

'Stokers - the lowest of the low?'
A Social History of Royal Navy Stokers 1850–1950

Submitted by Tony Chamberlain to the University of Exeter as a thesis for the degree of Doctor of Philosophy, March 2013.

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Chamberlain.

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ABSTRACT

‘Stokers-the lowest of the low?’

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The introduction of steam propulsion during the early nineteenth century presented the Royal Navy with two interlinked challenges. In the first, steam propulsion had to overcome the sceptics and the challenges of technical development until it proved a reliable and superior alternative to sail. The second was a challenge to the social infrastructure of the Navy which struggled to integrate increasingly large numbers of engine room personnel into a traditional close knit naval hierarchy dominated by seamen. The engineers’ struggle for commissioned status and equality with the executive branch is well documented, as is the history of the engine room artificers’ branch. By comparison, where naval and historical custom has promoted and celebrated the ideal of the Royal Naval ‘bluejacket’ or seaman, its stokers have become subjects of censure while their story has been largely ignored and corrupted by prejudice and myths.

Tradition dictates that stokers are portrayed as coarse, uneducated men with a reputation for being trouble makers. As a result, they were judged to have the worst discipline record on the lower-deck. Because of the physical nature of their work and the filth and detritus from the coal they worked with they were also commonly believed to originate from the lowest classes of contemporary society. Yet without stokers no ship could leave harbour let alone engage the enemy. Every item of machinery and equipment onboard a ship relied on the steam produced by stokers. But far from being seen as equals or given any credit for their endeavours in the miniature hell of the stokehole, stokers became social outcasts. No other branch of men in the Navy has been subjected to such longstanding and deep seated censure. The negative stereotypes which surround stokers continue to perpetuate a disservice to a much overlooked and maligned branch of men. In order to determine the reasons why stokers attracted such negative sympathies this thesis will separate the facts from the myths and offer a new perspective on the men condemned by history as ‘the lowest of the low.’

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List of Abbreviations

ADM	Admiralty
BCS	Battle Cruiser Squadron
'Black Gang'	Lower-deck name for the stoker's branch
C-in-C	Commander-in-Chief
'Clinker Knocker'	A stokehole tool also a seaman's nickname for a stoker.
E.R.A.	Engine Room Artificer
FL	First Lord
FSL	First Sea Lord
GS	General Service (the surface fleet)
IJN	Imperial Japanese Navy
IWM	Imperial War Museum
JAG	Judge Advocate General
KRs & AIs	Kings Regulations and Admiralty Instructions
Lt.	Lieutenant
LTO	Leading Torpedo Operator
MP	Member for Parliament
Rear Admiral (S)	Rear Admiral Submarines
RFR	Royal Fleet Reserve
Shp	Shaft horsepower
Slops.	Items of clothing or material purchased from the Purser (pronounced 'Pusser')
SSL	Second Sea Lord
S.P.O	Stoker Petty Officer
Stokehole/stokehold	Compartment where the furnaces/boilers were sited. With the advent of oil firing it became known as the 'boiler room.'
TNA	The National Archives

Acknowledgements

I was inspired to undertake this thesis by my daughter, Dr Suzanne Chamberlain who together with my family and many friends has encouraged and supported me through six long, but enjoyable years of study. My first supervisor, Professor Nicholas Rodger, provided wise counsel in the early planning stages of this thesis and helped me to clearly define the nature of my research before leaving Exeter for pastures new. Nicholas was ably replaced by Dr Roger Morris who has closely monitored my progress throughout the writing of this thesis offering generous and enthusiastic support and critical advice. His constant attention to detail has been of immense help in improving the structure of my work and in elevating my own writing skills. My second supervisor Dr Duncan Redford supported me through the crucial MPhil/PhD upgrade process and being an ex-navy man also took a keen interest in this thesis.

I am most grateful to Nichola Southwell, my colleague and friend who has been an enthusiastic proof reader. Nichola's skills have immeasurably improved the reading of this work. Roger Richardson-Bunbury, a former Royal Navy Engineer also offered sound advice particularly with regards to technical details and kindly shared sources of information which have proved most useful.

My special thanks go to my good friends Doreen and Roger Woolett who kindly let me stay in their comfortable mews house in Paddington on my many visits to the London archives. Their company and generosity made research all the more enjoyable.

Finally, I acknowledge the generosity of my employer, Cornwall College, who have supported me financially and pastorally throughout the last six years.

Chapter One

Introduction: Stokers in History

The *Comet*, launched in 1822 was the first steam ship ordered for the Royal Navy although the *Monkey*, which was purchased from William Evans her builders at Rotherhithe, entered naval service a year earlier.¹ From this modest beginning the first steam ship to appear in the Navy List was HMS *Lightning* in 1823 (later re-named *Royal Sovereign*) she was powered by a Maudslay engine and was followed in 1829 by the first steam fighting ship HMS *Dee*, which had a 200 horse power engine reputed to be the largest marine engine of its kind.² Thereafter, it would take another seventy-seven years of continual technical development before the Royal Navy laid down the world's first steam turbine battleship *Dreadnought* which was commissioned in 1906³.

The drive to develop steam technology during the mid-nineteenth century prompted D. K. Brown to suggest that 1860 marked the 'high-water mark' of British industrial supremacy.⁴ By this mid way point in the technical development of steam propulsion, it could be argued that the Royal Navy had made the transition from an all sail to an all 'steam Navy.' By 1865 there was only one 'ship of the line' without auxiliary steam propulsion, the remaining fifty-five ships all being classed as 'steam,' (See Appendix 1). Out of forty-six frigates, thirty-seven were equipped with steam machinery and only nine retained full sailing rigs.⁵

In total, the Navy could muster a total of 445 steam vessels against a mere sixty-nine sail, a figure artificially enhanced by the inclusion of fifty-four minor mortar vessels and floats. Nevertheless, while on paper at least, the Navy

¹ Geoffrey Penn, *Up Funnel, Down Screw: The Story of the Naval Engineer* (London, Hollis and Carter, 1955), 13.

² P.M. Rippon, *The Evolution of Engineering in the Royal Navy*, 2: vol. 1 (Tunbridge Wells: Spellmount, 1988), 21.

³ D.K. Brown, *Warrior to Dreadnought; Warship Development 1860-1905*, (London, Chatham, 1997), 9.

⁴ *Ibid.*

⁵ 'Return of Number of Steam-Ships Afloat, Building and Converting, with Number of Effective Sailing Ships: February 1865,' ed. Admiralty (House of Commons, 51, 1865).

appeared to have made the transition from sail to steam, it is true to say that steam propulsion, together with hull design and armaments, were still in the evolutionary stage. Furthermore, despite the commissioning of the Royal Navy's first mastless turret ship *Devastation* in 1873, ships continued to be built and equipped with full or partial sailing rigs until the very end of the nineteenth century.

In 1872 the committee on designs for ships of war argued, 'the possession of full rigged ships with good sailing qualities is a necessity in our fleet among the vessels specially designed for distant foreign service.'⁶ Edgar Smith called this period the 'great sailing era,' after the all steam fitted Particular Service Squadron conducted a world cruise entirely under sail in order to train officers and men in seamanship, thereby highlighting the continued reliance of sailing rigs for long passages.⁷

The long period of transition from sail to steam has been well covered elsewhere. However, the problems caused by the introduction of large numbers of engine room personnel into a traditional close knit social hierarchy dominated by seaman has been largely overlooked. The extent of this upheaval is described by Basil Greenhill and Anne Giffard in *Steam, Politics and Patronage* where they argue that engineers were 'interlopers who threatened the vested interests of the ships' establishment.'⁸ The perceived threat posed by the introduction of engineers was thought to be the ability of engineers to be able to perform the 'most important function onboard a ship'; that of making her get under way, without the need for sails or rigging.⁹

Brian Lavery makes the point in his excellent three part history of the lower-deck that the ordinary sailor of the Royal Navy has not had his share of

⁶ George. Elliot and A. P. Ryder, "Report by Admiral G. Elliot and Rear-Admiral A. P. Ryder, Members of Committee on Designs for Ships-of-War, Dissenting from Report of Committee," ed. Admiralty (House of Commons, C. 489, 1872).

⁷ Edgar C Smith, *A Short History of Naval and Marine Engineering* (Cambridge: University Press, 1937), 162.

⁸ Basil Greenhill and Ann Giffard, *Steam, Politics and Patronage: The Transformation of the Royal Navy 1815-54* (London, Conway Maritime, 1994), 84.

⁹ Ibid.

attention from historians over the years.¹⁰ Moreover, he argues that social historians have devoted far more attention to the working class ashore than the common seaman afloat, unless of course they had a particular interest in mutiny, ill-discipline or recruitment.¹¹ Interestingly, Lavery has identified the dichotomy whereby there have been important works covering the early history of the lower-deck, particularly from historians such as Nicholas Rodger in the period before 1815, but apart from one or two notable exceptions there has been precious recent work with regards to the first half of the twentieth century. This leads Lavery to describe the period from 1850 to the present as a 'clean sheet' so far as the historian is concerned.¹²

Within the little that has been written about the lower-deck it is clear that the seaman or 'bluejacket' has received far more attention than the naval engineering branch in general, or the stokers' branch in particular. With regards to the history of the engineering branch, most of the published work has been written by naval engineers themselves. However, as one might expect, engineers are more concerned with the 'technical' applications of marine engineering rather than the social history of the engine room personnel who operated it. Moreover, when they deemed it necessary to address aspects of their 'social history', the main emphasis has been placed upon the emergence of naval engineers and their challenge to gain social acceptance and equal service status in a Navy dominated by seamen.

In similar fashion, lower-deck engine room artificers were forced to fight their own battle, although for them the ultimate goal was not just to gain acceptance, but to successfully establish themselves as a 'special' and superior breed apart from the rest of the men of the lower-deck. Different and distinct from the artificers, the largest body of men within the engine room branch were its stokers. Yet despite their numerical strength second only to the seaman branch, stokers did not challenge the status quo. Instead, and somewhat grudgingly, stokers appeared to have accepted the position allotted them and

¹⁰ Brian Lavery, *Able Seamen: The Lower Deck of the Royal Navy 1850-1939* (London, Conway, 2011), 9.

¹¹ *Ibid.*

¹² *Ibid.*

suffered as a result of being placed on the very bottom rung of the naval hierarchical ladder.

So why is a social history of the Stokers' branch needed? A social history approach to the subject is necessary in order to explore a very under documented history of the second largest branch of the modern naval lower-deck. Contemporary and modern literature either completely ignores the contribution of the naval stoker to the service or singles him out for censure. Stokers are traditionally portrayed in a negative stereotype often criticised for their lack of discipline, poor education and ignorance of traditional service discipline and values. By contrast, history celebrates the virtues of the seaman rating, the naval bluejacket, highlighting his discipline, steadfastness in action, loyalty and traditions. While the common seaman has received much attention from historians, there has been no equal study of the naval stoker or any attempt to analyse the reason why he should be so negatively stereotyped. Despite their undoubted contribution to the efficiency and operational effectiveness of the Navy, history and popular memory have ignored or marginalised stokers to the extent that having been placed firmly on the bottom rung of the naval social hierarchical ladder they are regarded as the 'lowest of the low.'

The historiography of Royal Navy Stokers

The social history of the naval engineers' struggle for wardroom status, acceptance and integration into the Navy and the consequent emergence of the E.R.A. have been fully examined in *Up Funnel Down Screw* by Geoffrey Penn.¹³ This short, concise history mentions stokers, but gives only the briefest outline of changes to their service conditions and ignores any reference to their social position or standing in the Navy. Similarly, Edgar Smith's *Short History of Marine Engineering*, which despite its title is a more comprehensive and detailed account than that given by Penn, gives even less information on

¹³ G. Penn, *Up Funnel Down Screw*, 95-110.

stokers. It even adds insult to injury by observing that stokers 'liked to suit their own convenience' when stoking.¹⁴

This derogatory view is repeated in Denis Griffiths *Steam at Sea*, where Griffiths managed to ignore the naval stoker entirely while condemning the fireman, the Merchant Service equivalent, as a 'recalcitrant drunkard.'¹⁵ In taking this harsh line Griffiths unsympathetically ignored the courage of the firemen and stokers who gave their lives during the two World Wars of the twentieth century. Those who knew the perils firemen and stokers faced even in peace time service were more supportive. The following contemporary observation of the final moments of RMS *Titanic* points to the harsh reality and courage of the men who toiled below:

It is stated that the lights were burning until a few minutes before the ship took her final plunge. This proves that the officers and men below remained at their posts when they must have known that death – the most terrible and painful that it is possible to conceive – awaited them at any minute, wither by the bursting of the steam-pipe or water rising in a compartment. It is certain that those working below must have known the awful danger the ship was in long before anybody else, but they remained at their posts, resolving to die sooner than come on deck and create a panic or attempt to save themselves.¹⁶

In a review of the first century of naval engineering, Engineer Vice-Admiral Sir John Kincome praised the contribution of engineering officers and E.R.As over the preceding century. However, he completely ignored stokers or their tradesmen counterparts, naval mechanics.¹⁷ At least P.M. Rippon, another former engineer, acknowledged the existence of stokers although Rippon succumbed to tradition by implying that the nineteenth century Navy recruited stokers from 'the merchant service, colliers, fishing smacks and the gaols and highways.'¹⁸

¹⁴ Edgar, C, Smith, *A Short History of Naval and Marine Engineering*, 137.

¹⁵ Denis Griffiths, *Steam at Sea: Two Centuries of Steam-Powered Ships* (London, Conway Maritime, 1997), 133.

¹⁶ Lord Charles Beresford Tribute to the Black Squad (*Lloyds Weekly News*, 1912 [cited 28 May 2012]); cited in <http://www.encyclopedia-titanica.org/black-gang-tribute.html>.

¹⁷ John Kingcome, 'A Century of Naval Engineering,' *Journal of Naval Engineering* 43, no. 2 (2007).

¹⁸ P. M. Rippon, *The Evolution of Engineering in the Royal Navy*, 42.

B. W. Beresford repeated the same claim in a journal article and may well have taken it directly from Rippon.¹⁹ However, while neither author referenced their source, the quote is clearly part of a phrase used by A. P. Eardley-Wilmot in his 1849 treatise *Manning the Navy*.²⁰ In making a case for the introduction of a continuous service system to replace the then current system of recruiting men for an individual ship's commission, Eardley-Wilmot observed that the Navy of his day was dependent on:

The Merchant Service, colliers, fishing smacks and the galls and highways to make their vicious contribution to the motley company of our crews corrupting by their presence and example those who might otherwise be accessible to mental improvement and moral reformation.²¹

Eardley-Wilmot used this disparaging phrase to highlight the fact that the Navy had become reliant upon the recruitment of low-calibre seamen from wherever they could be found. As a seaman officer, Eardley-Wilmot had no interest in the recruitment of stokers, a fact made obvious by his complete lack of reference to them in his treatise. And why would Eardley-Wilmot have shown any interest in the recruitment of stokers? Fifteen years after his treatise on naval manning was published there were only 4,086 stokers serving, compared to 53,000 seamen; thereby making the accusation even more unlikely.²² Yet, despite this fact both Rippon and Beresford took Eardley-Wilmot's phrase from its context and re-presented it in order to suggest that it was directed solely at the recruitment of stokers, which is clearly not the case. This poor use of a historical source is a prime example of how the negative image of stokers has been perpetuated and reinforced in the popular memory without just cause.

Peter Kemp's *The British Sailor* followed the path of the seaman from Tudor times to the Fisher reforms of 1904 and is another example of where the tradition of portraying stokers in a poor light is continued. Having entirely ignored the contribution of the stoker in his history of the lower-deck, Kemp

¹⁹ B. W. Beresford, 'Stoker Royal Navy the Lowest of The Low', *Sea Breezes*, 67, no. 575 (1993), 889.

²⁰ A. P. Eardley-Wilmot, *Manning the Navy*, (London, 1849).

²¹ *Ibid*, ix.

²² "Diagram Showing the Number of Ships in Commission and Engine Room Ratings, Seamen and Marines Voted for Each Year from 1793-1903," (London, Admiralty, 1904).

contemptuously dismissed stokers by suggesting that they were seen as a 'distinctly lower order of life', by the officers and the seamen of the fleet.²³

In similar vein, Christopher Lloyd's *The Nation and the Navy* takes up from where Kemp left off and continued the social history of the Navy up to the First World War, although again, Lloyd managed to leave out any reference to stokers and their contribution to the evolution of the Navy. In an earlier history, Michael Lewis *The Navy in Transition: A Social History 1814-1864* also ignored the social position of stokers despite the fact that by the 1860s stokers were serving in every ship in the Navy; albeit in small numbers because sail was still the principal means of propulsion, steam being reserved for entering or leaving harbour.²⁴

Refreshingly, Brian Lavery in *Able Seamen: The Lower-deck of the Royal Navy 1850-1939*, dispenses with tradition and correctly argues that stokers were few in number during the mid-nineteenth century but highly regarded and well paid.²⁵ Moreover, he shows that before the emergence of the E.R.A. the Chief Stoker was a 'skilled man' able to manage an engine by himself and take the place of the junior engineer.²⁶ Lavery's social history of the lower-deck sympathetically addresses the rise of the stokers' branch in two important areas. Firstly, Lavery includes stokers in each chapter giving them equality with other ratings, while highlighting their importance to the development of the steam Navy. Secondly, and more importantly, Lavery breaks new ground by dispensing with the negative stereotype so often applied to stokers by historians.

But what do contemporary writers about life on the lower-deck have to say about stokers? Many of them were naval officers such as Captain Taprell Dorling [Taffrail]. Dorling was a prolific commentator of lower-deck life which he portrayed in a series of novels and sketches with titles such as *Pincher Martin OD*, *Shipmates* and *Endless Story*. Dorling freely admitted that he gave 'fictional

²³ Peter. Kemp, *The British Sailor: A Social History of the Lower Deck* (London, Dent, 1970), 198.

²⁴ Michael Lewis, *The Navy in Transition: A Social History 1814-1864* (London, Hodder and Stoughton, 1965).

²⁵ B. Lavery, *Able Seamen: The Lower Deck of the Royal Navy 1850-1939*, 37.

²⁶ *Ibid*, 73-4.

colouring' to his subjects and portrayed sailors how people might have imagined them to be, rather than as they really were.²⁷ Another commentator on lower-deck life was Paymaster Lewis Ansalem da Costa Ricci, [Bartimeus]. Like Dorling he was born in the nineteenth century towards the end of Victoria's reign when class distinction firmly isolated officers' from their men. The fictional sailor characters in the stories of these two authors were stereotyped as simple folk who, despite the harsh discipline, extreme punishments, poor food and conditions of service were nonetheless contented with their lot and seemingly devoted to their officers. In reality, the social gulf between the two classes of men was so wide the average officer would have taken little interest in the lower-deck and even less in the private lives of the men who occupied it.

The most valuable accounts of lower-deck life are those written or recorded by the men who experienced it at first hand. However, Christopher McKee in *Sober Men and True* points out that the average lower-deck autobiography tends to conform to what sailors perceived to be the demands of the 'naval-memoir genre,' whereby they concentrate on irrelevant matter such as accounts of pranks and misadventures ashore, rather than on the important facts such as lower-deck deprivations, illnesses and the occasional terror.²⁸

The autobiography *Aye Aye Sir*, written under the pseudonym 'Clinker Knocker,' is a classic example of this form of naval-memoir genre. The name 'Clinker Knocker' was attributed to stokers by seamen during the age of coal firing when stokers used a nine foot iron bar called a slice to 'knock' the burnt clinker off the fire bars when cleaning the fire.²⁹ This so called autobiography is clearly a fictional account written to conform to how a stoker was expected to behave, rather than any attempt to present an accurate picture of the challenges faced by stokers on the lower-deck. The reader is subjected to an endless account of drunkenness, fighting, and ill-discipline and led to believe that it typified the average stoker. Rather than celebrate the lives of stokers, this

²⁷ Taprell Dorling, [Taffrail], *Endless Story* (London, Hodder & Stoughton, 1931), Preface.

²⁸ Christopher McKee, *Sober Men and True: Sailor Lives in the Royal Navy 1900-1945* (London, Harvard University, 2002), 8.

²⁹ Clinker Knocker, *Aye Aye Sir* (London, Rich and Cowan, 1938), 46.

story could only have further tarnished their reputation and confirmed the worst fears of those who already held them in low esteem.

