of wider debates about imperial defence. These debates were given high importance due to a popular perception of an increased danger to British trade, which had grown enormously in the second half of the nineteenth century. Furthermore, an increasing belief in a change in naval balance of power augmented this fear, and was responsible for the rise of popular imperialism and navalism. Fundamentally, these debates and measures were about protecting and facilitating trade, not acquiring colonies, and the navy played a crucial role in ensuring this. As a result, the provision and security of quality naval coal worldwide was key to addressing these concerns. Thus, although contemporaneous, this emerging proactive imperial defence policy was a movement less linked with aggressive pro-imperialism, but one rather more in tune with ideas of a 'Greater Britain' and of imperial co-operation.

As the coal question was increasingly understood as part of wider questions of imperial defence, it was both a victim of Gladstone's indifferent attitude towards colonial policy, and then, in the mid-1880s, a beneficiary of wider support for action on imperial defence. The relationship between coal consciousness and the state was not one-way, though, and as well as being affected by the political climate, it also had significant consequences for government policy. In particular, the Carnarvon Commission of 1879–1882, and the subsequent leaking of its key details in the press, had a considerable impact on the beginning of a shift away from Gladstonian attitudes towards imperial defence. Although the Commission's reports were important in instigating these debates, the slow progress of change suggests that it merely acted as a catalyst along with other factors.

The influence that the Commission was able to exert in imperial defence matters was a result of its creation of a formalised and legitimised coaling knowledge, which endured as the basis of a coaling consensus that lasted until the adoption of oil. Assumed to be fact and rarely questioned, this coaling knowledge held great power. Indeed, it was only with its suppression that Gladstone was able to slow the growth of coal consciousness, and its leaking and subsequent publication in the press was a vital accelerant to changes in imperial defence. These changes to imperial defence could only be implemented with the emergence of a more efficient imperial defence bureaucracy, however, and the permanent bodies created to deal with the coal question were critical parts of this. Seen in a wider context, these developments can be viewed as part of the expansion of a modern state apparatus in the late nineteenth century.

Infrastructure and Supply

A growing coal consciousness within the state not only acted to instigate changes to its imperial defence ideology, but also required it to invest significantly in the improvement of systems for the distribution of quality coal worldwide. In order to assess this, the fourth chapter shifted the focus from high politics to infrastructure. In doing so it extended histories of supply and victualling – ably covered for the sail navy of the early nineteenth century – to shed light on the mechanisms for coal supply in the period 1870–1914. It showed that although changes in state and government were crucial to measures for the protection of coaling stations and networks, the effectiveness of naval coaling was not solely reliant on the actions of those in Whitehall. Indeed, an essential part of this thesis has been to emphasise the role of state and non-state infrastructures working together. Supplying the navy with coal involved a large number of actors, networks, and processes – coal did not simply appear at a foreign station. These networks were considerable physical entities – including mines, railways, ships, and stations – which spanned huge distances and served the interests of international commerce, the Royal Navy, and many rival navies. The Admiralty's ability to control and monitor this commercial export infrastructure was integral to its contingency plans in case of war or shortage. Thus, this infrastructure, and measures enacted to allow it to function effectively in war, are central to histories of mobilisation. Not only did this chapter shed light on how this infrastructure functioned, but also suggested that studies of the mobility of commodities – in this case coal – should both consider the start and end-point in conjunction with the processes, actors, and infrastructural elements in between.

Britain's dominance of this coaling infrastructure was imperative to its naval and maritime success in the nineteenth century, as it allowed it both to facilitate the movement of its own ships and interests, and to choke or deny the mobility of its potential enemies.

Such power in much of the empire was as important as ship numbers, and was vital to Britain's ability to dominate the trade routes worldwide. The significance of this infrastructure has been largely overlooked in scholarship, however. This thesis has addressed this gap, highlighting the materiality, infrastructures, and processes of global networks and flows. Furthermore, it shows that although mobilities and commodities have become a welcome part of imperial history, studies of those ordinary journeys, less glamorous commodities, and the infrastructure which allowed their movement are still largely absent.

To fulfil the navy's need for fuel worldwide in the period 1870–1914, its coaling infrastructure had to be remarkable in many ways. The sheer geographical scale of operations was unprecedented, and the number of bodies involved complicated the process. Despite these problems, the infrastructure that developed was extraordinarily robust, even during crises, and especially compared with that used by Britain's rivals. The government was immensely fortunate in that by the 1870s Britain already held a considerable advantage over its rivals in terms of naval coaling through its huge empire, which gave it a large number of strategic spaces to store coal, allowing the Royal Navy a truly global reach. Crucially, it also possessed the best fuel available to send to these stations. Welsh coal was universally agreed to be of the highest quality for steam engines, and the discovery of Westport coal in the 1880s provided Britain with a second source of high-quality coal on the other side of the globe. Not only did this give Britain the ability to maintain the high performance of its navy worldwide, but, with few other sources of such high-quality coal, it was able to deny its rivals the same advantage. The huge demand for Welsh coal also meant that Britain possessed a world-leading commercial coal export infrastructure. Throughout the period 1870–1914, the Admiralty took advantage of this and, as had been the case in the age of sail with victualling, the commercial sector was extensively used in the purchasing and transporting of coal for the navy. The Admiralty

acted merely as an overseer, with commercial agents and companies ensuring the supply of coal from pit to station.