There is a strong possibility the autobiography was actually written by someone purporting to be from the lower-deck. Why else would a man of such a modest lower-deck background need to adopt a pseudonym? Moreover, why would an Admiral who admitted that he had not met or even served with the author wish to contribute to a foreword, particularly as the book brought the service into disrepute? The author may well have been Dorling [Taffrail] as Clinker Knocker invites the reader to learn more about the sinking of the *Narborough* and *Opal* after the Battle of Jutland by referring to *Endless Story*.³⁰

By contrast, *Clear Lower-deck* and *A Stoker's Log* are far more believable and accurate autobiographies. Unlike Clinker Knocker, these accounts only occasionally lapse into the naval-memoir genre. Instead, the two former stokers concentrate on the more important social detail of life on the lower-deck. In *A Stoker's Log* Henry Vincent outlined his reasons for writing his memoir by stating that he wished to bring to public notice the numerically large but little known species of lower-deck ratings, known as 'the black gang.' For, he admits, the naval stoker was quite unknown to the public other than as an 'object of derision.'³¹

In the 1920s Vincent was well aware that stokers were misrepresented or ignored in history and literature. As a result, he strongly criticised the writers of naval social history who claimed to know the lower-deck but who then failed to give stokers 'their rightful place in history.'³² Vincent acknowledged that stokers suffered from being negatively stereotyped but claimed the stoker was not the 'abandoned reprobate that popular view too often made him out to be.' However, Vincent unwittingly added to the stereotype by admitting with honest candour that stokers were looked upon as 'a lower order of seafarers, having all the vices of the common seaman, but none of their virtues.'³³

³⁰ Tapprell Dorling, *Endless Story* 186.

³¹ Henry Vincent, *A Stoker's Log* (London, Jarrolds, 1929). 7.

³² *Ibid.*

³³ Henry Vincent, *A Stoker's Log*, 7.

In *Clear Lower Deck*, Sidney Knock argued that stokers were subjected to prejudice from both civilian and naval authorities alike.³⁴ Knock observed that 'departmental antagonism' between seamen and stokers often led to stokers being picked out and targeted by seamen because of the dirt and residual mess which was an unfortunate by-product of their work. Nonetheless, Knock was prepared to admit that seamen often had good grounds to complain against stokers, who he claimed often showed a distinct lack of consideration in the matter of upper deck 'ship cleaning.'³⁵ While avoiding the trap of the naval memoir-genre, Knock took great pains to refute accusations that sailors were a 'drunken crowd'; instead he promoted the sailor (and stoker) as a 'family man.'³⁶

In *From Jack Tar to Union Jack*, Mary Conley observed that at the close of the nineteenth century the reputation and popularity of naval men was intimately connected to the growing presence and stature of the Royal Navy. In addition, their popularity was such that sailors came to be represented as defenders not only of British interests abroad, but also of 'Britishness.'³⁷ This was the age of the popular 'cult of navalism,' which was avidly followed by the popular press and writers of the day and promoted by organisations such as the British Navy League and the Imperial Maritime League.³⁸ Moreover, Conley suggested that by distancing themselves from their rough forerunners, naval writers of the late nineteenth and twentieth centuries constructed the sailors' manhood in relation to their moral stature, professional advancement and their familial responsibilities.³⁹ Nonetheless, despite the popularity of naval men at the beginning of the twentieth century and Mary Conley's suggestion that their popularity had allowed them to shake off the 'Jolly Jack Tar' image, three decades later, Sidney Knock still found himself having to defend the sailors' image, giving rise to the suggestion that some negative attitudes towards sailors remained.

³⁴ Sidney Knock, *Clear Lower Deck*, 2nd ed. (London, Philip Allan, 1932). 52.

³⁵ *Ibid*, 54.

³⁶ *Ibid*. 194.

³⁷ Mary, A. Conley, *From Jack Tar to Union Jack: Representing Naval Manhood in the British Empire, 1870-1918*, (Manchester, Manchester University Press, 2009), 125.

³⁸ *Ibid*.

³⁹ *Ibid*, 128.

Unusually, Knock's memoirs were reviewed by a naval officer in the service journal, *The Naval Review*, which for the most part supported Knock's description of a stoker's life on the mess deck. However, the reviewer took exception to Knock's failure to give naval officers more prominence in his story claiming that they had been 'practically ignored.'⁴⁰ Knock's failure to dwell on the role of naval officers is unsurprising as he set out to describe conditions on the lower-deck as seen through the eyes of a stoker and, while a chapter on the relationships between officers and men would have been useful to historians, it was obviously not essential to Knock. Moreover, Knock may well have had good reason to exclude officers from his description of lower-deck life as the following statement from the reviewer of his book reveals a patronising attitude towards the maturity and intelligence of seamen:

Till recent years the crowd mentality of sailors was that of children, to-day it has reached the adolescent stage. By common consent that is the hardest stage of all because the adolescent's outlook is warped by a sense of his own self-sufficiency. He is in revolt against authority resenting any attempt to guide his footsteps and denying any suggestion that he may need help.⁴¹

The attitude displayed above also suggests that while the sailor's image may have improved in the public domain, there were still officers in the naval service who looked down on the men as uneducated children that required close 'parental control.' Knock's critic also made the weak accusation that by publishing his book the year following the infamous 1931 Invergordon mutiny, Knock harboured an ulterior 'propagandist motive, being out to cause mischief.'⁴²

Yet, lower-deck autobiographies were unlikely to challenge, influence or change lower-deck conditions. The Naval Discipline Act prevented serving men from collectively making complaints or representations regarding their conditions of service. Therefore, in order to challenge the status quo the men needed a champion, someone who knew at first hand the conditions of the lower-deck and who had the influence to effect change. Such a man was the

⁴⁰ J.H.H., "Clear Lower Deck," *Naval Review* 20, no. 2 (1932). 368-72.

⁴¹ *Ibid*, 371.

⁴² *Ibid*, 368.

former Petty Officer and Coastguard man Lionel Yexley who was previously known as James Woods. After retiring from the Navy, Yexley joined the Coastguard Service and after retiring for the second time he became an author of lower-deck journals and an active campaigner for improvements to lower-deck living conditions. As a vocal naval commentator Yexley regularly brought lower-deck issues to the attention of the lower-deck, the general public, Parliament and the Admiralty.

Despite the fact that Knock failed to mention Yexley in his book, Knock's critic accused Yexley, together with the influence of naval Welfare Committees, for interfering in naval matters which he suggested were 'the province of naval officers.'⁴³ Yexley became a keen supporter of stokers and was active in promoting their cause. However, he also recognised their poor standing in the service noting that, 'stokers did not lead a pleasant life as seamen tended to look upon them with contempt.'⁴⁴

Therefore, with stokers apparently omitted from both the history of naval engineering and from the social history of the lower-deck, an alternative means of discovering the reasons why stokers seemed to have attracted such a poor reputation must be sought. One approach would be to seek the opinions of the men themselves. However, the men who served in the Royal Navy throughout the period of this thesis are now long passed over the bar.

Fortunately, far sighted historians such as Henry Baynham orally recorded the experiences of men who served in the Navy of Victoria and Edward, a small number of whom were stokers. Baynham introduced a compilation of his recordings in *Men from the Dreadnoughts* which contains a full chapter on stokers, albeit we are only offered a brief outline of conditions of service before and during the First World War. Baynham interviewed fifty-one former naval ratings from a variety of branches and social backgrounds, although only seven had formerly served as stokers. Despite Baynham's sterling work in tracing and interviewing the experiences of these men for

⁴³ J.H.H., "Clear Lower Deck," 372.

⁴⁴ Lionel Yexley, *The Inner Life of the Navy* (London, Isaac Pitman, 1908) 70.

posterity, he resorted to the use of the negative stereotype when he observed that stokers were viewed by contemporary naval society as 'the lowest forms of marine life,' although he failed to provide any evidence to support this claim.⁴⁵

Peter Liddle also compiled an extensive oral history archive from personnel who had served in all three arms of the services during both World Wars. Liddle and his associates recorded over 440 interviews from former naval men who had served during the 1914-1918 era alone. These recordings and transcripts detail the lives and experiences of the officers and men who served in ships, submarines and the Royal Naval Air Service during the first great conflict of the twentieth century. However, even in this extensive collection, stokers remain a minority contributing to only twelve recordings out of the 442 naval subjects.

From a review of the literature thus far two patterns emerge. Firstly, it is clear that in writing the history of the engine room branch naval engineers have ignored the role of stokers or only marginally included them in passing. This is also true of the historians who have contributed to works on the social history of the lower-deck who likewise have marginalised or ignored stokers. Secondly, it is also clear that the tradition of stereotyping the stoker in a negative fashion is very much a part of history. Lavery's recent contribution breaks new ground with regards to identifying the role of stokers within the social history of the lower-deck. However, because Lavery ignores the negative stereotype and makes no comments on its use by others, he provides no answers as to why it has been so successfully applied to stokers in the past. Apart from Lavery's singular important work, the mass of the available literature which covers the social history of the lower-deck ignores or downplays the contribution of stokers; therefore, it is of little use to this thesis. As a result, this thesis will rely on other sources including oral history in order to determine the reasons why stokers were regarded as the 'lowest of the low.'

⁴⁵ Henry Baynham, *Men from the Dreadnoughts* (London, Hutchinson, 1976). 155.

The Methodology of this thesis

The naval lower-deck was a complex hierarchical society and even though it was composed of working-class men their status was determined by the branch of service to which they belonged. Therefore, as the lower-deck hierarchical structure is a relatively unexplored and complex aspect of lower-deck life, it was decided to adopt a social history approach to this thesis in order to examine the structure from the 'bottom up.' The second approach was to use oral history to allow the stokers who served to write the history of their branch from their own experiences. In order to gain a balanced and unbiased view of their social position, oral testimony will be introduced from ratings and officers from other branches and specialisations. This additional material will offer insights into the relationships between stokers and other men and allow comparisons to be made while highlighting where bias, prejudice and stereotyping originated in the stokers' story.

The Popular Culture of 'Navalism'

The main aim of this thesis is to explore the social history of naval stokers in order to re-define their position within the naval social hierarchy and to determine why they attracted such negative stereotypes. However, a social history such as that proposed cannot be explored in isolation. The 'modern' Navy of the emerging twentieth century was an integral part of British social, cultural and political life such that it generated its own 'popular culture of navalism.' Mary Conley makes the point in *From Jack Tar to Union Jack* that Britain's national identity had long been defined by its position as an island nation, its relationship to the sea and its reliance on the Navy. By the late Victorian and early Edwardian period the popular culture of navalism was embedded in the public consciousness and displayed in mass public attendances at fleet reviews, naval exhibitions and warship launches.⁴⁶ Moreover, the culture of the Navy was celebrated and promoted in British society through advertisements depicting sailors using popular products, through music, boys' stories, exhibitions, pageantry and spectacle.⁴⁷

⁴⁶ Mary A. Conley, *From Jack Tar to Union Jack*, 6.

⁴⁷ *Ibid.*

The way in which Britain and Germany celebrated the Navy and the sea during the imperial age was described by Jan Rüger in *The Great Naval Game*, as bordering on an 'obsession.'⁴⁸ This celebration led to a host of rituals that placed the Navy and nation on the public stage creating a 'naval theatre' which the authorities used to promote the Navy and to educate the public.⁴⁹ However, while the authorities attempted to utilise the naval stage for their own interests, Rüger noted that they had to acknowledge that the forces of mass culture had a strong grip on this arena.⁵⁰ The stokers' disturbances that took place at Portsmouth barracks in 1906 is a case in point. While most naval mutinies generally occurred in ships at sea or in naval dockyards prohibited to the public and press; this affair became a public spectacle played out in full view of the citizens of Portsmouth and avidly followed by the popular press. Although relatively minor in scale, the events at Portsmouth had a long-lasting effect on both the public's attitude towards stokers and to their future position within the service hierarchy which may account in part for their perceived position as the 'lowest of the low.' The disturbances at Portsmouth will be examined in more detail in chapter seven.

Another form of public education was the advent of the campaign for 'National Efficiency.' In his *The Question of National Efficiency*, G.R. Searle suggested that the twentieth century began with the catch-phrase 'National Efficiency' or simply 'Efficiency'.⁵¹ The term 'National Efficiency' was both acknowledgement that Britain as a great power was in decline and also a policy to aid recovery. As such, it was a convenient label under which a complex system of beliefs, assumptions and demands could be grouped and driven forwards by powerful political and public groups in British society. Through a process of 'efficiency' it was hoped that Britain would be more adequately prepared for the Great Power rivalries of the coming century. Among the

⁴⁸ Jan, Rüger, *The Great Naval Game: Britain and Germany in the Age of Empire*, (Cambridge, Cambridge University Press, 2007), 1.

⁴⁹ *Ibid*, 9.

⁵⁰ *Ibid*, 90.

⁵¹ G.R. Searle, *The Quest for National Efficiency: A Study in British Politics and Political Thought, 1899-1914*, (London, Basil Blackwell, 1990), 2.

programmes and ideologies of the efficiency movement were those of tariff reform, compulsory military service and eugenics.⁵²

The idea of compulsory military service and eugenics went hand in hand and stemmed in part from the poor quality of recruits that presented themselves for service to the Army during the Boer War. Searle noted that out of 11,000 volunteers for Army service 8,000 were deemed unsuitable while a further 2,000 were only considered fit for the home based militia.⁵³ Journalists and politicians discussed this problem in language that bordered on panic, leading to a fear that the physical stock of the nation had degenerated.⁵⁴ This fear led to a call for the improvement of the 'National Physique'.⁵⁵

Then again, Richard Price in *An Imperial War and the British Working Class*, described the recruiting pattern for the Boer War as an 'interesting phenomenon' which suggests that there may be more to the recruiting pattern for the war than the lack of physique of the recruits as suggested by Searle.⁵⁶ For example, Price observed that the bulk of recruitment for the war came from three specific groups from the established Volunteer movement which included 'active service companies,' 'City Imperial Volunteers' and the 'Imperial Yeomanry.' Many of these units were raised and financed by private individuals and while they contained an element of working class men, Price determined that the force was dominated by men who were 'certainly not working class in status or attitude'.⁵⁷ However, as the Boer War became more unpopular the number of volunteers from the working class increased while the numbers of middle and upper-class volunteers decreased. Price suggested that this anomaly could be explained by the fact that volunteering for the Army (or Navy) was always related to the labour market. Unemployment which had remained low since the mid-1890s began to rise during the Boer War years while at the

⁵² G.R. Searle, *The Quest for National Efficiency*, 61.

⁵³ *Ibid*, 60.

⁵⁴ *Ibid*, 61.

⁵⁵ *Ibid*.

⁵⁶ Richard Price, *An Imperial War and the British Working Class: Working Class Attitudes and Reactions to the Boer War 1899-1902*, (London, Routledge, 1972), 178-81.

⁵⁷ *Ibid*, 199.

same time real wages started to fall making the armed forces a more attractive prospect.⁵⁸

An inter-departmental committee set up to investigate the poor standard of recruits for Army service reported that the health and physique of army recruits was not an accurate reflection of the physical state of the nation as a whole.⁵⁹ Indeed, Professor Cunningham pointed out to the Royal Commission on Physical Deterioration:

when trade is good and employment plentiful it is only from the lowest stratum of the people that the Army receives its supply of men.....when trade is bad, a better class of recruit is available.⁶⁰

This is an important point with regards to the nature of the man who volunteered to join the Navy as a stoker. All of the former stokers that have been used as subjects for this thesis were ordinary working-class men, indeed many of them were skilled workers while others had served formal apprenticeships. Moreover, they all joined the Navy out of economic necessity after losing their jobs during periods of economic downturn when employment opportunities were limited. Therefore, they would have met the criteria identified above which would have arguably made them a 'better class of recruit,' than the type that may have joined when work had been more plentiful.

With regards to the 'cult' of the Navy, Mary Conley suggests that its heightened profile within society enabled men of the lower-deck to reject the traditional portrayal of 'Jack Tar' and to assert themselves as educated, responsible professionals.⁶¹ They were supported in this respect by a number of dedicated navalists particularly journalists and novelists such as Fred Jane and Rudyard Kipling *et al* who justified greater naval spending by championing the lives of the hard-working lower-deck. Moreover, Conley noted that both navalists and lower-deck advocates recognised that the persistent caricature of

⁵⁸ Richard Price, *An Imperial War and the British Working Class*, 211-2.

⁵⁹ *Ibid*, 61.

⁶⁰ 'Minutes of Evidence before the Commission on Physical Deterioration,' (Reports, vol. XXXII) Cd. 2175 (1904) in R. Price, *An Imperial War and the British Working Class: Working Class Attitudes and Reactions to the Boer War 1899-1902*, (London, Routledge, 1972), 211.

⁶¹ Mary A Conley, *From Jack Tar To Union Jack*, 123.

the traditional drunken and irresponsible 'Jack Tar' jeopardised the Navy and its men. In its place, a new image of the sailor was constructed that celebrated the modern bluejacket for his professionalism, discipline, intellect and domesticity. As a consequence, Conley maintains that despite the increasing challenges to British authority from within and from abroad, the symbol of the British bluejacket could at once embody and safeguard the Navy, the nation and the Empire.⁶²

However, while the bluejacket of the emerging twentieth century had never been so popular in the public consciousness, his desire to re-invent himself into a modern professional would be seriously handicapped by the Admiralty he served. In the first place, the naval service was hidebound and steeped in tradition particularly when it came to its responsibilities towards the lower-deck. This was evident in the stark contrast between the state of the art warship *Dreadnought* commissioned in 1906 which was equipped with world leading armament and machinery and the archaic conditions under which the ship's company lived and worked. In order to establish the social order of the lower-deck and the position of stokers within it will require a review of the contemporary conflicts that took place between the lower-deck and the Admiralty over service conditions during the early decades of the twentieth century.

The structure of this thesis

Following the traditions of social and oral history, this thesis will examine the work, reputation and social position of stokers during the heyday of coal-firing. The thesis has three main aims. The first is to give stokers a historical identity free from stereotyping and prejudice. The second is to investigate the myths and misconceptions that have sullied the name and reputation of stokers. The final aim is to determine whether stokers deserved to be regarded as the 'lowest of the low,' with regard to their social standing and reputation in the Navy and history.

⁶² Mary A Conley, *From Jack Tar to Union Jack*, 124.

There are eight chapters. The chapters follow a chronological order and focus on a particular aspect of a stoker's life, work and relationships with officers and other ratings. The chapters will highlight the dominance of the seaman branch on the lower-deck and the difficulties experienced by stokers in establishing their own identity.

Chapter one (Introduction-stokers in history) highlights the limited attention stokers have received from historians while exploring the negative stereotypes that invariably accompany any historical reference to them. In order to redress the balance the chapter argues that stokers require their own historical identity free from stereotyping and prejudice. The chapter suggests that prejudice and discrimination have been responsible for many of the myths which have blighted the history of stokers and have collectively resulted in stokers being regarded as ill-disciplined, uneducated and occupying the lowest position within the lower-deck social structure.

Chapter two ('Down below' – life in the stokehole) will explore the introduction of the stoker into the Navy and chart the changes to his status from his modest early nineteenth century beginnings through to the heyday of coal-firing during the First World War when stokers briefly became the largest branch of men on the lower-deck. The chapter will explore the recruitment, training and work of stokers and will highlight the prejudice and stereotyping that came to be associated with their work in the stokehole. During the nineteenth century stokers were regarded as skilled men, however their status changed at the end of the century amid controversies over the introduction of the water-tube boiler. These controversies would later form part of the folklore which condemned stokers as unskilled and uneducated and contributed to them being relegated to the position of 'lowest of the low' by the service and future history.

Chapter three (Heatstroke, stokers' cramp and other stokehole maladies) explores the occupational accidents, illnesses and medical conditions that were a unique, and often life threatening aspect, of a stoker's work. The chapter will examine the debilitating conditions of heat stroke and stokers' cramp brought about through hard labour under extreme conditions of heat. It will highlight the

lack of medical knowledge of the time into these occupational conditions and the lack of interest shown by the Admiralty into the well-being of those who toiled below. In addition, the chapter will investigate the concept of 'over-driving,' which was a strategy employed by stokers in order to combat the onset of fatigue and to prove to others that they could handle anything the Navy could demand of them.

Chapter four ('Off watch'- mess deck affairs) will explore the domestic aspects of lower-deck life including life in barracks and onboard ship, naval victualling, canteens, and welfare representation. It will assess the extent that disputes and challenges to the status quo affected relationships between stokers and others and explore the animosities that bred inter-branch rivalries. Despite the 'cult of navalism' described in the introduction and the re-invention of 'Jack Tar' into a disciplined, intellectual professional man, his life on the early twentieth century lower-deck was virtually unchanged from the life of the sailor who served during the late eighteenth century. While the Admiralty may have kept abreast of technological changes it proved to be very unwilling to improve the conditions of the lower-deck. As a result, it was left to outsiders and the men themselves to seek redress. The chapter will analyse the reasons why stokers failed in their attempts to improve their conditions of service leaving them as the 'lowest of the low,' while much smaller branches succeeded in improving their position.

Chapter five (Working relationships and social hierarchies) will examine the interaction between ratings and branches and explore the complex social criteria that determined the relevant position of each branch within the complex hierarchical structure that made up the lower-deck. The chapter will argue that while mutual trust and respect existed between stokers and E.R.As, working relationships were never properly established between stokers and seamen. The open hostility and mistrust which existed between stokers and seamen could have resulted in a power struggle between the two largest groups of men on the lower-deck. However, seamen successfully maintained their traditional superiority by condemning stokers to the position of 'lowest of the low,' a position from which stokers were unable to challenge.

Chapter six (New technologies: oil fuel and submarines) examines the opportunities these technologies provided for stokers to improve their lives, opportunities and working conditions. The chapter will argue that the submarine service ethos of 'all of one body' ensured that submarine stokers enjoyed equal status and parity with seamen so that the prejudice and discrimination that existed within general service was entirely absent in submarines. However, while the introduction of oil fuel removed the manual labour and drudgery of the stokehole from stokers' lives, it arguably also removed their last vestige of admired proficiency as the skill of coal-firing was replaced by the automatic oil fuel sprayer at the boiler front.

Chapter seven (Stokers-the weakest link?) will challenge the common contemporary perception, that still exists among certain historians, that stokers were the 'weak link' in the chain of naval discipline. The chapter will explore the 1906 Portsmouth barracks disturbances together with other examples of insubordination and mutiny in order to assess the extent to which service and public attitudes contributed towards the negative stereotypes that were applied to stokers. The extent to which stokers engaged in collective disobedience and mutiny compared to that committed by seamen will be assessed and the results will be analysed in order to judge whether the embedded perceptions of stokers' ill-discipline was accurate and deserved.

Finally, chapter eight (Conclusion: 'A very inferior class of men'- A reappraisal of the myth) draws all of the available evidence together in order to reach the conclusion that stokers were discriminated against through prejudice and stereotyping on account of their perceived 'dirty work.' As a result, stokers have been marginalised by history and their story has remained largely untold. What little story there is, remains shrouded in untruths and clouded by prejudice and myths which has reduced them to the 'weakest-link' in the chain of naval discipline and the 'lowest of the low' with regards to their social position within the naval social hierarchy.

Chapter Two

'Down below' – life in the stokehole

The Emergence of the Stoker

The rating of leading stoker was introduced into the Royal Navy in 1842, and stoker and coal-trimmer in 1844. Even at this early stage, a stoker first class was notionally equivalent in rank to a leading seaman while a leading stoker was equal to a seaman petty officer because there was no equivalent rate of stoker petty officer. However, in relative terms because only seamen held executive authority the differential between each rank was limited to the rate of pay with a stoker earning more than a seaman of the next higher rate. Chief Stoker first appeared in 1864 but the rate was abolished at the end of 1868 with the introduction in 1869 of the E.R.A. Chief E.R.A. was introduced in 1877 and chief stoker re-introduced in 1885. The separate titles of stoker and coal-trimmer were merged into the single branch title of stoker in 1900 and the rate of stoker petty officer (S.P.O.) appeared in 1907.⁶³ Between the years 1871-1906 the non-substantive rate of stoker-mechanic existed which roughly equated to a stoker first class albeit the stoker-mechanic was considered to denote a 'highly skilled man.'⁶⁴ Stoker-Mechanics would have practical knowledge of an allied trade gained through examination and a practical test, for example boilermaker, fitter, furnace bricklayer etc. By 1906, the year it was abolished, approximately half of all serving stokers held the rate of stoker-mechanic. In May 1947 the rate of stoker mechanic was re-introduced to replace the rate of stoker in the rating titles. This title was changed again in 1955 when all stoker-mechanics were renamed engineering-mechanics.⁶⁵

Notwithstanding the fact that the rate of stoker did not become official until 1844, stokers were employed in the *Comet* when she first commissioned in 1822. Prior to the introduction of the E.R.A. in 1869, the personnel employed to

⁶⁴ Sidney Knock, *Clear Lower-Deck*, 50.

⁶⁵ Ministry of Defence, *The Stoker* (Royal Navy.mod.uk, 2009 [cited 18 July 2010]); cited in <http://www.royalNavy.mod.uk/surface-fleet/aircraft-carriers/hms-ark-royal/the-stoker>.

operate and maintain the boilers and engines in steam fitted ships consisted of engineers, assistant engineers, stokers and coal trimmers. On commissioning, the *Comet* had a complement of just eight men including an engineer and three stokers. By 1827 the *Comet*'s complement had been increased by an additional assistant engineer and an extra stoker.⁶⁶ The *Lightning* of 1828 had a similar complement which included a first and second engineer, two engineer apprentices, and three stokers. However, the *Lightning* did not appear to be fully manned, as the ship's Pay Book shows that she was authorised to carry a total of ten seamen ratings of whom 'five could be stokers'; this suggests that at this early juncture in the development of the steam-Navy, the position of seaman and stoker may well have been interchangeable.⁶⁷

Nonetheless, despite attracting a poor image and reputation much later in the development of the steam Navy, in these early days of steam propulsion stokers were considered to be a valuable asset to a ship. In his, *Treatise on Navigation by Steam*, Captain John Ross suggested that stokers were so essential to the smooth running of the ship's engines he advocated that they should be:

Employed solely on their duties in the boiler room and are to be relieved every two hours and awarded a double quantity of beer or other beverage while so employed.'⁶⁸

Furthermore, Ross recommended that stokers were to be 'regularly bred' for their calling, arguing that it was a mistake to believe that ordinary seamen were able to tend the fire as well as a qualified stoker. Moreover, he argued that by keeping a better fire, a stoker would be able to apply a more steady heat on the boiler, which would result in considerable fuel savings.⁶⁹

⁶⁶ TNA, ADM 35/4426 '*His Majesty's Steam Vessel Comet: Pay Book*,' ed. Admiralty (Admiralty Archives Portsmouth, 1822).

⁶⁷ TNA, ADM 35/4426, '*His Majesty's Steam Vessel Lightning: Pay Book*,' ed. Admiralty (1828).

⁶⁸ John Ross, *A Treatise on Navigation by Steam: Comprising a History of the Steam Engine, and an Essay Towards a System of the Naval Tactics Peculiar to Steam Navigation, as Applicable Both to Commerce and Maritime Warfare; Including a Comparison of Its Advantages as Related to Other Systems in the Circumstances of Speed, Safety and Economy, but More Particularly in That of the National Defence* (London, Longman, Rees, Orme, Brown and Green; And Blackwood, 1828; reprint, LaVergne, TN USA, 28 December 2010), 83.

⁶⁹ *Ibid*, 40.

Ross was also influential in recommending the minimum levels of manning for steam vessels by stipulating that every steam-fitted ship would require one head-engineer, one assistant engineer, and one head foreman. With ships fitted with engines rated up to forty-horsepower, Ross calculated that three stokers would be sufficient, with an extra stoker added to the complement for every additional twenty-horsepower delivered.⁷⁰

Engineers at this time were little more than semi-skilled 'engine-drivers,' or men with limited technical ability recruited from engineering firms or from the few steam factories then in existence. As a result of their lack of formal qualifications, the early engineers were only accorded the status of petty officers, but without the authority of the rank or the right to wear service uniform. In similar vein, stokers were not given any formal training and therefore could be considered to have been unskilled, or at the best, semi-skilled men. However, Walton suggested that 'mechanically competent stokers' occupied the place of artificer engineers a decade before artificer engineers were formally established.⁷¹ Therefore, there must have been a number of stokers who demonstrated technical competence over and above that expected.

The ad hoc nature of manning steam vessels was eventually put on a proper footing when an Order-in-Council dated July 1837 established the Engineering Branch as a formal part of the naval service. From this date, engineers were accorded the rank of warrant officer, although like seamen, stokers were still only engaged for the duration of a commission of an individual ship.⁷²

A superior class of Stokers

By 1853 sixth rate steam vessels with complements of 200 men were authorised to carry five leading stokers and twenty-one stokers or coal-trimmers,

⁷⁰ John Ross, *A Treatise on Navigation by Steam*, 40.

⁷¹ Oliver C. Walton, 'Officers or Engineers? The Integration and Status of Engineers in the Royal Navy, 1847-60,' *Historical Research* 77, no. 196 (2004), 200.

⁷² 'Orders in Council for the Regulation of the Naval Service: Ships Complements,' ed. Admiralty (London, HMSO, 1853). 41.

while vessels with complements of 175 men had four leading stokers and twenty stokers and coal trimmers respectively.⁷³ However, the one limiting feature which seriously affected the manning of the new steam-Navy was the continuing shortage of suitably qualified engineers. Compared with the much better pay and conditions of service to be found in either a steam factory or in the lucrative merchant service, the Royal Navy found itself unable to compete in the recruitment of engineers. This shortage led to a recommendation put forward by the Committee on Marine Engines in 1859 which argued for a reduction in the numbers of assistant engineers to be replaced with a superior class of stokers.⁷⁴ However, this proposal was dismissed by the Admiralty surveyor who agreed that while there were 'slight grounds' for proposing that assistant engineers should be sent to the Admiralty factories to be tested for their efficiency, he could see no reason whatsoever to replace them with stokers who he considered to be a 'very inferior class of men.'⁷⁵

The question of replacing a number of assistant engineers with superior stokers was debated a second time by the committee who made another proposal, this time for the establishment of a superior class of 'Chief Leading Stokers' at the rate of two Chief Leading Stokers for each assistant engineer reduced from the complement.⁷⁶ In response to this proposal, Rear-Admiral Sir Baldwin Walker the Surveyor of the Navy, admitted that during the Russian War of 1854-1855, the Navy had been so short of assistant engineers despite resorting to the recruitment of temporary engine drivers and workmen from government factories, that it had been forced to employ suitably qualified stokers to make up the deficiencies.⁷⁷ The committee's report shows that in November 1855 the decision was taken to reduce the numbers of assistant engineers then serving in ships fitting out for war service and to replace them with suitably qualified leading stokers or stokers with the attraction of additional pay set at the rate of two shillings a month. Having issued a circular to all ships to forward names of suitably qualified men, ninety-two ships replied forwarding

⁷³ Orders in Council for the Regulation of the Naval Service: Ships Complements, 41.

⁷⁴ 'Report to Admiralty by Committee on Marine Engines,' ed. Admiralty (House of Commons, 183, 1859).16.

⁷⁵ Ibid. 17.

⁷⁶ Ibid. 20.

⁷⁷ Ibid.

sixty-seven names of leading stokers and stokers considered suitable to undertake the duties of assistant engineer.

Despite the support from the fleet to replace assistant engineers with stokers, the Surveyor would not commit himself to the proposal. He considered 'that no great reliance could be placed on this resource', although he admitted that it would be 'unwise to absolutely reject it before an absolute necessity arose.'⁷⁸ While the Surveyor admitted that in time of war, stokers would 'doubtless be found to be useful auxiliaries and would therefore be employed as engineers', he did not believe there was a sufficient need to employ them in that capacity at that time.⁷⁹ Nevertheless, Joshua Field of Maudslay Sons and Field, the Thameside engineers, recognised as early as 1830 that the poor treatment and indifferent service attitudes towards naval engineers had been driving the best of them out of the service. This led Field to voice the opinion that this had led to the advancement of second and third engineers, 'and even stokers,' to the position of first engineer.⁸⁰

The hardships of a stoker's work were obvious, however there did not appear to be any shortage of men wishing to become stokers. The committee formed in 1859 to investigate the 'Best Means of Manning the Navy' questioned Rear Admiral Milne as to whether it would have been desirable to increase the numbers of stokers then currently employed.⁸¹ In reply Admiral Milne offered the observation that there appeared to be 'plenty of volunteers to go stoking', adding, 'everyone goes stoking if he can.'⁸² However, Milne may have underestimated the demands required of a stoker on watch below. A later committee investigating future ship design noted that existing ship's complements were merely 'skeleton complements' which would require a large increase in time of war. Moreover, it was suggested that the complements of stokers then allowed were 'little more than enough to maintain ironclads at ten

⁷⁸ 'Report to Admiralty by Committee on Marine Engines,' 20.

⁷⁹ Ibid.

⁸⁰ J. Field, 1830 in Basil Greenhill, and Anne Giffard, *Steam, Politics and Patronage*, (London, 1994), 85-6.

⁸¹ Charles Philip the E. Hardwicke Yorke, '*Report of the Commissioners Appointed to Inquire into the Best Means of Manning the Navy*', ed. Admiralty (House of Commons, 1859). 17.

⁸² Ibid.

knots speed continuously with the stokers in three watches.⁸³ Furthermore, it was put to the committee that if full speed was required to be maintained for twenty four hours with the numbers of stokers then allowed, the men would have to be worked in two watches, watch and watch about, which the committee advised would undoubtedly lead to the men becoming 'utterly worn out.'⁸⁴

The fears of this committee with regards to the lean manning of stokers appeared to be borne out when evidence from a six hour steam trial was submitted which disclosed that despite manning the stokehole with a large party of carefully selected stokers and using the very best Welsh steam coal, the stokers were unable to maintain full steaming for the fifth and sixth hours of the trial owing to fatigue.⁸⁵ Despite this evidence it is apparent that the committee did not regard the application of twenty-four hours steaming at full power to be beyond the remit of any stoker. In an argument to support the adoption of thirteen and a half knots as the optimum full speed to be maintained for forty-eight hours, the committee advised the Admiralty that, if stokers were not to be unduly fatigued in maintaining this speed, their 'indifference and inferior physique would need to be improved.'⁸⁶

With this proposal in mind a suggestion was made to the committee that stokers should be recruited from the 'same class and style of men to be found in the stokeholes of the great steam-companies.' The conclusion was drawn that if stokers were not physically able to meet the demands of a ship's full power capabilities then the official speed claimed for each class of vessel would need to be reduced, in order to compensate for the failure of stokers to maintain the best speed for the required length of time.⁸⁷ If this were to be the case, the committee argued that, 'should the latter option be adopted, then most fourteen knot steamers would be reduced in the records to ten knot vessels.'

⁸³ G. Elliot and A. P. Ryder, 'Members of Committee on Designs for Ships-of-War, Dissenting from Report of Committee' (1872). 17.

⁸⁴ Ibid.

⁸⁵ Ibid.

⁸⁶ Ibid.

⁸⁷ Ibid.

Furthermore, the claim was made that:

It was an absolute necessity that the Navy required not just efficient engines, but a sufficient crew of stokers to work them continuously and if necessary, at high speed and in three watches, just as it was for a ship to have full sail equipment and an adequate number of the right able-bodied seamen to bring out its full value.⁸⁸

The apparent under-manning of stokers stemmed from an earlier Admiralty decision with regards to manning ships fitted with full sailing rigs and screws which could be hoisted clear of the water. As sails were usually used for passage wherever possible, the engines were used infrequently resulting in a lack of work for the stokers. As a result, the Admiralty decided in 1854 to reduce the complement of stokers. However, in so doing it transpired that should the ship wish to raise steam there would be too few stokers to man the stokeholes and also act as coal trimmers. Therefore it was decided to employ seamen and others to undertake the duties of coal-trimming whenever the burden fell too heavily on stokers. In addition, the Admiralty decided that if a ship needed to steam at full power for any length of time, the men recruited as coal trimmers could also be used to supplement the stokers in the stokehole. As a result, these men were entitled to draw the relevant stokers' rate of pay.⁸⁹

Training for the stokehole

In evidence to the Manning Committee Admiral Milne stated that stokers 'received instruction in stoking;' although he confirmed they were not required to pass any examination to confirm their skills or competence.⁹⁰ However, the instruction Milne referred to was 'on the job instruction,' as stokers did not receive any formal training in mechanical skills prior to joining their first ship. At the time of the 1859 manning enquiry, stokers joining the Royal Navy were processed in one of the main naval depots, namely Portsmouth, Devonport, Chatham or Sheerness, where they received their initial kit and bedding issue.

⁸⁸ G. Elliot and A. P. Ryder, 'Members of Committee on Designs for Ships-of-War, 32.

⁸⁹ C. P. the E. Hardwicke, Yorke, 'Report of the Commissioners', 460.

⁹⁰ Ibid.

From there they were drafted as second class stokers directly to their first ship where instruction in stoking was given 'on the job.'

The first indication that stokers received any formal naval, military or mechanical training is to be found in an Admiralty 'Orders in Council' dated 1886 which stated:

It is desirable to make provision for training Chief Stokers, Leading Stokers and Stokers in the use of arms and in the management of the machinery and boilers of Torpedo Boats, and to give extra remuneration to men who give proof of satisfactory proficiency in these subjects. Any Chief Stoker, Leading Stoker or Stoker who is qualified in Torpedo boat work and can pass the examination for trained man in cutlass, rifle and pistol exercises shall be rated 'trained man' and receive a penny a day extra pay.⁹¹

However, this training was for 'torpedo boats' only. The lack of formalised training for stokers was still a cause for concern after the 1888 naval manoeuvres when a report to the Admiralty claimed:

I cannot urge too strongly upon their Lordships' consideration the inadequacy of the engine-room complements of modern ships and cruisers; not only does this apply to the number of ratings authorised, but to the fact that so large a proportion of the crews comprise stokers 2nd class, and large number of the stokers are men who have been advanced to that rating for drafting purposes while still untrained. I had been led to believe that there was a proper standard as regards to height and chest measurement for stokers; but judging by their physique generally, it would appear that such is not the case. The men are willing enough, and do their best but are quite incapable of undergoing the labour required, nor, in fact can it be expected of them since they become exhausted and faint.⁹²

The topic was raised again in 1891 in a proposal for improving the training of stokers which argued:

The training of military branches of the Royal Navy, including Officers, warrant officers, seamen-gunners, torpedo-men, seamen, marines and marine artillery men, with coastguard and other reserves, appears to be most complete; and everything is done that experience can suggest. The result is that from a purely

⁹¹ 'Orders in Council for the Regulation of the Naval Service 107: 'Training Stokers to Arms and Management of Machinery and Boilers of Torpedo Boats,' ed. Admiralty (London, HMSO, 1886).

⁹² J Langmaid, 'A Proposed Method of Training Naval Stokers, and Otherwise Increasing the Efficiency of the Steam Branch Personnel,' *Royal United Service Institution* 35, no. 156 (1891). 110.

military point of view, our Navy is in a very satisfactory condition. With stokers the case is altogether different. Our ships are commissioned and sent to sea with a large proportion of the stoker complements totally untrained in their duties; the consequence is that for months after a ship is commissioned she is not in a fit condition to meet an enemy.⁹³

It was also pointed out that in 'modern' ships where the stoker complement was equal in numbers to that of the seamen, seamen were fully trained men. Stokers by contrast, were said to have had 'no training whatsoever in boating or the other necessities of a sea-going life.' Therefore, it was proposed that all stokers on entry should be sent to a central training ship for three months followed by a further three months sea experience in a cruiser. It was envisaged that at the end of this six month training period, the newly rated stoker could be sent to a sea-going ship in order to consolidate his training.⁹⁴

A training syllabus was proposed which consisted of basic stokehole training including the various parts of boilers and engines, the names and uses of common tools and fire-irons and instruction in reading a pressure gauge. In addition, it was recommended that stokers be taught how to understand engine telegraphs, the use of voice pipes and instruction in shutting a steam stop-valve in an emergency. The more intelligent men were to be taught the first principles of the steam-engine, the use of a vacuum and the actions of pumps. Citing the need to train stokers in the correct use of a shovel prior to going to sea, the Chief Engineer described the difficulties of firing a furnace seven feet long by three and a half feet wide through an opening fourteen inches by nine inches sited level with a man's chest; a difficulty increased by the rolling action of the ship. With this in mind he recommended that firing instruction take place ashore in an instruction room fitted up with a 'few dummy furnaces including high and low ones.' He recommended that coals would not be required for this training suggesting that a 'cart-load' of macadam stones would serve instead and also prevent waste.⁹⁵

⁹³ J Langmaid, 'A Proposed Method of Training Naval Stokers,' (1891), 109.

⁹⁴ Ibid, 110.

⁹⁵ Ibid, 113.

Acknowledging that some rifle and cutlass drill was already taught to stokers, it was suggested that boat-work should also be introduced together with 'ambulance drill' as stokers were 'particularly exposed to the dangers of burns and scalds.' Finally, in order for stokers to become regular 'jack of all trades' it was suggested that they should be taught 'miscellaneous duties' such as mixing cement and mortar, laying firebricks and re-building furnace bridges while 'school-work' would prove beneficial if time allowed.⁹⁶ After sixty-eight years of existence in the Navy, formal military training for stokers was finally introduced in 1891 although provision for shore based mechanical training was not introduced until 1900.⁹⁷

The introduction of the water tube boiler

The under-manning of stokers, together with stokers' training, came to a head with the adoption of the French designed 'Bellville' water tube boiler in the closing years of the nineteenth century. Prior to the introduction of the water tube boiler, ships were fitted with simple cylindrical boilers that were relatively large and easy to operate and maintain. In cylindrical boilers the heat and gases from the combustion of coal in the furnace was transmitted through a small number of large diameter fire tubes immersed in water. By 1878 the *Inflexible* was able to produce steam at sixty-pounds per square inch, while the large volume of water contained in her cylindrical boilers made it relatively easy for stokers to maintain a safe working level of water in the boiler.⁹⁸

By comparison, the water-tube boiler was much smaller in size and contained hundreds of small diameter tubes, these contained the boiler water and were exposed to the direct heat of the furnace gases. This method generated steam at a higher pressure than the fire-tube boiler. However, being physically smaller in size, the water tube boiler could not hold the same volume

⁹⁶ J Langmaid, 'A Proposed Method of Training Naval Stokers,' (1891), 109.