Although it did not run each process on a day-to-day basis, the Admiralty still played a key role in ensuring the robustness and efficiency of British naval coaling. The evolving demands of the navy not only required the Admiralty to maintain these physical networks and processes continuously, but also to seek out ways to refine and improve them. The tests it carried out, and especially the refinement of quality standards in the 1880s, were fundamental to guaranteeing British warships the ability to obtain adequate fuel wherever they were. Just as coal consciousness had been key in promoting measures for the defence of coaling infrastructure, it was also critical to changes instigated in the 1880s by the Admiralty for the organisation of stock-levels at stations and in increasing the efficiency of supply. These developments allowed a growing navy to be confident in its supply of quality fuel, despite the challenge of its rivals. Issues of supply were also paramount to mobilisation strategies devised as part of defence plans in the 1880s. Thus it was a coaling consensus that allowed the Admiralty to make contingency plans for coal supply in war, enabling the provision of adequate fuel to most stations at short notice. The combination of these measures to improve fuel supply allowed Britain to maintain the most robust coaling infrastructure of any power throughout this period. Its ability to use the private sector to distribute the highest quality of fuel across the largest network of coaling stations was key in its pre-eminence as a global naval power.

Labour and Coaling Methods

A central part of the naval coaling story was the station itself. Fuel, usually in huge quantities, needed to be loaded onto warships, and this was the focus of the fifth chapter. Even in 1914, the methods employed nearly always required substantial human labour,

which was provided by both local heavers and ships' companies. By analysing the process of coaling a ship, this thesis shows that the history of coaling also tells us much about labour in the navy and empire. Through its examination of the use of sailor labour, it has added to our knowledge of the mechanisms of a crucial naval duty. Moreover, it has shown sailors' attitudes towards menial and unpleasant tasks, the coping mechanisms employed, and the responsibility of the whole crew to get coal in, albeit with roles designated by rank. The method employed was dictated by several factors, including the facilities and workforce available at a station and the size and number of ships needing to be coaled. Although each method was different in terms of techniques used, all involved considerable physical labour, and were therefore disliked by those employed to coal. Not only was coaling exhausting but it was also very dangerous, and accidents were frequent, and could be fatal. It is unsurprising, therefore, that coping mechanisms developed amongst those men coaling. Competition with other ships for coaling rate records amongst naval men was common, as was dressing up, and music from the marine band was a frequent fixture.

In examining the use of local heavers, this chapter connects to histories of imperial labour and ideologies of racial difference. It elucidates how coaling stations witnessed the articulation of racial hierarchies and ideas about race and civilisation, and how the attitudes of British seamen towards local heavers were shaped by these, as well as by naval expectations of work ethic, discipline, and order. Many of the recorded comments confirm contemporary ideas, with local workers seen as particularly suited to certain menial tasks due to their racial difference. Often seen as nothing more than constituent parts of a coaling machine, criticism was particularly harsh when heavers did not conform to what observers expected of workers. Furthermore, although some white labourers were rewarded relatively well for heaving coal, many of the local workers employed in naval coaling were exploited. At these stations, the availability of labour and shortages of work

allowed employers to fix wages at low rates and stop workers forming unions, which resulted in workers living in large slums rife with poverty and disease.

Local Encounters

Although coaling stations were primarily designated as places of work, sailors were regularly granted extended leave after coaling, and thus they were also places of leisure, which provided the theme for the final chapter. With time enough to explore the environs, these stations were also key places of encounter and exchange between Britons, the empire, and the world. Furthermore, these contact zones were interconnected through the mobility of the men who visited them. Indeed, because these connections between sailors, both British and foreign, were made and remade across many spaces, a maritime community existed that stretched across coaling stations. These bonds between Britons and fellow westerners were cemented through sport and social occasions, and extended between all manner of people of similar class and rank. Links were also formed with western populations, especially with expatriates and people of British descent, where an imperial fraternity was maintained with those in the settler colonies.