⁹⁷ 'Orders in Council for the Regulation of the Naval Service 119: *Allowance for Instruction of Stokers in Use of Small Arms, Boat Pulling Etc*,' ed. (Admiralty, London, Eyre and Spottiswode for HMSO, 1891).

⁹⁸ D, Griffiths, *Steam at Sea: Two Centuries of Steam-Powered Ships*, (London, 1997) 83.

of water than its larger predecessor. Therefore, many more water tube boilers were required to produce a given horsepower, together with a much more complex and technically demanding boiler water level system to maintain a safe working level at all power levels.

As an example, the protected cruiser, *Minerva* was fitted with eight large cylindrical boilers, whereas the second-class protected cruiser *Highflyer* of a similar tonnage had forty-eight, smaller, water tube boilers. Therefore, ships fitted with water tube boilers required a much larger complement of engine room staff, particularly stokers, in order to fire and maintain the boilers. In addition, as water tube boilers were much more technically challenging to operate and maintain than cylindrical boilers, engineers, E.R.As and stokers required a higher degree of training than was previously required. This fact was colourfully described in a parliamentary debate on the Belleville boiler when it was suggested that:

The Belleville boiler is such a box of tricks as never before was put into a ship. It is like a lady's watch, always getting out of order and requiring most delicate handling. It requires to be stoked to a nicety, and when defects occur they require to be repaired to a nicety. If you are to live with the Belleville boiler you must treat stoking no longer as unskilled or quasi-unskilled labour; it is a fine art, and you require artists to do it. How are you to get them? Other nations have been in the same difficulty as we are in, but France got out of the difficulty by doing as I now venture humbly to suggest the right hon. Gentleman should do namely, obtain instruction from the Belleville Company itself in stoking as a fine art. Will the right hon. Gentleman do that? I feel very strongly the urgency of this matter. I believe that no other Belleville boilers ought to be put into Her Majesty's ships, but we have sixty-one ships with them, and the right hon. Gentleman should take the means open to his hand for using them to the best advantage. Let him set up a school of stoking, and send for two or three French stokers from the Belleville Company, to teach our men the art of stoking. Those men could then teach others, and in course of time we should learn to stoke the Belleville boiler. You cannot do it by leaving it to the unskilled stoker to learn it by himself, or if he should learn it in that way he will learn it too late. It may gall the pride of the right hon. Gentleman to go to France to be taught stoking, but this is a French dish, and if you wish to enjoy it you must have it done by a French cook.⁹⁹

⁹⁹ Gibson Bowles, 'Navy Estimates for 1900-1; with Explanation of Differences (Navy, Annual Estimates),' (London, House of Commons, 1901), 285.

Therefore, as the Navy entered into the first decade of the twentieth century, it appears that in some quarters at least, 'stoking' had been elevated from an unskilled or semi-skilled position to that of a 'fine art.' However, despite the plea for stokers to be taught the art of stoking Bellville boilers, the First Lord of the Admiralty admitted:

the personnel of the Fleet had increased at so large a rate it had been impossible to give the full training to the younger men we should like.¹⁰⁰

Despite this admission the F.L. suggested that he would 'not shrink from putting water tube boilers into commission;' 'not only with the object of seeing whether they have defects, but also in order to accustom as many engineers and stokers as possible in the use of the water tube boiler.'¹⁰¹

Stoker Arthur Lilley began his initial stoker training in Devonport onboard the steam and sail harbour training ship *Phaeton* in 1910, some nine years after the admission that there had been difficulties in training sufficient numbers of stokers in the operation of water-tube boilers. Bizarrely, Lilley and his peers were taught the theory and practice of cylindrical boilers using *Phaeton's* old fashioned boilers before they moved onto the *Andromeda* and *Amphitrite* for the practical firing stage of their training which was conducted on water-tube boilers.¹⁰² Training the men on two vastly different technologies could hardly have prepared them for the safe operation of the machinery they would have found on joining the fleet.

The fact that the Royal Navy had committed itself to the introduction of the Bellville boiler but had not implemented a training programme is all the more remarkable when compared to the training arrangements of less technically advanced countries. The Russian Navy for example, also saw the benefits of the water-tube boiler, however, unlike the Royal Navy it made the decision to send its engineers and stokers to France to be trained by the Bellville boiler company prior to the boilers being installed in their ships. Moreover, whereas

¹⁰⁰ Gibson Bowles, 'Navy Estimates for 1900-1.'

¹⁰¹ Ibid.

¹⁰² A. E. Lilley, *I.W.M. 750* (London, Imperial War Museum Sound Archive, 1976), Audio Tape 8 Reels. Reel 2.

stokers in the Royal Navy were trained on obsolete cylindrical boilers and machinery and then often drafted to a modern ship fitted with Bellville boilers or similar type, Russian engineers and stokers were trained on the type of boiler fitted to the ship they were selected to join.¹⁰³

Russian stokers sent to learn their trade at the Bellville factory may have been specially selected from amongst their peers. Compulsory military service had been introduced for all Russian males over the age of twenty years of age from 1874 which had led to very high levels of illiteracy amongst new recruits to Russian military and naval service. As a result, the Russian stokers selected for water-tube boiler training in France would probably have been amongst the more literate of recruits.¹⁰⁴ Amongst this class of men was the Russian-German settler Phillipp Frick, a skilled cobbler who was drafted to join the tsar's Navy as a stoker in early 1901 at the age of twenty-one. On entering the Russian Navy, Frick was sent to the School of Stokers for training before joining the brand new first-rank cruiser *Variag* [*Varyag*] at Kronstadt naval base in May 1901.

Notwithstanding the factory training undertaken by Russian stokers discussed above, the *Variag* appeared to suffer from similar problems to those experienced by the Royal Navy with regards to the operation of her water-tube boilers which were said to have 'plagued' the stokers with frequent breakdowns.¹⁰⁵ Moreover, while Frick was literate, many of the *Variag's* ship's company were not, which must have made training the men in technical trades extremely difficult. As a result, a systematic educational and training programme was instigated onboard the ship with the primary aim of teaching the men to read and write.¹⁰⁶

By contrast, the Chief Engineer of the Royal Navy suggested that the proposed changes to the training syllabus for stokers may have been considered by some to have 'gone too far,' implying that it may have been

¹⁰³ 'Russian Navy: The Armament and Equipment of the Fleet,' in *The Russo-Japanese War Research Society* (2002).

¹⁰⁴ Alexander Dupper, 'Phillipp Frick a Stoker in the Imperial Russian Navy,' *American Historical Society of Germans from Russia* 5, no. 4 (1982), 92.

¹⁰⁵ *Ibid*, 11.

¹⁰⁶ *Ibid*, 92.

beyond their capabilities. Nonetheless, the Chief Engineer claimed that the advance in education over the preceding years had produced men who acquired knowledge and who often showed themselves to be 'really intelligent.'¹⁰⁷ Mary Conley made this point by observing that naval writers and serving men considered that the effect of education had changed the whole character of the lower-deck.¹⁰⁸ At the turn of the nineteenth century Henry Capper, a former chief gunner who later reached the rank of lieutenant commander, put the improvement of the lower-deck down to the 1870 Education Act which he claimed had removed illiterates from the Navy.¹⁰⁹ Similarly, Rear-Admiral Thomas Spence Lyne who became the first man promoted from the lower-deck to Admiral's rank since 1818 on his retirement in 1931, suggested that as far as the education of the lower-deck was concerned, 'the country was beginning to get value for money.'¹¹⁰

Stoker Arthur Lilley is a good example of a well-educated lower-deck rating. He was only sixteen years of age on joining the Navy suggesting that the recruiter who entered him turned a blind eye towards the regulations as Lilley was two years below the minimum age for a stoker. Nevertheless, Lilley had been in the top stream of Devonport School and was being groomed to sit the competitive dockyard apprentice examination but was forced to leave school at the age of fourteen to help his family out. After starting work Lilley continued his education by attending night school three nights a week where he studied subjects such as essay writing, mathematics, geometry and algebra. After eighteen months service in the Navy and while still only barely eighteen years of age, Lilley passed the naval educational certificate which qualified him to take on the duties of Assistant Naval Schoolmaster for which he received six pence a day supplement to his pay.

Despite claims that education had changed the nature of the lower-deck, the Admiralty did not appear to seek to nurture or develop the educational

¹⁰⁷ J Langmaid, 'A Proposed Method of Training Naval Stokers,' (1891), 112.

¹⁰⁸ Mary A Conley, *From Jack Tar to Union Jack*, 130.

¹⁰⁹ Henry D Capper, *Aft- From the Hawse Hole: Sixty Two Years of Sailors' Evolution*, (London, Faber & Gwyer, 1927), 166.

¹¹⁰ Mary A Conley, *From Jack Tar to Union Jack*, 130-1.

provision for the men. According to stoker Lilley, the naval education system for men at sea, 'even for a battleship with over one thousand men,' was not organised by commissioned officers who had a much better education but by the men themselves.¹¹¹ The normal schoolmaster complement for an average ship would comprise a sergeant of marines, a seaman rating and a stoker, all the schoolmasters having achieved their naval education certificate. As an assistant schoolmaster, Lilley taught men twice his age to read and write, recalling that at the time (1911) 'half the men in the Navy could not read,' therefore Lilley had to read their letters and answer them on their behalf.¹¹² Moreover, Lilley also found on his first ship that that while most men could understand their pay, many were unable to complete even simple arithmetic. When teaching numeracy, Lilley used a box of matches giving each man ten matches, one at a time, until the man could count to ten. He would then build on this, adding and subtracting matches until the man he was teaching could add and subtract satisfactorily.¹¹³

Stoker Henry Boin also left school at age fourteen and joined the Navy in 1917 at age eighteen. Boin recalled that he studied for the mechanic examination onboard the scout cruiser *Forward* under an assistant schoolmaster but was constantly ribbed by other stokers for his studies. As a mechanic Boin would have received an intensive two year engineering course to qualify him as a higher skilled man. Boin declared that many stokers were illiterate with the observation that 'more didn't go to school than did.' At the time Boin remembered that there was more emphasis on a stoker being a good worker than on whether he had completed any sort of education.¹¹⁴

Accidents and breakdowns in the stokehole

With the advent of new boiler technology and materials, working steam pressures began to rise. By the turn of the century the average boiler pressure

¹¹¹ A. E. Lilley, *I.W.M.* 750, Reel 1.

¹¹² *Ibid*, Reel 2.

¹¹³ *Ibid*.

¹¹⁴ Henry W Boin, *I.W.M.* 666 (London, Imperial War Museum Sound Archive, 1975), Audio Tape 3 Reels, Reel 2.

was 300 pounds per square inch (p.s.i.). Boiler explosions, steam leaks and the dangers posed from working around moving machinery were occupational hazards which had to be faced by stokers; therefore, as steam pressures increased so did the chances of a stoker being injured or killed.

In 1872 the *Thunderer*, sister ship to the first mastless ship *Devastation*, suffered a catastrophic boiler explosion which killed forty-five men including her captain despite her early 'box' type boilers being limited to the relatively low pressure of thirty p.s.i. This disaster led to the introduction of the cylindrical boiler and the publication of the first official Steam Manual in 1879.¹¹⁵ In 1887 an Admiralty paper was published outlining a number of accidents which had occurred on torpedo boat destroyers. The entry describing an incident on boat number 47 was typical for the period and simply stated:

Boiler furnace crown came down; engine room and stokehold staff scalded; three subsequently died. Accident caused by deficiency of water in the boiler.¹¹⁶

Two years later, the first class cruiser, *Terrible*, sister ship to the *Powerful*, two of the most modern ships of their day, suffered a boiler explosion in one of her forty-eight Bellville boilers caused by a burst tube which killed Stoker Edward Sullivan and injured three others. In 1901 the brand new Highflyer class cruiser *Hermes* was plagued by boiler problems during its first deployment to the West Indies station. While on passage, the feed water pumps failed and could not be restarted, as a consequence the boilers lost their water levels and the remaining water quickly evaporated causing the boilers to become 'red hot.' The stokers on watch were said to have become 'panic stricken', while the engineer lieutenant suffered a breakdown which required him to be invalided home. As it was thought the stokers might mutiny an executive lieutenant was dispatched from the upper-deck to the stokehole to maintain order.¹¹⁷

¹¹⁵ P. M. Rippon, *The Evolution of Engineering*, 69.

¹¹⁶ 'Return of Torpedo Boats of Navy Tested in Trials in Channel, May 1887,' ed. Admiralty, (House of Commons, 339, 1887).

¹¹⁷ Sir William, Allan, *Navy Estimates 1900-1*, 289.

However, in a parliamentary debate on this episode one member blamed defects with the machinery, rather than on the actions of the stokers when he argued:

British stokers will never hesitate to go into danger when it is necessary in the service of the country; but when a danger is gratuitously put upon them by having to attend boilers which are continually giving out and causing explosions at the most unexpected times, the result will be, as in the case of the '*Hermes*,' that insubordination will arise, necessitating a lieutenant to go down into the stokehole to maintain that discipline which the engineers have no power to keep because they are not executive officers.¹¹⁸

The pointed comment that 'engineers had no executive powers to maintain discipline', was an issue of the times and one which affected all non-executive officers and men including engineers, artificers and stokers. The traditional principle that only officers and men from the seaman or 'executive' branch could possess military authority over all others will be examined further in chapter five.

After a number of water tube boiler explosions in the last decade of the twentieth century, the Admiralty published a paper documenting the causes and the effects of each. The summary shows that between September 1894 and July 1901 there were eleven boiler explosions all caused by burst tubes in water tube boilers. These killed seven men and injured a further twenty. Following on from these incidents, and after concerns were raised with regards to the safety of Bellville type boilers, an Admiralty committee was formed in 1901 to investigate the use of 'modern' water tube boilers for naval purposes. The committee came to the conclusion that water tube boilers offered a real military advantage over cylindrical boilers; however it decided that due to the continuing problems of operating Bellville boilers, they should no longer be fitted, and only retained when construction of new ships was too far advanced to remove them.¹¹⁹

¹¹⁸ Sir Fortescue, Flannery, *Navy Estimates 1900-01*, 270.

¹¹⁹ 'Memorandum Respecting Water-Tube Boilers in H.M. Ships,' ed. Admiralty (House of Commons, Cd.250, 1900), 6.

Evidence suggests that the lack of foresight shown by the Admiralty towards implementing a rigorous policy of training in the operation of water-tube boilers also resulted in a severe reduction in the operational efficiency and capability of the fleet. During the 1903 summer naval manoeuvres a number of problems emerged which reignited the debate regarding stoker manning and training issues which had been previously raised in 1891. One naval correspondent who witnessed the manoeuvres reported that out of a complement of two hundred and three stokers on the brand new battleship *King Alfred*, ninety three were second class stokers; 'who had never been to sea before.'¹²⁰

One of the anomalies of naval service during this period was the manner in which ships were commissioned for a specific period of time (normally two or three years depending on the station) with a ship's company which served in the ship for the duration of the commission. On de-commissioning, the entire ship's company left the ship to be replaced by a brand new complement of men for the next commission. As a result, there was no way of ensuring that the men drafted to commission a particular ship had the necessary knowledge or experience to operate its multitudinous systems safely and efficiently, particularly when considering the complexity of machinery to be found in the stokeholes and engine rooms of the most modern ships of the era. The series of breakdowns suffered by the *King Alfred* during manoeuvres were attributed to a lack of experience amongst the engine room personnel rather than to any problems with defective machinery, which were regarded as being 'relatively unimportant.'¹²¹

The Admiralty was also berated for not having the foresight to man the *King Alfred* with a 'nucleus crew' in order to gain experience of the machinery before accepting the ship from her builders.¹²² Despite being a brand new ship it transpired that only the Chief Engineer and one petty officer had actually witnessed the engines move under steam before the *King Alfred* sailed for the

¹²⁰ 'The Naval Manoeuvres: The Cruiser Work,' *The Times*, 21 August 1903.

¹²¹ Ibid.

¹²² Ibid.

start of the summer exercises.¹²³ Not unexpectedly, stokers received the most criticism with the remarks:

The stokers are largely men of the second class, many of whom had probably never been to sea in a man-of-war before and everywhere there is an absence of that personal familiarity with machinery and surroundings which, as every engineer well knows, counts for so much in the working of engines and boilers.¹²⁴

With little leadership from the Admiralty, it fell to individual senior officers in the Home Ports to identify the level of skills held by the stokers under their command. The following letter from the C-in-C Devonport to the Admiralty in 1907 requested formal approval of a scheme which had obviously been operating for some time. The scheme consisted of a series of abbreviations for inclusion in each man's service certificate which indicated the level of training he had undertaken, (See Table 1: below)

Table 1: Abbreviations of stokers' specialist qualifications

<u>Abbreviation</u>	<u>Signification</u>
FT	Passed Field Training
SA	Qualified Small Arms
TB	Passed Torpedo Boat Training
TBD	Passed Destroyer Course
OF	Qualified in Oil Fuel
Turbines	Qualified in Turbine Machinery
WTB	Qualified in Water Tube Boilers. ¹²⁵

Notwithstanding the improved training syllabus for stokers which was implemented in the first decade of the twentieth century, concerns regarding lack of effective training and the relative inexperience amongst second class stokers were still being raised in 1910. This was a subject which had some irony for Stoker Petty Officer John Walker Reynolds. In May 1910 Reynolds was recalled from his 'quiet little job' initiating second class stokers in mechanical

¹²³ 'The Naval Manoeuvres: The Cruiser Work,'

¹²⁴ Ibid.

¹²⁵ TNA, ADM 116/975, 'Commander-in-Chief Devonport to Secretary Admiralty,' ed. Admiralty (London, 1907).

duties, and ordered to join the second class armoured cruiser *Lancaster* for a two year Mediterranean commission.¹²⁶

Prior to receiving his draft to the *Lancaster*, Reynolds was an instructor on the training hulk *Acheron* attached to *Pembroke* at Chatham. The *Acheron* was the former ironclad *Northumberland* which was launched in 1866 and which reverted to a harbour depot ship in 1898 before finally becoming a stokers' harbour training ship in 1904. With regards to the difficulties already discussed surrounding the lack of training for second class stokers and the complexities of the Bellville water-tube boiler the rationale of training stokers on *Acheron's* ancient machinery that was by then some forty-four years old, was more than questionable. Reynolds noted that the *Lancaster* had received 'a good many second class stokers without any previous experience of watch-keeping on moving machinery.' As a consequence, he noted that there had been 'one or two accidents.'¹²⁷

Stokers' Recruitment

At this juncture, it would be prudent to ask the question, 'what induced men to volunteer to join the Navy as stokers?' As the *Lancaster* was proceeding down the river Medway towards the open sea Reynolds asked the same question. He mused in his diary that 'many poets and novelists had written about the glories and mysteries of the sea.' However, he came to the conclusion that in his case it was not 'from any romantic point of view, but from the standpoint of one driven by economic pressure' that forced him to adopt the life of a stoker.¹²⁸

Prior to the introduction of the continuous service scheme in 1853, men signed on to serve for as long as an individual ship remained in commission; when the ship de-commissioned, the men's services were dispensed with. This was a wasteful use of a valuable trained resource, particularly when men were

¹²⁶ John Walker Reynolds, '*Diary of the Mediterranean Commission of H.M.S. Lancaster*,' 1910, in Manuscript Collections (Portsmouth, National Museum of the Royal Navy), 262.

¹²⁷ *Ibid*, 12.

¹²⁸ J. W. Reynolds, '*Diary of the Mediterranean Commission of H.M.S. Lancaster*,' 10.

required at short notice. The continuous service scheme guaranteed a first period of service of twelve years followed by an optional further ten years to qualify for a pension. Seamen ratings traditionally joined the Navy as boys between fifteen and a quarter and sixteen and three quarters years of age or as youths from sixteen and three quarters to eighteen years of age.¹²⁹ Thereafter, entry was through the 'special service' or 'non-continuous' service scheme which was designed to attract men between the age of eighteen and twenty-five years who did not want to commit themselves to twelve years service; instead they could sign for five years service followed by seven years in the Royal Fleet Reserve.¹³⁰ As a consequence, boys joining as seamen received up to three years training in a harbour training ship, which included a period of dedicated 'sea training', before they joined their first ship at age eighteen, while youths were sent directly to sea for a period of six months on a sea-going training ship.¹³¹

By contrast, prior to 1907 stokers were recruited as 'able bodied men' between the ages of eighteen to twenty-eight years of age provided they could demonstrate 'good character.' Stokers could engage for either a continuous service period of twelve years or under the 'special service' scheme mentioned above. After 1907 the character requirement for stokers was changed from 'good' to 'very good.' This change may well have been implemented to reflect the disquiet shown by the Admiralty after the 1906 Portsmouth Barracks disturbances. In *The Quest for National Efficiency*, G. R. Searle suggested that expenditure on the Navy remained virtually static from 1865 to 1885 with naval estimates being reduced by Gladstone to a low point of £9.5 million in 1870.¹³² The lack of investment in the Navy during this period is clearly reflected in the downward spiral of naval recruitment. Between the years 1864-1870 the number of stokers and seamen in service slightly decreased apart from a small upward spike in recruitment in 1867, thereafter both branches remained virtually

¹²⁹ 'Advantages of Service in the Royal Navy and Royal Marines and How to Join,' (London, J.J. Keliher, 1907), 6.

¹³⁰ Ibid, 15.

¹³¹ 'Advantages of Service in the Royal Navy and Royal Marines and How to Join,' (London, J.J. Keliher, 1904). 14-16.

¹³² G.R. Searle, 1990, *The Quest for National Efficiency: A Study in British Politics and Political Thought, 1899-1914*, (London, Ashfield,) 7.

static until 1886. During this twenty-two year interval, the number of stokers entering service increased by just 2,989 men so that by 1886 their numbers stood at 6,989 compared to 48,500 seamen, thereby making stokers an almost invisible minority.¹³³ The lack of growth in the recruitment of stokers was no doubt caused by the long transition to an all-steam Navy which made the recruitment of stokers a low priority. However, after 1886 their numbers began to increase exponentially in line with the renewed expansion of the Navy.

The long transition from sail to steam was alluded to by the First Lord, Lord Selborne, in a 1902 memorandum in which he noted:

the Navy has reached a critical period in its development, a development which, steady and comparatively slow for the greater part of the last century, has now for fifteen years proceeded with startling rapidity. The application of steam to ships of war as a source of motive power was the first sign that the old order was beginning to change. At first admitted grudgingly as an occasional auxilliary to the sails, then acknowledged as an equal partner, then winning for itself supremacy.¹³⁴

Then again, when recruitment began in earnest after 1886 the Admiralty appears to have had a problem in recruiting sufficient engine room ratings. The Admiralty issued an Orders-in-Council in 1886 which authorised the payment of a ten shilling bounty to recruitment officers for each E.R.A. and stoker recruited.¹³⁵ This bounty may have been approved to overcome a temporary slump in the recruitment of engine-room ratings or it may have been recognition that large numbers of artificers and stokers would need to be recruited to meet the manpower demands of the new water-tube boiler in line with the expansion of the fleet. The passing of the 1889 Naval Defence Act and the formal adoption of the 'two-power' standard called for an unprecedented increase in both ships and men. As a result, the years 1889-1900 saw the number of stokers treble from 7,900 to 24,800 men.¹³⁶

¹³³ 'Diagram Showing the Number of Ships in Commission.

¹³⁴ William Palmer 2nd Earl of Selborne, Memorandum dealing with the Entry, Training and Employment of Officers and Men of the Royal Navy and of the Royal Marines, Navy (Personnel), 1902, House of Commons Parliamentary Papers Online, (Cd. 1385).

¹³⁵ Admiralty Orders-in-Council 146, 31 December 1886.

¹³⁶ 'Diagram Showing the Number of Ships in Commission.

In her book *From Jack Tar to Union Jack*, Mary Conley observed that the development of a modern Navy and faster ships in the early decade of the twentieth century led to a greater need for stokers and engine-room ratings. Moreover, Conley suggested that there was a shortage of stokers caused in part from the perception of the exhausting nature of their work, together with their low pay. There is no doubt that the pay of naval ratings in general was very low compared to civilian wages of the day. In 1912 Winston Churchill, then First Lord at the Admiralty, commented in a paper supporting an increase in naval pay:

A boy getting the minimum wage receives more money wages for eight hours' work bank to bank than a 1st class stoker in the Navy for eight solid hours of the hardest work I have ever seen done. The boy lives with his parents; the stoker has to keep a home without enjoying any of its economies.¹³⁷

However, while naval pay in general was poor, stokers were paid more than their seamen counterparts. Prior to the general increase in pay awarded in 1912 an Able-Seaman earned 1s 8d a day while a Leading Seaman's rate was 1s 10d. By comparison a Stoker 1st Class earned 2s 1d which was more than a Leading Seaman while a Leading Stoker earned 2s 4d which was more than that earned by a Seaman Petty Officer. Therefore, there was a definite financial incentive to join the Navy as a stoker. Moreover, even though the subsequent 1912 pay award reduced the differential in pay between stokers and seamen by increasing the pay of seamen to a higher rate, stokers still earned around 6d a day more than seamen.¹³⁸

Mary Conley also suggested that because of difficulties in recruiting sufficient stokers, Admiral Fisher included engine-room and stokehole duties in the instruction of boy seamen and ordinary seamen, 'so that seamen would be capable of augmenting engine-room staff when warranted.'¹³⁹ However, Conley appears to have misunderstood Fisher's intention with regards to this initiative. The reasons behind this proposal and its effects on relationships between

¹³⁷ Winston, S. Churchill, *Pay of Men of The Royal Navy*, in TNA, ADM 116/1661, 'Revised Rates of Pay, Allowances and Pensions for Naval Ratings and Royal Marines', 5.

¹³⁸ 'Statement Showing the Present and New Rates of Pay for the Royal Navy and Royal Marines,' Admiralty, 1912, (House of Commons Parliamentary Papers Online, Cd. 6118), 3-4.

¹³⁹ Mary Conley, *From Jack Tar to Union Jack*, 45.

stokers and seamen is more fully explored in chapter five but requires a brief comment here. The use of seamen in coal-trimming had been a long established practice from the earliest use of steam propulsion, particularly when ships were being steamed at a fast-rate over extended periods of time, when stokers would inevitably become fatigued. As the syllabus covering masts and sails was finally abolished from the seamen's training programme in 1903, (another indication of the reluctance to abandon sailing rigs), the Admiralty looked for other skills that seamen could acquire. One initiative was the introduction of a system of mechanical and stokehole training for seamen which was officially introduced in 1903 after a proposal by Admiral Fisher. However, Fisher never intended that seamen should become proficient in the skills demanded of stokers.

Under a committee set up by Admiral Hood to investigate the training of seamen in stokehole work, evidence was presented that suggested that seamen were of no practical use in the stokehole. One senior naval engineer suggested that the training of seamen in stokehole work was 'too short to be of any practical use' and that it would have been wise to abolish the training entirely.¹⁴⁰ Another engineer made the comment that while he had tried to instruct seamen in firing he claimed, 'they cannot learn that..... they cannot learn stoking at all.'¹⁴¹ Moreover, it was pointed out to the committee that it took a minimum of eighteen months to train a stoker capable of steaming a boiler at high speed.¹⁴² When questioned by the committee on the use of seamen for coal trimming duties, all engineers agreed that the mechanical training programme did much to improve the ability of seamen to work in coal-bunkers. However, despite this observation the consensus was that they preferred to use marines for trimming duties with one engineer observing, 'marines are bigger and older men and understand what work is, more than the others.'¹⁴³

While naval pay can be considered to have been poor by comparison to civilian wages and those of the merchant marine, Mary Conley suggested that

¹⁴⁰ TNA, ADM 116/1680, 'Training of Young Seamen and Boys in Seagoing Ships,' Evidence from Engineer Commander J, McLaurin,' 17.

¹⁴¹ Ibid, evidence from Engineer Commander, W.F. Hinchcliffe,' 18.

¹⁴² Ibid, evidence from Engineer Lieutenant S.W. Cooke, 19.

¹⁴³ Ibid.

the Admiralty had expectations that a more comprehensive pension scheme would induce men to volunteer for service and also make re-engagement to serve to achieve a pension a more attractive proposition for those nearing the end of their first engagement.¹⁴⁴ Conley also noted that the implementation of a formal pension scheme had the unintentional consequence of contributing to the professionalism of the Navy by severing the perception of a pension as charity by structuring the pension as equitable compensation for hard-earned service. Part of the Admiralty's expectations with regards to the naval pension appear to have been met when an 1886 Admiralty committee on pension reform concluded that while pensions did not induce men to join, they did serve as an incentive for men to re-engage.¹⁴⁵

During the last decade of the nineteenth century the Admiralty conducted a number of surveys in order to measure the effectiveness of the re-engagement system. These surveys measured a number of variables with regards to re-engagement and also made direct comparisons between the number of seamen and stokers who re-engaged or left the service never to return. The following table, (See Table 2:) presents a breakdown by percentage of seamen and stokers who re-engaged to complete time for pension or who left the service on termination of their first engagement but who then re-joined within twelve months.

¹⁴⁴ Mary, A. Conley, *From Jack Tar to Union Jack*, 52.

¹⁴⁵ *Ibid.*

Table 2: Percentage of Seamen and Stokers who re-engaged to complete Time for Pension, 1887-95.¹⁴⁶

Year	Seamen			Stokers		
	Re-engage at once	Leave but re-enter within 12 months	Total	Re-engage at once	Leave but re-enter within 12 months	Total
1887	68.4	7.4	75.8	77.16	9.05	86.21
1888	59.6	8.0	67.6	70.47	10.28	80.70
1889	56.0	10.8	66.8	65.88	20.0	85.88
1890	58.8	8.8	67.8	76.84	7.91	84.75
1891	58.0	9.0	67.0	75.37	6.87	82.44
1892	60.80	8.40	71.0	73.16	12.09	87.02
1893	65.20	10.40	77.40	74.35	10.78	85.50
1894	66.40	11.40	79.0	72.73	14.80	87.79
1895	65.80	11.10	77.40	83.40	8.80	93.20

The table above shows that in each year from 1887-1895 substantially more stokers than seamen volunteered to re-engage for pension as soon as their first engagement was completed. Furthermore, apart from the years 1890, 1891 and 1895, while more stokers than seamen left the service on termination of their engagement, they were more likely to re-join the service within twelve months. In 1890 the Admiralty analysed a representative sample of 500 seamen and 500 stokers to determine the percentage of men who re-engaged after ten years service against those who were lost to the service through death, desertion (run), discharge (undesirable or objectionable), invaliding or purchase, (men who purchased their discharge). The results of this analysis are reproduced below in Table 3:

¹⁴⁶ Return "showing approximately, for five years a) Percentage of Seamen and Stokers who Re-engage to Complete Time for Pension; and (b) Percentage of Seamen and Stokers who leave on Termination of First Engagement, but who return to the Service within twelve months", (Admiralty, London) in Navy (Seamen and Stokers Re-engagement) Parliamentary Papers Online 1894 (198) and 1898 (253).

Table 3: The number of seamen and stokers who were discharged before completing their first-engagement.¹⁴⁷

Discharged Before Completing First Engagement								
	Entered	Dead	Run	Discharged	Invalided	Purchase	Other Causes	Total
Seamen	500	31	59	35	88	16	1	230
Stokers	500	21	52	23	91	7	2	196
Percentage of all Seamen entered		6.2	11.8	7.0	17.6	3.2	0.2	40.0
Percentage of all Stokers entered		4.2	10.4	4.6	18.2	1.4	0.4	39.2
Percentage of all Seamen discharged during first engagement		13.48	25.08	15.22	38.26	6.86	0.43	100
Percentage of all Stokers discharged during first engagement		10.71	20.53	11.73	46.43	3.57	1.02	100

While the table above is a 'one-off' survey and therefore could be considered to have limited value, nevertheless, it offers an insight into differing perspectives of the two largest branches on the lower-deck. While the survey shows that ten more seamen than stokers died in service, slightly more stokers were invalided from the service suggesting that attrition rates for deaths and accidents or disease were broadly similar for both classes of men. However, with regards to desertions (run), more seamen than stokers deserted while less stokers than seamen were discharged as undesirable or objectional which adds weight to the argument proposed in this thesis that stokers were better disciplined than they were given credit for. The 'other causes' column in Table 3: above, referred to three men out of the one thousand surveyed. One was a seaman who became a dockyard rigger and the other two were stokers, one having been discharged without purchase while the second was stated to have been 'handed over to the military authorities.' This suggests that the man had possibly deserted from the Army before joining the Navy in similar fashion to

¹⁴⁷ Percentage of Seamen and Stokers who Re-engage to Complete Time for Pension, (Admiralty, London 1898).

former Army trumpeter and stoker George Wells, who features later in this chapter. The influx of former Army men and Royal Marines into the stokers' ranks is discussed in more detail in chapter seven.

The following table (See Table 4:) also adds weight to the suggestion that stokers were more satisfied with service conditions than seamen; whereby substantially more stokers re-engaged at the end of their first ten year engagement than seamen, while fewer stokers claimed their discharge never to re-enter.

Table 4: Statement Showing the Percentage of Seamen and Stokers who re-engage after completing a first period of Ten Years¹⁴⁸

Complete First Engagement					
	Entered	And At Once Re-Engage	Claim Discharge But Re-Enter	Claim Discharge and Never Re-Enter	Total
Seamen	500	148	29	93	270
Stokers	500	218	39	47	304
Percentage of all completing first engagement					
Seamen	500	54.82	10.74	31.44	100
Stokers	500	71.71	12.83	16.48	100

Overall, the data reproduced in the tables above appear to show that stokers were probably more settled and satisfied in service than seamen, as a result they were more amenable to remaining in service or to extending their service on completion of a first engagement. On all counts this would challenge contemporary and modern perceptions that stokers lacked the discipline and tradition of seamen and were, as a consequence, less loyal towards the service.

While the Navy could be considered to have been both 'British' and 'English,' the Admiralty and Parliament consciously worked to make the Navy more appealing to a wider voting British public in order to increase

¹⁴⁸ Return of Comparative Percentage of Seamen and Stokers who re-engage after Ten Years Service; and of those who are lost to the service by Death, Desertion, Discharge, Invaliding, or Purchase during the first Ten Years, Admiralty, 1890, Navy (Seamen and Stokers), House of Commons Parliamentary Papers Online, (287).

recruitment.¹⁴⁹ As a result, Mary Conley suggests that the Navy increasingly drew working-class recruits from the industrial centres of England and from Scotland and Ireland. However, Conley *et al* argue that it is difficult to determine the geographical composition of the fleet at any particular time because the statistics are embedded within diverse Admiralty recruiting records, port stations, ships' muster books and ratings certificates of service that leaves the uncovering of those numbers 'a real challenge of naval research.'¹⁵⁰

Be that as it may, there is one method of determining the geographical composition of the Navy that may have been overlooked by Conley *et al*. During 1911 the national census was conducted and at midnight on Sunday April 2nd 1911 every ship in the Royal Navy was required to complete a census return. The census return for the Royal Navy by individual ship for 1911 is available from the National Archives. From a ship's *Enumeration Book* it is possible to determine the name, rank, age, place of birth and marital status of every officer and man onboard a particular ship at the time of the census which offers a fascinating snap-shot in time of the composition of the Navy.

In light of Mary Conley's claim that uncovering the geographical composition of the fleet was 'a real challenge of naval research,' the *Lancaster's* census return which was acquired in order to investigate the composition of the stoker complement of the *Lancaster* may offer an insight into this under-researched aspect of naval history. Interestingly, while an analysis of the *Lancaster's* census return appears to follow the pattern suggested by Conley with regards to a geographic composition including representation from the industrial centres of England and from Scotland and Ireland, the geographical spread is not nearly as varied nor as equal as that suggested. A detailed examination of the *Lancaster's* census return for the seamen and stoker divisions gives an unusual picture of recruitment for these two divisions of men being centred predominately on the south and south-east regions with a particular emphasis on London. A tabular list taken from the *Lancaster's* census

¹⁴⁹ Mary A. Conley, *From Jack Tar to Union Jack*, 6.

¹⁵⁰ *Ibid.*

return for the seaman division is given at Appendix (2) and the stokers' division at Appendix (3). The following table, (See Table 5:) presents details by region of the place of birth for the men in each division.

Table 5: Geographic composition of Seamen and Stokers serving in H.M.S. *Lancaster* by place of birth

Region	Stokers	Seamen
Scotland	5	7
Ireland	11	8
North East	8	12
East	10	9
South East	88	121
South	40	29
South West	4	5
West	0	3
North West	19	19
Midlands	8	7
Overseas	1	2
Total	194	222 ¹⁵¹

The above table shows that while the total number of men between the two divisions was broadly similar, there was also a remarkable similarity in their geographic composition. It would appear that a majority of the men in both divisions originated from the south and south-east in very similar proportions with 264 men out of the combined total of 412 having been identified from that region (64% of the total). Moreover, while these men were spread geographically throughout these two particular regions, exactly half of the stoker's division and forty-three percent of the seamen division originated from the metropolis of London and not from the southern naval ports of Portsmouth, Sheerness or Chatham as might have been expected, (See Table 6: below).

¹⁵¹ TNA, Census of England and Wales, 1911, 'Enumeration Book for the Royal Navy, H.M.S. *Lancaster*.'

Table 6: A comparison between Seamen and Stokers born in the south and south-east region and those born in London.

	Total numbers south & south-east region	South and south-east region excepting London	London only	Total number of men from all regions	Percentage of men from southern region out of total	Percentage of men from London out of total
Seamen	144	82	62	222	66%	28%
Stokers	120	60	60	194	61%	31%
Total	264	142	122	416	63.5%	29.5%

The table above shows a high incidence of men originating from the south and south-east while a significant number in both the stoker and seaman divisions (29.5% of the total) originated specifically from London. It seems probable therefore, that as *Lancaster* commissioned for her 1910-1912 Mediterranean cruise at Chatham that this may explain the pattern whereby an unusually high number of men originated from one specific area of the country. While it has not been possible through lack of space to widen this particular study to other ships in order to make comparisons, it appears probable that an analysis of a Plymouth based ship for example might expose similar clustering of men to that specific (west-country) region.

Strikingly, the *Lancaster's* census return indicates that the total number of men born in Scotland and Ireland as a total of both divisions, appears to have been higher than those born in the north-east and only just short of the total for the north-west, while there were twice as many men from Scotland and Ireland serving onboard *Lancaster* than men from the Midlands region. The west region (Wales) also appears to have been very under represented with only three seaman and no stokers originating from this region. Moreover, the two largest naval towns of Portsmouth and Plymouth were also underrepresented with only two seamen originating from Portsmouth and no stokers from either port. The lack of men from these two major naval towns would support the idea proposed earlier that ships were manned according to where they commissioned thereby

attracting the bulk of their complement from men originating from that particular region.

While the issues surrounding pay and allowances and the unrest leading up to the disturbances at Invergordon in 1931 are dealt with in more detail in chapter seven, a comment may be made here regarding the difficulties relating to married men in the Navy compared with their counterparts in the Army or Marines. In 1912 the First Lord, Winston Churchill, made the following comment with regards to the state of naval pay:

In 1902 during the South African War Parliament approved an increase in soldiers pay. No corresponding increase was made however, in the pay of the Navy and in consequence their position in relation to the soldier has been substantially impaired and all pecuniary recognition of the hardships of the sailor's life has been swept away. In consequence of these facts, there is a deep and widespread sense of injustice and discontent throughout all ranks and ratings of the Navy.¹⁵²

This was particularly true with regards to the position of married men on the lower-deck. While married sailors were ignored by the Admiralty, in the Army all Warrant Officers, fifty percent of Sergeants and a minimum of three percent of the rank and file received free married quarters or lodging allowance at 1s 1d in lieu and in addition they also received separation allowances when separated from their family of 4d per day for their wife and 1½ d for each child.¹⁵³ However, the Admiralty consistently ignored the lower-deck plea for similar allowances prior to the First World War; while the treasury blocked the funds to pay for them out of the naval budget despite the First Lord Winston Churchill being fully supportive of pay increases for the Navy in 1912. The issue of separation pay and marriage allowances for sailors remained unresolved until the outbreak of war in 1914 forced the government's hand. As a result, Carew argued that unmarried men pre-1914 could just about survive on the existing rates of pay but married men with families would have been forced to exist on 'starvation wages.'¹⁵⁴ The lack of additional financial support for married men in the Navy probably accounts for the relatively small number of married men

¹⁵² TNA, ADM 116/1661, Winston, S. Churchill, *Pay of Men of the Royal Navy*, 4-5.

¹⁵³ *Ibid*, 8.

¹⁵⁴ A. Carew, *The Lower Deck of the Royal Navy 1900-1939*, 58.

serving in the *Lancaster* reproduced in the table below (See Table 7:). The number of married men for each rank is given alongside the figures in brackets which denote the total number of men for that particular rank.