In light of the infrastructural and cultural ‘turns’ in the humanities, this thesis has assessed these largely overlooked everyday encounters engendered by naval coaling infrastructure. In doing so, it has shown that the need for coal, and therefore the necessity of visits to sites across the maritime world, allowed British seamen to build connections with imperial, maritime, and international communities. At its most basic level, the final chapter is a much-needed response to the neglected subject of the naval man in the nineteenth-century empire. Beyond this, however, coaling stations have been shown to be key contact zones between Britons, the empire, and other European people abroad in the late nineteenth and early twentieth centuries. Such was the frequency of these interactions

that they shaped both the British seaman's perception of empire, and how colonial subjects viewed the British and their navy. As a result, this chapter adds to previous studies of imperial spaces and interactions. Furthermore, through the diffusion of these accounts to the domestic British population, accounts of these experiences were central to the perceptions of empire and sailor, and cemented the connection between navy and empire. Thus these seamen also played a fundamental role in the domestic imperial imagination, circulating impressions of foreign landscapes and peoples, in turn determining racial ideologies and ideas about the imperial exotic.

The ways that sailors wrote about others present at stations also show how their own backgrounds and outlooks would shape, and also be shaped by, time spent abroad. As a result, this thesis has added to previous studies of identity and the navy to show that to see sailors as 'British' is too simplistic. Certainly a British identity, marked by naval ideas of discipline and work ethic, pride in the empire, and assumptions of superiority over local peoples, was frequently displayed, but often juxtaposed with others. In fact, it is perhaps more accurate to see these men as 'western', 'imperial', or 'maritime', such was their identification with men of other during these periods abroad. Indeed, such interactions, for example with Germans in the early twentieth century, often contradict the domestic 'British' identity of that time. These interactions also suggest that the navy should be seen as more than just a highly important instrument for the state and empire, but also as a key cultural agent in the wider empire. Although the interactions were transient, they were regular and numerous. In fact, to many contemporary Britons and colonial populations, the navy and empire were intimately connected, and perhaps to those residing in small spaces where coal was stored, one and the same.

The extended shore-leave given to sailors allowed them to be more fully exposed to life at the station. Although this was often used to fraternise with other Britons and westerners, these interactions often included exploring local peoples and attractions. As a

result, the maritime communities created by these naval visitors at each station were not just an amalgamation of the cultures of those present, but one defined by nature of the station itself. British seamen spent extensive time exploring coaling stations, and a fascination with the exotic emerges from these records. Indeed, many of the recollections of the peoples encountered, the landscapes, and the cultural treasures reflect this idea of imperial adventure. Descriptions of local populations are prevalent in many of the recollections of station life. Many of these were admired, either as 'noble savages' with exotic cultures, or as backwards peoples slowly coming within the pale of 'civilisation'. Often, however, even if a fascination did exist, populations were in reality reduced to part of the background – exotic objects in exotic landscapes. Comments about local people often went along with ideas of civilisation and progress. The yardstick against which these populations were judged was, of course, the British sailor himself, and anyone who did not measure up to his values or ideology was castigated. These opinions were particularly manifested through comments about dress, language, hygiene, and work ethic.

At many stations, relationships between the navy and local populations were reciprocal – providing inhabitants with work and trade, and sailors with goods, services, and entertainment. Despite this, local populations are often presented merely as peculiar providers of services to the navy. In this way, attitudes towards local traders, businesses, and entertainers reflect those shown towards coal heavers. Moreover, despite relying on their trade, sailors would often complain about the invasions of space when these vendors came aboard, or the hassle they would encounter at many bazaars.

Nowhere was the idea of the local population as a service provider more ingrained than in the use of prostitutes found at stations, who were treated as objects for the gratification of naval men. Not only were venereal disease outbreaks squarely blamed on sex workers, but measures to combat them showed little regard for local populations. Such measures were not only invasive to these women, but were explicitly designed only to

provide a clean service to seamen, with prostitutes used solely by local men exempt. The race and gender of prostitutes therefore allowed the navy to shift the blame for these diseases away from sailors soliciting sex. The Admiralty's stance on the use of prostitutes abroad was not shared in Britain, however, and moral outrage was enough to force the repeal of many of the measures to control venereal disease amongst prostitutes. Domestic opinion also explains why this practice, so frequently occurring, was excluded from all published accounts, upholding the idea of the sailor as a moral defender of empire in the popular consciousness.

Wider Conclusions

This thesis has sought to show that the story of infrastructure, resources, and labour are as much part of naval and imperial history as strategy and high politics. By exploring the history of a particular resource with specific chemical properties, this thesis has demonstrated a novel way of thinking about naval, imperial, and global history. By showing how one problem, the coal question, had wider ramifications across the empire, it has revealed a multitude of procedures, relationships, and connections not always seen as important or, in some cases, even omitted from other histories. By thinking about naval coal, it is possible to underline the links between these processes, states, individuals, and institutions. The historical actors which populate this history of naval coal are diverse in terms of class, location, occupation, and race. These included those in the Admiralty, agents in South Wales, men on the spot in the empire, members of parliament, exporters of coal, those on bulk trade sail ships, engineers at testing sites, members of the press, sooty naval men on deck, and silenced coal labourers appraised by Britons. The thesis has been truly global, and has shown flows that go beyond the metropole and periphery. Instead, they were both British and foreign, crossed national and oceanic boundaries, and