Table 7: Number of Married men serving in H.M.S.*Lancaster*

Married men	Chief Petty Officer	Petty Officer	Leading rate	Able-Seaman & Stoker
Seamen	1 (2)	10 (20)	8 (20)	4 (170)
Stokers	5 (7)	6 (17)	7 (19)	14 (151) ¹⁵⁵

From the table above it can be determined that only fifty-five or thirteen percent of the men serving in the seaman and stoker divisions of the *Lancaster* were married, (the figures given for seamen excludes boys). This small percentage probably reflects the difficulties that married men faced when trying to maintain a family on a single man's pay without any additional support. Moreover, while the numbers of married men amongst the higher ratings (Chief Petty Officer to Leading rate) are roughly similar between both stokers and seamen, there appears to be a variance at the lowest end of the ratings scale. While there were nineteen more able-seamen than stokers in the *Lancaster's* complement, there were significantly more married stokers; albeit the overall numbers are small. This was probably due to the fact that stokers received higher wages than seamen which might have encouraged a higher percentage of stokers to start families even though they would have undoubtedly struggled financially. In order to determine whether the lack of financial support caused men to marry at certain ages or when they reached a particular rank, the following data has been extrapolated from *Lancaster's* census return.

¹⁵⁵ TNA, Census of England and Wales, 1911, 'Enumeration Book for the Royal Navy, H.M.S. *Lancaster*.'

Table 8: A Comparison of the ages of Married and Single Men serving in the Seamen and Stoker Divisions of H.M.S. *Lancaster*

Married Men				Single Men	
Division	Rate	Youngest	Oldest	Youngest	Oldest
Seamen	Chief Petty Officer	-	36	-	34
	Petty Officer	28	36	30	39
	Leading Rate	25	31	22	38
	Able-Seaman	22	31	18	37
	Ordinary-Seaman	0	0	18	21
Stokers	Chief Stoker	35	40	36	38
	Stoker Petty Officer	28	40	24	36
	Leading Stoker	23	35	20	32
	Stoker 1st Class	20	32	19	48
	Stoker 2nd Class	0	0	19	22 ¹⁵⁶

The ages given in the table above cannot be taken as the age at which the men actually married as this could have been several years earlier in the case of the more senior men. However, the table does allow some observations to be made with regards to the age differential between the married and single men of both divisions. The table indicates that at the chief and petty officer level there was little difference in the age range of married men in either division. However, it is noticeable that the youngest single seamen petty officers appear to have been somewhat older than their stoker counterparts. Furthermore, the table would tend to support the idea that stokers married, and married earlier than seamen on account of the higher wage differential between the two groups of men. The relatively young age range of the ordinary seamen and second class stokers with their correspondingly low rate of pay obviously precluded them from marrying until they reached at least the next higher rate.

¹⁵⁶ TNA, Census of England and Wales, 1911, 'Enumeration Book for the Royal Navy, H.M.S. *Lancaster*.'

Mary Conley also identified the fact that while the Navy became ever more 'British,' foreigners were added to ship's complements as supernumeraries from Africa, India, Asia and the West Indies when ships were abroad.¹⁵⁷ The *Lancaster's* census reflects this practice albeit with locally entered personnel from the Mediterranean where she was cruising, rather than further afield. The following table, Table 9: shows a variety of locally entered personnel engaged while on station:

Table 9: Supernumeraries serving in the *Lancaster*

Position in ship's books	Place of origin
Cooper x 1	Mosta Malta
Bandmaster x 1	Naples Italy
Band Corporal x 1	Malta
Musician x 1	Messina Sicily
Musician x 3	Syracuse Sicily
Musician x 2	Valletta Malta
Musician x 2	Salerno Italy
Musician x 3	Victoria Malta
Musician x 1	Acireale Sicily
Musician x 1	Calabria Sicily
Officers Steward 1st Class x 1	Valletta Malta
Officers Cook 1st Class x 1	Floriana Malta
Officers Cook 2nd Class x 1	Valletta Malta
Officers Cook 3rd Class x 1	Cospicua Malta
Officers Cook 3rd Class x 3	Valletta Malta
Officers Cook x 1	Little Vecchia Malta
Officers Steward 2nd Class x 1	Bormla Malta
Officers Steward x 1	Corfu Greece
Officers Steward x 1	Valletta Malta
Officers Steward 3rd Class x 2	Valletta Malta ¹⁵⁸

¹⁵⁷ Mary, A. Conley, *From Jack Tar to Union Jack*, 6.

¹⁵⁸ TNA, Census of England and Wales, 1911, 'Enumeration Book for the Royal Navy, H.M.S. *Lancaster*.'

It is apparent from these entries that the *Lancaster's* officers took advantage of the cheaper labour rates in the Mediterranean and engaged a number of cooks and stewards to serve their needs even though the census lists several British naval cooks, stewards and domestic auxiliaries. The inclusion of a number of locally entered musicians is an interesting facet of the ship's commission. The *Lancaster* had a complement of twenty men from the Royal Marine Light Infantry including two buglers, but no musicians. Therefore it can be assumed that the musicians were engaged by the *Lancaster's* commanding officer for the entertainment of the officers or for more formal occasions such as inspections (Divisions) and divine service.

Apart from the locally entered men described above, several officers and men serving in the *Lancaster* were born outside the United Kingdom reflecting the spread of Empire as shown below in Table 10:

Table 10: Men born outside the United Kingdom

Position	Place of Birth	Nationality
Lieutenant	San Francisco USA	British
Lieutenant	Dimbula Ceylon	British
Midshipman	Agra India	British
Midshipman	Bangalore India	British
Stoker 2nd Class	Cairo Egypt	British
Leading Seaman	Jaulanda India	British
Able Seaman	Sydney Australia	British ¹⁵⁹

Mary Conley observes that the recruitment poster for stokers, (See Illustration 1, p. 67) was produced by the Admiralty as part of a recruitment campaign to attract men to the stokers' branch from the interior industrial areas as it was recognised that the more modern and faster ships of the day required a greater need for stokers.¹⁶⁰ In order to make the job appear more attractive to

¹⁵⁹ TNA, Census of England and Wales, 'Enumeration Book for the Royal Navy, H.M.S. *Lancaster*.

¹⁶⁰ Mary, A. Conley, *From Jack Tar to Union Jack*, 45-6.

potential recruits, Conley argues that the poster was deliberately designed in order to 'idealise' life in the stokehole and glossed over the dirty and gruelling nature of the work. In the poster, the stokehole is depicted as a relatively pleasant, clean and bright place where work and conversation went hand in hand, making the amount of work required by stokers to appear to be minimal.¹⁶¹

However, while the poster may well have deceived the agricultural worker or someone from the inner-cities who had no experience of industry, the stokers whose testimony has provided the underpinning knowledge for this thesis had previously worked in heavy industries such as coal mining, the railways, foundries, blacksmiths' shops and manufacturing processes of all kinds. Having been used to regular employment they turned to the Navy after being made redundant during a recession or after being put on 'short-time' hours. As a consequence of their previous employment, these men would have had first-hand experience of working in dirty, labour intensive occupations, therefore, it is unlikely that they would have been deceived by the idealistic recruiting poster.

¹⁶¹ Mary A Conley, *From Jack Tar to Union Jack*, 47.



Illustration 1: Stokers Recruiting Poster circa 1910

Source: © Imperial War Museum Digital Image Art. IWM PST 0805

With regards to the reasons why men were attracted to joining the Navy, Conley observed that during the early Edwardian period young men were stirred by 'popular imperialism, literature and the lure of the sea.'¹⁶² However, many of the subjects whose testimonies form a part of this thesis had more mundane reasons for joining as suggested above. For some like S.P.O. Reynolds it was more a question of 'economic pressure,' than any ideas of romanticism over the glory or mystery of the sea.¹⁶³ For others, such as stoker Richard Rose who had been made redundant from the green-grocery business, the promise of a free kit, food and accommodation was the main attraction; although the promise of a free kit was falsely given, as will be explained further in chapter four.

In *The Quest for National Efficiency*, G.R. Searle observed that the 'efficiency movement' had become embedded in British consciousness during the latter half of the nineteenth century. The debate over national efficiency was said to have been triggered after 'Black Week' when the British Army suffered three disastrous defeats at the hands of the Boer irregulars during the Second Boer War.¹⁶⁴ Searle suggests that the fear that sustained the ideology for national efficiency was fuelled by anxieties about whether the British Empire could cope if it ever found itself at war with a major European power. This led to calls to improve the 'national physique;' a need which stemmed in part from the poor quality of the recruits who presented themselves to the Army during the Boer War as discussed in the preceding chapter. However, the poor physique of recruits was not a problem unique to the Army. Twenty-seven years prior to the outbreak of the Second Boer War the Admiralty raised concerns with regards to the poor physique of naval stokers with the following observation:

If for any reason, as, for instance their well-known inferior physique, it were found to be impossible to sufficiently increase the numbers of our stokers, indifferent as many of them are, so as to enable them when in three watches (with aid from the deck for trimming), to maintain their ship at, say 13½ knots speed, with the "Admiralty mixture" as fuel, for 48 hours, without being unduly fatigued, then it would appear that only two courses would be open for their Lordships' adoption, viz, either to obtain and retain the services of the same

¹⁶² Mary A Conley, *From Jack Tar To Union Jack*, 8-9.

¹⁶³ R. F. Rose, *I.W.M. 754*, (London, Imperial War Museum Sound Archive, 1976), 16.

¹⁶⁴ G.R. Searle, *The Quest for National Efficiency: A Study in British Politics and Political Thought, 1899-1914*, xix-xx.

class and style of men that are to be found in the stokeholes of the great steam companies, or to largely reduce the speed claimed for each class of men-of-war. The combination we have aimed at in many of our modified types, viz a full rig, and full engine power requires a full complement of seamen and stokers. Unfortunately, at present the complements of seamen are often insufficient in number while the stokers are not only insufficient in number but also of a very inferior physique.¹⁶⁵

Therefore, it would appear that concerns had been raised within the Navy regarding the physique of stokers long before the movement to improve the 'national physique' took hold. Moreover, when it became necessary, such as during times of under-recruitment, the Admiralty had no hesitation in reducing the physical standards for stokers or seamen in order to meet agreed recruitment targets. Without the benefit of hindsight, the Recruitment Committee decided after reviewing the monthly recruiting figures for April 1914 to reduce the physical standards for stokers with the comment:

Stoker numbers decreased by eighty-five and Marines by eighty-one. In view of the falling off in recruiting for the former, the chest standard was reduced by half an inch on the 30th April and 'specials' are allowed one inch under standard height or chest (as compared with two inches under height and one and a half inches under chest in the first half of 1913-14). Recruiting is poor at this time of year and in order not to fall too much in arrear with the entry of stokers it is proposed to reduce the standard to normal, without altering (at present) the rules for "specials."¹⁶⁶

The mention of the term 'reduce the standard to normal' given above intimated that the entry standards for stokers were temporarily reduced down to the seaman or 'normal' standard. The term 'specials' was a reference to the practice whereby a recruiting officer was authorised to enter men or boys who fell below the physical standards but were otherwise suitable in all respects for service. Then again, naval recruiting officers did not always apply the rules as rigidly as they were intended. When James Maloney presented himself at the

¹⁶⁵ Report by Admiral George Elliot and Rear-Admiral A.P. Ryder, Members of the Committee Appointed to Examine, 'The Designs Upon which Ships of War Have Recently Been Constructed,' (London, HMSO, 1872), House of Commons Parliamentary Papers Online, C. 489, 31-2.

¹⁶⁶ TNA, ADM 1/8374/97, Proposed Reductions in Standards for Boys and Stokers, ed. A. Paris, Lieut. Col., RMA Inspector of Recruiting, (Admiralty, 1914).

Chatham naval recruiting office in 1911 at the age of nineteen he was found to be half an inch short of the minimum height requirement and also lacked the minimum chest measurement for a seaman. As a result, Maloney was rejected and advised to re-apply after six months at which point he would have presumably have 'filled-out.' However, when Maloney asked whether he could join in another position he was entered straightaway as a stoker, despite not meeting any of the minimum requirements.¹⁶⁷

Apart from stokers, the only other men in the Navy who required a larger physique were the Royal Marine Light Infantry and Artillery, which would support the use of marines rather than seamen for trimming duties as suggested previously in the paragraph concerning the training of seamen in stokehole duties. However, the Admiralty statement made with regards to the perceived poor physique of stokers is not one that is commonly associated with men of their calling.

Christopher McKee in *Sober Men and True*, perpetuates the notion that stokers were a different breed of men to seamen by stating that they were viewed as, 'big, strong, illiterate, dumb guys; all brawn and no brain recruited to do the ships heavy lifting in torrid, coal soiled engine spaces.'¹⁶⁸ While acknowledging this as a stereotype, McKee admitted that the negative stereotype stuck to stokers 'with all the adhesive excellence of 'Tar Baby.'¹⁶⁹ Tar Baby was a fictional doll made of tar and turpentine which featured in the Uncle Remus stories (1881). The doll was used to trap Br'er Rabbit but because of the sticky nature of Tar Baby, the more the rabbit struggled the more it became trapped. McKee's analogy between the fictional Tar Baby and stokers is clear; the more often the stereotype was applied, the more it stuck.

In similar vein B. W. Beresford described the stoker in comical terms that perfectly mirrors a caricature drawn by Ernest Ibbetson in 1910 (See Illustration 2, p. 72), in which the stoker is portrayed as a strong, but simple character with

¹⁶⁷ James, Maloney, *I.W.M. 663*, (London, Imperial War Museum Sound Archive), Reel 1.

¹⁶⁸ C. McKee, *Sober Men and True*, 103.

¹⁶⁹ *Ibid.*

the hint of an 'ape-like' appearance. This illustration can be compared with another drawn by Ibbetson of a 'bluejacket' (See Illustration 3, p. 73) which has none of the underlying negative traits depicted in the stoker.

Having described the stoker in a comical vein, Beresford then implied his reputation both ashore and afloat was something more sinister, categorised by 'low intelligence, brute force and ill-discipline.'¹⁷⁰ Without any evidence to support his claims, Beresford, like others, could only repeat a traditionally held naval and historical viewpoint that longstanding animosity existed between the seaman and stoker branches. Moreover, working class people in naval towns could also adopt a critical attitude towards sailors treating them with hostility and snobbery. One critic made the observation that boiler-room stokers, 'were, and remained, the lowest form of shipboard life.'¹⁷¹

Interestingly, while relationships between stokers and seamen were often strained, there has always been a strong suggestion that stokers enjoyed very good relationships with Royal Marines who, as previously described, had very similar physical attributes. In his research for *Men from the Dreadnoughts* Henry Baynham suggested that a large number of discharged marines and ex-soldiers were attracted to re-join the Navy as stokers, which may explain the good relationships that existed between these men.¹⁷²

¹⁷⁰ B.W. Beresford, 'Stoker Royal Navy, the Lowest of the Low,' *Sea Breezes* 67, no. 575 (1993). 889-95.

¹⁷¹ Ian Jack, 'Cocoa, Sir'? *London Review of Books* 25, no. 1.2 (2003). 3.

¹⁷² Henry, Baynham, *Men from the Dreadnoughts*, 164-6.



Illustration: 2, 'The Stoker and his little spade,' Ernest Ibbetson 1910

Source: Author's private collection



Illustration: 3 The Able Seaman, Ernest Ibbetson 1910

Source: Author's private collection

These bonds may have been further strengthened when an official order was promulgated in 1919 in order to boost the numbers of stokers, which allowed serving seamen and Royal Marines with over six months seniority to transfer to the stoker branch with the rate of acting stoker first class.¹⁷³

George Wells joined the Army as a boy trumpeter in the Army Service Corps towards the end of the second Boer War. The war ended while Wells was still under training and becoming 'fed up' with Army life he decided to desert while still a boy soldier. Wells found a good job working for the Maple Dairy Company earning 24s a week, however apart from the long hours he had to pay 12s a week board and lodgings. He was living in Southampton at the time and was informed by a sailor that he could earn 10s a week in the Navy all found. However, this was not strictly true. On joining the Navy as a stoker Wells would have found that he was liable to pay for his kit as described in chapter two. Nevertheless, Wells signed on in 1904 while still only seventeen years of age having been forced to lie about his age in order to meet the minimum age requirement of eighteen years.

During his service, Wells served alongside many stokers who had previous Army service with some having served for up to seven years in India prior to joining the Navy. Wells remembered that during one particular Sunday Divisions in the *Good Hope* the Captain queried why none of the senior men were wearing decorations. The Captain ordered his ship's company to wear their medals on divisions 'no matter where they had earned them.' The following Sunday over half of the stokers' division turned out with Army Service medals; by contrast none of the seamen had any decorations of any sort.¹⁷⁴ This incident adds weight to the argument that stokers had more discipline than they were given credit for. If half of the stokers serving in the *Good Hope* had Army Service medals they would have earned them in service abroad having seen action in a military campaign. Therefore, they would have already been disciplined men prior to joining the Navy. The fact that none of the seamen had

¹⁷³ 'Seamen and Royal Marines (Seniority),' ed. House of Commons (Hansard, 1919). 2071.

¹⁷⁴ George Edward Wells, *I.W.M. 9068* (London, Imperial War Museum Sound Archive, 1973). Reel 1.

any decorations of any sort suggests that in this ship at least, the stokers appeared to have been more mature, experienced and possibly more disciplined than their seamen counterparts.

Apart from meeting the physical characteristics required for entry, prospective recruits for naval service were also required to undertake a medical examination in order to determine that they were free from 'any physical defect or disability.' In addition, under the heading 'educational test', all potential recruits were informed that candidates for naval service were required to be able to 'read and write fairly', while specific ratings such as E.R.As, sick berth attendants and writers were required to undertake further educational tests.¹⁷⁵ A 1907 recruiting pamphlet described the educational test as follows:

The lowest test for any candidate is that he shall be able (a) to read a short passage from a standard IV. reading book, or if not available from a newspaper; (b) to write a similar passage of about six lines slowly read over and then dictated; (c) to have a fair knowledge of the first four rules of arithmetic.¹⁷⁶

Richard Rose left school in Bognor Regis at the age of twelve in 1908. Thereafter, Rose spent the following three and a half years as a newspaper boy and then as a grocer. However, in 1912 Rose was made redundant from his job as a grocer after several large national grocery companies forced the small independent traders out of business. Although Rose enjoyed working in the grocery trade there appeared to be little opportunity for him to get another position as a grocer; therefore he decided that the Navy would offer him a more stable lifestyle where he wouldn't have to worry about buying clothes, 'which was a big problem in those days', while he could also be assured of where his next meal was coming from.¹⁷⁷

Rose completed the necessary pre-joining tests and medical at Portsmouth. Surprisingly, when contacted for his 'characters' (references) neither of Rose's previous employers thought to mention that he was only sixteen and a half years of age, a fact also lost on the recruiter. Many years

¹⁷⁵ 'Advantages of Service in the Royal Navy,' 1904, 13.

¹⁷⁶ Ibid, 1907, 12.

¹⁷⁷ R. F. Rose, *I.W.M. 754* (London, Imperial War Museum Sound Archive), 1976, 1.

later Rose admitted that he had lied about his age in order to join the Navy by substituting his elder brother's date of birth for his own.¹⁷⁸ Rose claimed he did this to avoid being entered as a boy seaman as he had been told that the boys' training ship *Implacable* was a 'real disciplined place.'¹⁷⁹ Having deceived the recruiter Rose decided to enter as a stoker because a cousin who was a leading seaman had informed him that there were no prospects in seamanship.

The first three days of Rose's training were taken up with issuing and marking kit, learning how to sling his hammock, and lectures on discipline. Thereafter, the next four months consisted of rifle drill, marching, gymnasium work and the naval swimming test which Rose successfully passed at the second attempt. Surprisingly, stokers' training took up only the last two out of the total six months which constituted the new entry training programme. During his training Rose would have been issued with a personal copy of the *Stokers' Manual* which detailed everything a stoker needed to learn during his time in the Navy with regards to the operation of marine machinery and common naval engineering tools, materials and practices. Rose was taught the principles of boilers and reciprocating engines on the training ship *Renown* and although she was an old ship she was fitted with Bellville boilers, which may have been fitted specifically for training purposes. However, instead of using coal for learning how to fire a naval boiler, trainee stokers were taught how to fire a boiler 'cold' using flint boulders as a substitute for coal.

Despite the artificiality of using boulders for training purposes, the evolution was made more realistic by making the trainee stokers dig the boulders out from the coal bunker and transport them in the 'skids' from the coal bunkers to the stokehole, before firing them into the boiler. Moreover, at the end of the day's instruction, every boulder had to be raked out of the furnace and replaced in the bunker ready for the following day's classes. Rose described this process as 'hard physical work,' nonetheless he saw the benefit of using

¹⁷⁸ TNA, ADM 188/900, 'Continuous Service Certificate, Richard Frank Rose,' ed. Admiralty (London, Admiralty, 1912).

¹⁷⁹ R. F. Rose *I.W.M.* 754, 6.

flint boulders rather than coal as 'the stones were clean so you didn't get black.'¹⁸⁰

Rose kept watches alongside trained men who were supposed to explain the workings of dynamos and refrigerating machines, although Rose remembered that some of the trained men were 'reluctant to pass on information as they weren't paid for it.'¹⁸¹ The information that was not passed on had to be gleaned from the *Stokers' Manual*. At the end of his six months training Rose sat an oral examination conducted by an engineer officer onboard the training ship.

While Rose had enjoyed a stable and caring family life, Ernest Bullock who also joined the Navy as a stoker had a more difficult time at home. Bullock was one of seven siblings although his eldest sister had gone into service leaving six children at home. Due to the strained family finances Bullock was forced to leave school at thirteen without having a chance to learn about 'decimals or fractions.' After a time as a chemist's errand boy his father obtained him a new job as a store boy in the Wantage engineering works.

Bullock's first six months in the stores' department gave him an opportunity to learn all about the tools that were used in the factory which he considered was a sensible practice. On completion of his six months in the stores Bullock was allowed to choose a trade which was 'taught free without having to pay a premium.'¹⁸² Bullock surprised everyone at the works when he elected to learn the trade of blacksmith as nearly all the young men at that time normally chose to go into the turning or fitting shops. Over the following three years, Bullock learnt how to operate steam hammers and make a variety of agricultural and mining equipment; however a slump set in and, with short time working and wages of just five shillings a week, Bullock began to look for a new post. Again his father stepped in and found him a job as a brake man on the local steam tramway where he learnt how to fire and drive a steam engine.

¹⁸⁰ R. F. Rose, *I.W.M.* 754, 28.

¹⁸¹ *Ibid.* 29.

¹⁸² E.W. Bullock, 'R.N.M.N./ Bullock, *Transcript of Memoirs of Service as a Stoker in the Royal Navy*,' in Liddle Collection, ed. Liddle, P. H. (Leeds, 1971), 4.

After Bullock's mother died his father arranged for him to join the Navy without informing him, although Bullock claimed he was not dismayed at the turn of events. Bullock entered the Royal Navy at Chatham in 1911, on completion, he was drafted to the *Natal* where he began stokehole duties with the other second class stokers. Before joining the Navy Bullock had trained as a blacksmith yet he elected to join as a stoker. By contrast, James Leary trained as an 'engine-smith' manufacturing parts of engines and working with forgings and therefore thought his trade would allow him to become a blacksmith in the Navy, however like Bullock he also ended up as a stoker.¹⁸³ Prior to joining the Navy Leary was a Sapper in the Territorial Army. He joined the Navy because he thought the Army consisted of 'a very low grade of people' and considered that people used to 'look down at soldiers, but looked up to sailors.'

Leary's training also included the practice of firing boilers 'cold' with flint boulders before being allowed to fire a lit furnace. Leary described how he was taught to fire the boiler by numbers in the following sequence. At the order 'one', the shovel would be held at the ready, at 'two' the shovel would be driven into the pile of stones at the foot of the boiler, at 'three' the shovel would be offered to the furnace and at 'four' it would be fired in.¹⁸⁴ This training continued throughout the day although there were breaks when the 'imitation fire' would be drawn back and the trainees given instruction on how to deal with clinker and ash. As soon as Leary was judged to be competent on the 'stones', he was given one of the ship's thirty Bellville boilers to light up and stoke under supervision. Leary was also given instruction in the use of simple hand tools and used an engineer's vice, chisel, file and hammer to fill square holes in pieces of iron with round plugs.¹⁸⁵

Coal Trimming

On being rated stoker second class, Rose joined his first ship the *Irresistible* as a coal trimmer. He described trimming as being 'hard work....very

¹⁸³ James Leary, *I.W.M. 553/18* (London, Imperial War Museum Sound Archive, 1975), p. 127.1.

¹⁸⁴ *Ibid*, 56-9.

¹⁸⁵ *Ibid*, 58.

hard work.¹⁸⁶ The job of coal trimmer entailed filling a steel box like structure known as a skid with coal and then transporting it from the coal bunker to the furnace. Rose described the skid as being similar to a 'double ended baby's pram with two runners on the bottom like a sleigh.'¹⁸⁷ The skid weighed between two and three hundredweight empty and held approximately two hundredweights of coal when full which had to be shovelled out of the bunker and into the skid and then dragged over the steel deck to the furnace with one trimmer pulling the skid on a rope, while another pushed from behind.¹⁸⁸ In order to facilitate the journey of the skid from bunker to furnace, the *Irresistible* was fitted with what was described as a 'railway' which consisted of a walkway with steel walls that helped the coal trimmer's exercise some control over the four hundredweight steel skid, which was liable to go out of control should the ship heave or roll.

The trimmers continued the process of transporting the skid from bunker to furnace and back again throughout the entire four hours of their watch without respite. Each pair of trimmers supplied coal to two boilers, each boiler having four furnace doors. With regards to the nature of a trimmer's work, Rose could not make up his mind which was the hardest part of the job... 'filling up the skids or pushing them back into the stokehole.'¹⁸⁹

The *Irresistible's* coal bunkers held 1,800 tons of coal which took two days to get in from the collier but which lasted only seven to ten days, dependent on the number of boilers in use.¹⁹⁰ Moreover, because the *Irresistible* was fitted with anti-torpedo nets, the bunkers extended right to the stern increasing the distance between the bunker and the furnaces which made the job a lot harder.¹⁹¹ Rose estimated that by the time he had emptied his skid in front of the furnace and gone back for another load, the stoker firing the boiler would have used up all the coal in front of him thereby making his task a continuous cycle. Inevitably, this demanding job conducted in conditions of

¹⁸⁶ R. F. Rose, *I.W.M.* 754, 33.

¹⁸⁷ *Ibid.*, 34.

¹⁸⁸ *Ibid.*, 35.

¹⁸⁹ *Ibid.*

¹⁹⁰ *Ibid.*

¹⁹¹ *Ibid.*

extreme heat, noise and coal dust took its toll on the men and Rose would often be in a state of 'nervous collapse, wet through with sweat and as black as a sweep' at the end of his watch.¹⁹²

The German Navy had a different arrangement for transporting coal from the bunkers to the stokehole. Onboard SMS *Seydlitz* coal-trimmers filled baskets with coal from the bunkers which were then hooked up to transporters on an overhead travelling rail system. The travelling rail allowed trimmers to push each basket of coal far more easily and with much less effort than the skids used by British trimmers. Each stokehole was connected to the bunkers by a coal delivery hopper which allowed the German trimmer to deliver his basket of coal directly to where it was required. In action, 100 stokers were needed to man sixteen 'action' bunkers on *Seydlitz* with additional stokers required to push the baskets to the bunker hoppers.¹⁹³

It has been claimed that coal bunkers gave protection to the hull from penetration by enemy shell with two feet of coal considered equivalent to one inch of steel.¹⁹⁴ However, this argument was challenged by a ship's engineering officer who served in the *Agincourt* during the First World War. He described how it was necessary to start trimming down from the ship's upper coal-bunkers as soon as possible after leaving harbour in order to ensure that there was an adequate supply of coal in the immediate vicinity of the stokehole ready for action. This routine, probably repeated in most other ships would therefore have destroyed any possible protection afforded by the coal by the time the ship made contact with the enemy.¹⁹⁵ Furthermore, in ships requiring good endurance a large amount of coal had to be stowed in reserve bunkers which were often situated under the waterline and difficult to access because of closed watertight doors, scuttles and hatches making the coal all but unusable when ships were closed up for action.¹⁹⁶

¹⁹² R. F. Rose, *I.W.M.* 754, 33.

¹⁹³ Engineer Commander Otto Looks, 'The Engine Room Staff of S.M.S. Seydlitz in the Battle of Skagerrack,' *Naval Review* 10, no. 2 (1922). 309.

¹⁹⁴ D. Brown, 'The Introduction of Oil Fuel', *Journal of Naval Engineering*, 37, no. 2 (1997) 4.

¹⁹⁵ Reginald W Skelton, 'Coal Versus Oil for the Navy,' *The Royal United Services Institution* 79, no. 514 (1934). 9.

¹⁹⁶ P. M. Rippon, *The Evolution of Engineering in the Royal Navy*, 2: vol. 1, 83.

As an added burden, Rose described how trimmers actually handled the coal twice, once when trimming the bunkers and delivering the coal to the furnace and the second time when the trimmer had to remove the ash and clinker from the stokehole.¹⁹⁷ This was also a problem for Ernest Bullock whose ship, the *Natal*, was fitted with ash ejectors in all stokeholes except the one Bullock was assigned to. He described the ash ejectors as being 'very efficient', however because his stokehole was not fitted with one he was forced to fill his skid with ash at the end of each watch and drag it to a stokehole which had an ejector in order to dispose of the ash overboard.¹⁹⁸

The ash ejector consisted of a large hopper with steel grills over the top in a lattice of eight bars each way so that any clinker or ash larger than the space between each set of bars had to be broken up to prevent it from blocking the ejector pipe. The ash hopper was connected to a sea water pump which discharged the ash and clinker overboard through a 'U' tube which was designed to prevent water being sucked back and flooding the stokehole. Another means of disposing ash and clinker was by an electric or hand operated hoist to the upper deck. The ash would be bagged up in old coal bags and hoisted to the upper deck by ash parties made up from seamen who would collect the ash bags and then ditch them over the ship's side. Because the *Irresistible* was a relatively old ship by the time Rose joined her she was still fitted with a hand worked ash hoist with a forty to fifty foot long ash chute, whereas the newer *Birmingham*, a ship he later served in, was fitted with an electrically driven hoist.¹⁹⁹

When he began duties as a coal-trimmer on his first ship, the *Natal*, a Duke of Edinburgh class armoured cruiser in 1911, Bullock used to enter the bunker equipped with a short round nosed shovel and a 'duck lamp' lit by rape seed oil. He described the coal dust as being so thick that his windpipe would get clogged with coal dust, forcing him to clear it by 'much hawking and spitting.' On completion of his watch, Bullock would be so drained of energy he

¹⁹⁷ R. F. Rose, *I.W.M. 754*, 34-5.

¹⁹⁸ E. W. Bullock, 'Recollections of Naval Service,' 7.

¹⁹⁹ R. F. Rose, *I.W.M. 754*, 40.

remembered that, like all the other new second class trimmers, he would have to wait at least half an hour before he had the strength to bathe himself in the stokers' bathroom, a condition which the 'old salts' described would either 'make or break' him.²⁰⁰ Bullock regarded a stoker's life during the coal-era as worse than being in 'chokey' (prison) as he claimed that in 'chokey at least you could guarantee a full night's undisturbed sleep and rest.'²⁰¹

On joining his first ship a stoker could expect to undertake the gruelling duties of coal trimmer for six months before he would be allowed to fire the boilers. Every new stoker assigned as a coal-trimmer spent the first six months of their job under the direct supervision of a chief stoker, during which time their progress was monitored and recorded. After six months, and provided they had shown good progress and efficiency and had demonstrated that they could work a boiler at full power, the second class stoker would be selected to sit for the first class stoker examination. The syllabus for first class stoker included:

Ability to attend and lubricate a bearing,
Names and uses of the principal tools used in the engine room department,
Demonstration of an intelligent use of the more simple hand tools (spanner, hammer and chisel, file, screw driver),
Ability to plait a gasket for packing glands,
A fair knowledge of the Stoker's manual,

In addition, second class stokers had to demonstrate a fair knowledge of rifle exercises before they could be passed for first class rate.²⁰² On successful completion of the first class examination, which was conducted orally by an engineering officer, the newly rated stoker first class would be promoted from coal-trimmer to stoker on a boiler front.²⁰³ Dependent on the type of ship and its boiler arrangements, a first class stoker would have one or two boilers to stoke during a watch. S.P.O. Reynolds gave the following description of the scene in a stokehole when the *Lancaster* was working up to full power:

Groups of boilers would be lit and connected in turn, until all thirty-one boilers were 'on-line' and supplying steam to the engines. At full power the stokehole

²⁰⁰ E. W. Bullock, 'Recollections of Naval Service,' 6.

²⁰¹ Ibid.

²⁰² *Stoker's Manual* 1912, 121.

²⁰³ E. W. Bullock, 'Recollections of Naval Service,' 6.

reverberated to the 'roar of the furnaces' and the 'noise of the fan engines.' These were interspersed with the 'shouts of the leading stokers' and the 'curses of the coal-trimmers' as they drew the coals from the bunkers and deposited them onto the plates prior to their delivery in the 'miniature hells' that yawned up in front of them.

Reynolds observed dryly that 'Dante's Inferno was nowhere in it.'²⁰⁴ If that was not enough discomfort, Reynolds recalled the 'blinding' coal dust and the 'terrific heat' commenting that 'taking it all around, it [the stokehole] was no place for a Parson's son.'²⁰⁵ However, this was not a clue as to Reynolds' birth status, as an examination of his birth certificate shows that he was registered as being born 'illegitimate' on 5th February 1871 to Margaret Reynolds, whose occupation was given as 'house servant.'²⁰⁶

Reynolds joined the Royal Navy at Pembroke Chatham in 1893, signing on for twelve years. Prior to joining the Navy Reynolds was employed as a 'seaman', therefore he probably served in the merchant service or possibly as a fisherman. This being the case, it is surprising that Reynolds was not steered towards joining the Navy as a seaman by the recruiting staff due to his previous experience when he applied to join. It took Reynolds some eleven years to make leading stoker before his service expired and he left the Navy in July 1905, signing on for the Royal Fleet Reserve before he left. However, times may have been hard in civilian life as Reynolds only spent three months as a civilian before he applied to be discharged from the R.F.R. to enable him to re-join the Navy, which he did in October 1905.²⁰⁷ By this action, Reynolds followed the pattern established earlier in this chapter whereby stokers were more liable than seamen to leave the service after their first period of engagement but then re-enter within twelve months

²⁰⁴ J. W. Reynolds, *Mediterranean Diary*, 56-7.

²⁰⁵ *Ibid.*

²⁰⁶ 837/020011, 'Births in the Southern District of Kirkpatrick Flemming in the County of Dumfries, Reynolds, John, Walker,' ed. Registrar of Births and Deaths (Scotlands People, 1871).

²⁰⁷ TNA, ADM 188/286, 'Continuous Service Certificate John Walker Reynolds,' ed. Admiralty (London, Admiralty, 1893).

Firing the boilers

On the *Irresistible*, Stoker Rose had one boiler with four furnaces to manage, a job which he considered 'easy.' For Rose, the hardest work for any stoker was 'definitely trimming.'²⁰⁸ Rose observed that one of the most important tasks of a boiler front stoker was to keep the ash pits under his furnace clear of ash and his fire bars clear of clinker. Removing the clinker from the fire bars required two men. (See Illustration 4, p. 85). One would hold open the doors to the furnace, while the other would grab hold of a ninety pound slice which was a nine foot long iron bar, described by Rose 'as big as a room', with a wedge shaped head at one end. Before inserting the slice into the furnace the end would be wrapped with sackcloth to prevent heat travelling through its length and burning the user. Having inserted the wedge end of the slice into the fire the stoker holding it would use a continuous lifting motion to agitate the fire until the clinker rose to the surface. Then, with the use of a two pronged rake known as a 'devil', the clinker would be dragged out of the furnace onto the deck plates where the second stoker would play a salt water hose on the clinker to cool it down.²⁰⁹

When he was cleaning fires Stoker Sidney Knock described how the furnace appeared to 'vomit forth white hot clinker', while the hand-rags which he wrapped around the slice would smoulder from the heat transmitted through the length of the slice.²¹⁰ Because the hot clinker had to be dragged out of the furnace onto the stokehole deck plates, stokers wore wooden clogs in the stokehole rather than leather boots. Rose explained that wooden clogs were impervious to direct heat whereas leather boots would quickly melt under those conditions.²¹¹ In addition to wooden clogs, stokers wore a flannel vest, a soft cap and 'fearnought' trousers which were made from a heavy woollen fire-proof material.²¹²

²⁰⁸ R. F. Rose, *I.W.M.* 754, 36.

²⁰⁹ Sidney, Knock, *Clear Lower Deck*, 47.

²¹⁰ *Ibid.*

²¹¹ R. F. Rose, *I.W.M.* 754, 36.

²¹² *Stoker's Manual*, 1912. 64.



Illustration 4: Cleaning the Fires

Source : © Imperial War Museum Q_018773.

Stokers removing clinker from a furnace with a 'slice' or 'clinker knocker.' The 'clean' stoker in the foreground looks experienced and was probably demonstrating the task. He is wearing new fearnought trousers, he also appears to be wearing leather boots not clogs which were the normal footwear in the stokehole. Only officers wore gloves in the machinery spaces, therefore, the officer in the direct foreground watching the evolution was either a Commissioned or Warrant Engineer. The grimy stoker in the background was one of the watch trimmers waiting to dispose the ashes.

When Rose stood up after bending down to fire coal into the furnace the material would touch his legs remembering , ‘it made you wonder what the dickens is against your leg.....red hot.’²¹³ James Dunn recalled that while fearnought trousers were made of heavy material they did not last long in the harsh conditions of the stokehole. Dunn was issued with three yards of fearnought material every six months from the ship’s Paymaster which he would then have made up into trousers by the tailor or ‘Jewing firm.’²¹⁴

The First World War appears to have introduced some relaxation in stokers’ dress regulations. Stoker Leary remembered that the *Arab*’s stokers’ used to wear ‘any old clothes they had’, or ‘the oldest suit you had’ in the stokehole, although the stokers still retained their own ‘clogs.’²¹⁵ Then again, conditions onboard some of the older ships of the fleet before the war also demanded ad hoc alterations to regulation uniform. Stoker First Class Crowhurst serving in the *Leviathan* in 1902 recorded in his memoirs:

The ship is in bad condition, the bilges are in a bad state and unhealthy. All boilers are leaking and not fit to steam with....I have had to fire with a bag round my head on account of hot water dropping on my neck.²¹⁶

The act of firing the furnace was timed by a ‘Kilroy system’, which was a ‘tell-tale’ arrangement, operated off the main engine through a mechanical linkage which lit a lamp above each furnace in turn. The Kilroy system would show above each furnace ‘fire’ or ‘fire number one’, at the same time a bell would ring to draw the attention of the stoker to which furnace to fire next. However, experienced stokers like Rose would ignore the Kilroy indicator and use their own judgment when it came to firing the boilers, (See Illustration 5, p. 87). Rose described the importance of maintaining the correct steam pressure which was typically 250 to 300 pounds per square inch. Another important task was to ensure that the fire was kept even across its whole length and breadth so that no holes appeared in the fire.

²¹³ R. F. Rose, *I.W.M.* 754, 35.

²¹⁴ James Dunn, *I.W.M.* 769 Reel 6.

²¹⁵ J. Leary, *I.W.M.* 553/18 92.

²¹⁶ *H.M.S. Leviathan* (Chatham: The Historic Dockyard Chatham, 2011), Museum article.

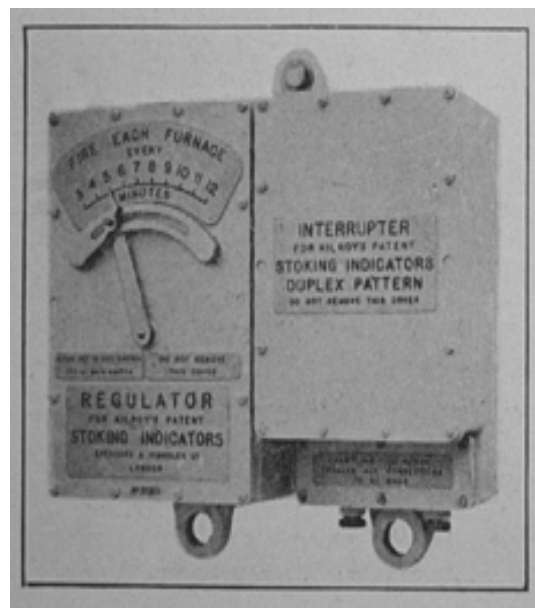


Illustration 5: Example of 'Kilroy's Stoking Indicator' as fitted to RMS Titanic.