connected other nodes of empire in sub-imperial networks. The most obvious of these flows comprised of the material mobilities of coal, ships, and people, but with their movement came the diffusion of information and knowledge, imperial experiences, and animals. Yet this thesis is not solely about mobility, but also the specificity of the places involved. Sailors and coal were not freely mobile, but moved between an established series of strategic spaces, where much of the local populations were tied to the employment found there. These places – which included harbours, wharves, towns, and landscapes – were defined by their fixed geography, in terms of their strategic importance, but also by the distinctive character of the populations, entertainments, and sights found there.

Despite only concentrating on one key issue, the thesis reveals much about how the British state functioned, and how this had consequences far beyond Whitehall, and even Britain. It does this by recognising that this was not a static story, but was one that was constantly evolving, reflecting the changing priorities and needs of the state. These emerged from the Admiralty, the government, and from navalists outside the state apparatus, and reflected diverse and often conflicting strategic and economic concerns. As a result, this thesis shows that the state increasingly functioned on a basis of contingency planning. These were designed to allow British coaling infrastructure to cope with almost any foreseeable disaster, whether it emerged from rivals or potential rivals, coal shortages, vulnerabilities within the infrastructure, or costs. The changes this planning necessitated ranged from high-level geostrategy – including expensive and wide ranging global defence schemes – to the seemingly insignificant and the mundane, such as monitoring stock levels. By following one issue, this thesis is able to show that these seemingly inconsequential actors, processes, and decisions are crucial to understanding how the strategies of the state were achieved, the processes of coal supply was carried out, the labour that was required, and the cultural encounter that resulted.

This thesis has also shown that material mobilities matter to naval and imperial history. In using the lens of coal to explore different connections between the naval, imperial, and global aspects of this period, it has demonstrated that studies of commodities can be more than economic histories of the global, but also inform social, cultural, and political subjects. Indeed, although it began by establishing how the coal question was a strategic and political problem for the state and navy, the subsequent chapters of this thesis demonstrate how the history of naval coal is more than a history of high strategy, but also of people and everyday encounter. Thus it shows how a focus on bulk commodities can inform the imperial studies of structures and networks, discourse, and identity.

Further directions

It is perhaps the connecting of different areas of study that is most pertinent when contemplating future directions for study. This thesis has shown that a work which had naval and imperial history as its focal point need not limit itself to such stringent parameters. Indeed, it has shown that the history of coal is also a history of science and technology, of culture, of the media and press, of human labour, of politics and geostrategy, and of networks and infrastructure. Although the subject of coal is perhaps exceptional in terms of its ability to shed light on many sub-disciplines, this thesis has also shown that using naval history more generally as a lens can precipitate studies which inform other areas of history. In particular, it is clear that naval history can be used to elucidate the transnational and transoceanic networks of empire in the nineteenth century.

Historians and historical geographers have increasingly looked to the sea in studies, and scholars such as Frances Steel, Valeska Huber, and Anyaa Anim-Addo have brought the

mobility of steam ships in the nineteenth century to the forefront of academic thought.³ Despite this, little has been said about naval men, the infrastructure they used, or the spaces they inhabited. Although this thesis goes some way in addressing this gap in the historiography, it is clear that much still needs to be done. Although the navy was at the forefront of empire in the period of high imperialism, little has been written about this connection, and there is a need to assess the imperial nature of the navy at this time. What is true of imperial history is also true of naval history, and far more needs to be written about the navy outside of European shores, beyond war, strategy, and local histories. Indeed, due to their interconnectivity, such a history might provide a platform for a truly global history.

In addition, the importance of British coal globally in the nineteenth and early twentieth centuries goes far beyond the scope of this study. Although perhaps less glamorous than those goods which have been assessed in commodity history thus far, the global impact of British coal was immense. From trade steamships and luxury liners to railways in Europe and South America, coal had an impact which changed demographics, industries, trade, leisure, politics, and wars. Moreover, its movement was subject to acceleration, deceleration, and choke points, and these ideas need to be applied to wider trade patterns. Only by doing this will a fuller picture emerge of how the juxtaposition of trade, maritime spaces, sovereignty, and naval power were crucial to mobilities and immobilities in this period.

³ Steel, *Oceania under Steam*; Huber, *Channelling Mobilities*; Anyaa Anim-Addo, “‘With Perfect Regularity Throughout’: Hybrid Geographies of the Royal Mail Steam Packet Company”, in J. Anderson and K. Peters (eds), *Water Worlds: Human Geographies of the Oceans* (Aldershot: Ashgate, 2014), 163-176.

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