Source: <http://www.titanic-model.com/articles/tech/TechFeatureAugust2005.htm>

If the fire became 'thin' a hole would appear in the fire which would send sparks up the funnel, a problem which Rose suggested would be 'fatal' in wartime, as sparks could be observed by the enemy at night.²¹⁷

Leading Stoker Mechanic Jack Cotterell was born in the Welsh coalfields and followed his peers down the pit at the age of twelve. At the age of fifteen Cotterell was made redundant from the pit but was fortunate enough to obtain another job in a local steel works firing the boilers. By 1912 having had 'enough of coal,' Cotterell decided to join the Navy for some adventure only to find himself at Devonport barracks being trained for the job of stoker.²¹⁸ After taking part in steam trials on the *Centurion*, Cotterell was drafted to the light cruiser *Gloucester* which experienced some hard steaming in the first month of the First World War while shadowing the German battlecruiser *Goeben* and the cruiser *Breslau* in the Mediterranean. The stokers on the *Gloucester* were said to have 'gone mad' with the excitement of the chase, making so much steam that the Captain had to order them to slow down.²¹⁹ Cotterell described firing boilers as a 'skilled job' which required much care to ensure that the fire was spread evenly and that all hollow spots were filled so that the fire glowed with a white heat (See Illustration 6, p. 89). In order to closely watch the fire without hurting their eyes, Cotterell and the rest of the stokehole crew wore blue-tinted glasses.²²⁰

In order to keep the stokers clean and in good health they were subjected to a strict regime on completion of their watch in the stokehole. Having washed themselves in their own bathroom, stokers were required to dress in 'dry, clean clothes' and then parade in front of the Chief Stoker of the watch who would inspect each man before allowing him to go down to his mess-deck.²²¹

²¹⁷ R. F. Rose, *I.W.M.* 754, 40.

²¹⁸ Max Arthur, *Lost Voices of the Royal Navy: Vivid Eyewitness Accounts of Life in the Royal Navy from 1914 to 1945* (London, Hodder and Stoughton, 2005).10.

²¹⁹ *Ibid*, 11.

²²⁰ *Ibid*, 12.

²²¹ *Stoker's Manual*, 1912, 64.



Illustration 6: Firing the boilers

Source: © Imperial War Museum, Image Q18593.

Stokers firing the boiler. One stoker holds the furnace door open while the second man in the team fires the coal in. The SPO or Chief Stoker is looking intently at his boiler water level gauge glasses directly in front of him while another team of stokers fire the second boiler to his right.

In 1914 the journalist Filson Young obtained an unusual temporary commission in the Royal Naval Volunteer Reserve which was authorised by Admiral Fisher to enable him to serve on Admiral Beatty's staff in the First Battle Cruiser Squadron. In his description of the workings of the squadron, Young observed that while stokers saw 'nothing during action', he thought they had the hardest work of all as they remained in the greatest peril where they could have been 'blown up or boiled alive', should the ship be damaged.²²² Despite these disadvantages, Young described the stokers of Beatty's flagship *Lion* as having the most enthusiasm of all the ship's company for action, recalling that the stokers were so eager for a 'scrap,' the *Lion* would literally 'hum' with songs from the stoker's mess-decks once the order to raise steam was given. During the Dogger Bank action where the battle cruisers were steamed at up to twenty-nine knots for several hours, Young praised the 'superhuman' efforts made by the stokers in keeping up steam pressure.

To emphasise the spirit of the stokers while in action, Young described how a S.P.O from 'D' stokehole had pleaded with the Senior Engineer to ban his stokers from singing at the boilers, 'because he could not make himself heard during the high speed chase.'²²³ Describing stokers as 'great heroes', Young credited them with playing a 'mighty part in winning the war.'²²⁴ However, he acknowledged that stokers were 'tough nuts' and as such were not included in the 'ornamental part of the service.' As a professional journalist Young would have had a keen eye for detail. Moreover, with no prior knowledge or experience of the trials and tribulations of a stoker's life, his views would not have been coloured by any of the prejudice which stemmed from the class divisions separating the wardroom from the lower-deck and stokers from seamen. Therefore, Young's description of stokers in action provides an illuminating pen-picture which suggests that the value of a stoker's work was held in high esteem by many in the service but the man himself did not quite fit in with the traditional ideals and values of the Navy. In reversing a well-known

²²² Filson Young, *With the Battle Cruisers*, Facsimile Reprint 2002 ed. (Edinburgh: Birlinn, 1921).129.

²²³ Ibid.

²²⁴ Ibid, 175.

proverb, this attitude almost suggests that within the Navy, stokers were expected to be 'heard but not seen.'

L. V. Bedford, joined the Navy as a stoker in 1910 at Chatham barracks. After completing his training Bedford joined the *Arromanche* an old minelayer fitted with ancient tank boilers and reciprocating engines. Bedford described the ship as 'good tuition, but hard living.'²²⁵ Bedford was rated Stoker First Class after only six months early in 1911 and then drafted to the new cruiser *Falmouth*. In contrast to the *Arromanche*, *Falmouth* was fitted with the latest Yarrow water-tube boilers which burnt both coal and oil to generate steam. Bedford was made mate to the chief boilermaker who 'taught him a lot' and helped him to prepare for the leading stoker's examination.²²⁶

Contrary to Christopher McKee's description of the physical stature of stokers and other contemporary and modern opinion, not all stokers were physically large men. Bedford was barely five feet four inches in height and weighed just ten and a half stones. Nonetheless, he observed that men with a small stature were preferred in the stokehole, 'particularly when it came to conducting boiler cleans.'²²⁷ Despite the fact that while on watch he hardly stopped throwing coals into the furnace, Bedford described the work of a stoker as being a 'great job.' However, after only nine months onboard *Falmouth*, he was unfortunately drafted back to Chatham to join the old *Cressy* for two months steam trials prior to the ship going for refit. Bedford described the *Cressy* as 'murder' as she had thirty boilers and eight stokeholes with no watertight doors down below.²²⁸ With hindsight, Bedford observed that without the protection of watertight doors it was, 'no wonder she went down like a stone with the *Hogue* and *Abokuir*.'²²⁹ Moreover, he reflected on his luck in having left

²²⁵ L.V. Bedford, 'Personal Recollections of Naval Service,' ed. Peter H Liddle (Leeds: R.N.M.N. (REC) 009, University of Leeds, Liddle Collection, 1976).

²²⁶ Ibid.

²²⁷ Ibid.

²²⁸ Ibid.

²²⁹ Julian S. Corbett, *History of the Great War: Naval Operations*, 3: vol. 1 (London, Longmans Green, 1921). On 22nd September 1914 the three ancient cruisers H.M.S. *Hogue*, *Abokuir* and *Cressy* were on Dogger Bank Patrol. They were attacked by Lt Otto Weddigen in U-9 who sank all three ships in less than one hour; 60 officers and 1400 men were lost.

the ship before the war started, as he judged the *Cressy* would certainly 'have killed him.'²³⁰

Auxiliary Watch-keeping

Not all first class stokers worked in the stokehole, some became engine-room or outside machinery (auxiliary machinery) watch-keepers. In the engine-room first class stokers would 'watch over' (watch-keep) on the triple-expansion or turbine engines, condensers and their associated pumps and systems. Others would undertake duties as 'outside watch-keepers' (outside the engine-room). These men would be responsible for operating steering gear, dynamos, refrigeration and distilling plants. E.R.As and mechanics also kept watches in the engine rooms and stokeholes but as they were more technically trained men their duties were to supervise the stokers and to conduct repairs and maintenance rather than mind the machinery.

On battleships or battlecruisers stokers could be found undertaking duties far from the stokehole or engine room. Prior to going into action the battleship *Queen Elizabeth* would station two E.R.As and one stoker in each of her main fifteen inch gun turrets to effect emergency repairs to the turret operating systems. One E.R.A. and the stoker would be stationed in the working chamber while the second E.R.A. would be stationed in the shell room. In the event of damage to the hydraulic pressure or exhaust system outside the turret, the E.R.A. from the shell room would be sent to investigate together with the stoker from the working chamber, 'provided the stoker could be spared.'²³¹

Stokers also had their own specialist sea and harbour jobs when they were not engaged in stoking or in engine room or outside machinery space watch-keeping. Each E.R.A. had a stoker allocated to him as a 'mate,' often maintaining a working relationship for an entire commission.²³² Stoker Bullock

²³⁰ L.V, Bedford, 'Personal Recollections of Naval Service.'

²³¹ Thomas G Hutchinson, 'R.N.M.N/Hutchinson (Rec), Transcript of Memoirs of Service as an Engineer Lieutenant Commander R.N.,' in *Liddle Collection*, ed. Peter H Liddle (Leeds, University of Leeds).

²³² Sidney, Knock, *Clear Lower-Deck*, 78-9.

became a 'boiler maker's mate' on the *Natal* in 1911 and with thirty-one boilers to look after, 'there was always plenty of repair work to be done.'²³³ However, boiler repair work was not to everyone's liking. Upon being detailed off as boiler maker's mate, Stoker Rose used to think, 'oh God!' Rose was thankful that he eventually grew too obese to get into the boiler through the access door, a sensation he described as 'shocking.' To climb into a boiler, Rose would stretch his arms into the access and then 'swim' through the small access hole. He thought being inside a boiler was a 'horrible sensation', and suggested that anyone suffering from claustrophobia, 'would be driven mad.'²³⁴ When working inside boilers, stokers would wear a minimal amount of clothing usually just a flannel, a pair of pants and a pair of light shoes as the residual heat made them sweat freely.

A common repair job given to stokers was to replace the slabs of zinc that were bolted inside boilers in order to minimise corrosion. However, 'the worst job of the whole lot', according to Rose, was conducting a boiler clean. During a boiler clean every one of the hundreds of tubes that made up a water-tube boiler had to be individually cleaned using a special tool. Wearing goggles, the stoker would use the cleaning tool in a 'sawing' action up and down each tube in turn. This work covered the men in carbon dust and Rose noted that despite the use of goggles, 'it blinded you and made your eyes sting like blazes.'²³⁵ Rose noted with some irony, that when ships were on foreign stations local labour was employed on these dirty and dangerous jobs.²³⁶ However, while this may have come as a great relief to every stoker in the fleet, the fact that they could so easily be replaced with cheap native labour could only have added to the low status accorded them.

Louis Le Bailly served as an Engineer Lieutenant in the *Hood* and left the following description of a typical boiler clean:

²³³ E. W. Bullock, 'Recollections of Naval Service,' 9.

²³⁴ R. F. Rose *I.W.M.* 754, 49.

²³⁵ *Ibid.*

²³⁶ *Ibid.*, 53.

To prevent corrosion of boiler drums and tubes it was frequently necessary, depending on sea time, to remove all heat-insulating lagging, open up each boiler, clean and black-lead the internal fittings and then, through a small manhole, perform the same rites inside each of the three boiler drums, brushing through every tube. By dropping carefully counted balls down each of several thousand tubes we ensured that there was no blockage which, when steaming, could inhibit the water's circulation and cause a tube to melt and explode into the furnace with probable casualties. Leading Stoker bricklayers with their unskilled mates would be breaking up damaged fire brick walls in the furnace and removing the rubble before building and cementing new ones. Yet another gang would be inserting ten foot saws between the tubes to remove soot and clinker and sweeping down and oiling *Hood's* huge funnels. Meantime artificers and mechanics would be refitting steam, water and oil valves, repairing steam leaks and associated auxiliary machinery. Finally, each boiler would be pumped up to its working pressure and tested for leaks. With twenty-four boilers in four boiler rooms this job was never ending. Asbestosis had not been heard of and we all lived for long hours in a fog of brick dust, asbestos fibre and soot. Work went on round the clock in six or eight hour spells depending on the heat and urgency, until completed.²³⁷

Other stokers could be trained as blacksmiths or plumbers' mates particularly if they had previous experience before joining the service. While serving in the *Dahlia* off the port of Aden, Stoker Bullock repaired the rudder of the ship's motor boat, a job which would normally have been undertaken by the blacksmith. However, while the *Dahlia* had a forge she did not carry a blacksmith, neither were any of the E.R.As able to repair the boats broken rudder hinge. Therefore, as Bullock had served an apprenticeship in a blacksmith's shop before entering the Navy, he successfully repaired the hinge himself despite the engineer's doubts as to his competence.²³⁸

In conclusion, this chapter has shown that for forty-seven years from the first steam ship *Comet* in 1822 until the arrival of the first E.R.As in 1869 stokers were highly regarded and relatively skilled men capable of taking charge of an engine room or stokehole. Despite opposition from certain quarters many stokers became engineers in their own right, indeed the rating of Chief Stoker was specifically introduced for this reason. The contribution that a skilled team of stokers could make to the speed and efficiency of a ship was widely recognised by senior officers and stokers were well looked after receiving

²³⁷ Louis Le Bailly, *The Man around the Engine* (Emsworth, Hampshire: Kenneth Mason, 1990). 43-4.

²³⁸ E. W. Bullock 'Recollections of Naval Service,' 48.

higher rates of pay and special privileges which were denied to seamen ratings. However, after the E.R.A. branch was introduced and the rate of Chief Stoker was abolished, stokers were subjugated to the position of semi-skilled labourers to the more highly skilled E.R.A. From this point on, stokers appeared to occupy a lower place in the naval hierarchy than they had hitherto.

Until the last decade of the nineteenth century, stokers entered the Navy, were kitted out and then sent directly to a ship where they were expected to learn 'on the job.' By contrast, seamen were trained for up to three years prior to going to sea. The sudden influx of a new draft of untrained stokers on a ship's company would undoubtedly have brought scorn and derision upon them from trained and confident sailors of all types. Moreover, as machinery became more complex problems arose through a lack of experience leading to deaths, injuries and machinery breakdowns. These incidents were widely reported within the service and by naval correspondents in the press which gave second class stokers in particular an undeserved reputation for being unskilled.

While the Admiralty persisted in sending untrained stokers to its newest ships which then suffered from a lack of efficiency, emerging navies such as the Imperial Russian Navy led the way by adopting a novel training regime. After a lengthy course in stoking at a training base, the Russian stoker was sent to France to learn how to operate the water-tube boiler from the boiler manufacturers before joining his ship. Even after the Royal Navy introduced a formal training system at the end of the nineteenth century, a stoker was still liable to be trained in an ancient training ship with outdated machinery and then sent to a modern vessel where he would have to re-learn everything.

As the water tube boiler became more widely fitted in ships, the requirement for stokers' outstripped demand. Evidence presented suggests recruiting officers were prepared to pass men fit for service as stokers regardless of whether they met the age or physical standards required. The lowering of recruitment standards at a time of great demand was to be expected. However, when the demand was caused through the introduction of new technology this became a mistake. This mistake was compounded by the

complacent attitude shown by the Admiralty towards providing sufficient training for the large numbers of stokers entering the Navy. The First Sea Lord acknowledged that untrained stokers were being rushed into the fleet but was adamant that it would not slow down the boiler replacement programme. The result was inevitable. Stokers were blamed for machinery failures and breakdowns while the men who had been recruited in haste and who were not physically mature for the job of stoking only added to the already strong notion that stokers were not up to the job. Despite these problems, evidence has been presented which suggests that overall, once recruited, stokers tended to remain in service longer than seamen and were more prepared to return to service once discharged. This evidence challenges contemporary and modern accusations that stokers lacked the traditional values of seamen or that they were less loyal to the service.

The recruitment of stokers and other engine room personnel continued throughout the first decade of the twentieth century until the unthinkable occurred in the Navy. In 1914 the engine room branch became the largest branch of the lower-deck surpassing seamen, who, from the very beginning of the Royal Navy, had always been the dominant force. However, it was not to last, as predicted by Lionel Yexley, this was the heyday for stokers. Ironically, at a time when the need for stokers to man the water-tube boiler was at its highest, the introduction of oil fuel resulted in an overall reduction in the number of stokers needed to man the new oil-fuelled boilers. While coal-fired ships remained in the Navy for several more years, the end of the First World War allowed seamen to reclaim their dominant position. The introduction of the water-tube boiler could have gone some way to restoring stokers to the status of skilled men, as they were the men specifically tasked with operating it. Unfortunately, the failure of the Admiralty to provide stokers on entry with the necessary training resulted in a lost opportunity and stokers were unable to capitalise on this new technology. While trained stokers were undeniably masters of the art of stoking, their overall status became tarnished with the perception that stokers were relatively unskilled men. This perception was made on the basis of men who were not unskilled, but mostly untrained.

Chapter Three

Heat exhaustion, stokers' cramp and other stokehole maladies

The following chapter has extensively relied on the published annual '*Statistical Report for the Health of the Navy*' from the years 1897-1936 together with additional medical reports and journal articles that extend the period up to the 1950s. Life in the stokehole exposed stokers to physical dangers including accidents, occupational diseases, illnesses and particular medical conditions that arose as a direct result of the type of work they were engaged in. While it is recognised that seamen and others would also have suffered from 'occupational' medical conditions, the purpose of this chapter is to place the medical history of stokers on record and to examine how their work affected their health. Wherever possible comparisons will be made in order to determine whether there were any noticeable differences between the health of stokers and other men of the lower-deck.

While the annual reports for the '*Health of the Navy*' are detailed documents covering every known medical condition, the returns from individual ships, commands and stations were as a rule, only given as a total number of men afflicted. As a result, apart from isolated exceptions it has proved impossible to extrapolate stokers out of the total numbers given for most conditions reported. One exception was the recording of tuberculosis (TB). After 1906 each return for TB was broken down to identify the numbers of men afflicted from each branch including officers, therefore this disease can be reported with some accuracy. However, if a ship's surgeon had a particularly interesting case the return from that vessel might identify the patient as a stoker, seaman or marine with a description of the treatment given and the subsequent outcome. These individual case studies have allowed some judgements to be made with regards to the health of stokers compared to others.

Confined spaces

As previously described by Stoker Richard Rose, the least attractive of all jobs undertaken by stokers was that of coal-trimming, not least because of the potential dangers from asphyxiation through a build-up of noxious gases or through becoming trapped or crushed by the weight of coal. D. J. Hoare, served as an engineer lieutenant in the *Collingwood* and in the unpublished memoir of his service life he recounted two incidents which arose through asphyxiation caused when men entered coal-bunkers containing 'foul-air.'

In the first incident, a team consisting of a chief stoker and three stokers entered a coal bunker in the *Collingwood* in order to determine the amount of coal remaining. This calculation was made by estimating the average level of coal in the bunker and measuring the remaining space between the top of the coal and the deck-head (roof or ceiling of the bunker). On this particular occasion, having tested the bunker for 'marsh gas', (also called methane or fire-damp) with a safety lamp and determining that the bunker was free from gas, the chief stoker and his small team of stokers entered the bunker each carrying a 'tea-pot' type spirit lamp with a wick and naked flame. Lt Hoare specified that the lamps were lit by 'causer oil', although Stoker Bullock used the same type of spirit lamp lit by 'rape seed oil.'²³⁹ Nonetheless, despite having checked that the bunker was free from 'marsh gas', an explosion occurred a short time after the men had entered the bunker which killed the chief stoker outright.²⁴⁰

On another occasion after coaling ship in the rain at Lamlash, Hoare ordered the coal bags to be left to dry on the upper deck guardrails overnight. However, the Commander gave Hoare a reprimand for cluttering the ship's guard (safety) rails with dirty coaling bags and ordered him to remove them. Unfortunately, the bags were still damp when they were thrown down a coal scuttle to the foremost coal bunker which was where the coaling bags were normally stowed in between coaling ship. Later that day, Chief Stoker Flynn

²³⁹ D. J. Hoare, Engineer Lieutenant R.N. 'Personal Recollections of Naval Service,' in *R.N.M.N./Hoare, Liddle Collection* (Leeds, University of Leeds, 1979), 10.

²⁴⁰ *Ibid.*

went down the coal bunker which was only accessible through a manhole cover on the upper deck, to stow the bags properly when he suddenly stopped communicating to the stoker above. Another stoker was sent down the bunker, only to find Flynn dead from the fumes in the bunker.²⁴¹

The circumstances which led to the unfortunate demise of Chief Stoker Flynn were in direct contravention of an Admiralty directive contained within the *Stokers' Manual* which warned against the stowage of damp coaling bags. Paragraph 201 stipulated that in order to prevent sufficient heat being generated to cause spontaneous combustion by the oxidation of the coal dust remaining in them, used coal sacks and bags were to be 'quite dry' when stowed. In addition, the directive ordered that coaling-bags were to be removed and ventilated from 'time to time' and stowed in such a way that air could circulate between them.²⁴²

Despite strict precautions to prevent accidents to men working in confined spaces, deaths through noxious gases appear to have been a relatively common feature of naval life, particularly during the coal-era. Admiralty Instructions regarding the entering of closed spaces that had been insufficiently ventilated warned against two main dangers. The first was the danger from the presence of a gas which could form an explosive mixture with air causing it to ignite when a naked light was brought into it. In the second, men were warned regarding the absence of the air necessary to support life, owing to it having been used up, or excluded by another gas.²⁴³ Both of these conditions were liable to be encountered in coal bunkers and ships double bottoms used as fuel or water tanks, areas in which stokers commonly worked.

In 1910 twenty-eight cases of poisoning were recorded caused through men working in insufficiently ventilated closed spaces. The most serious of these were five cases of poisoning by carbon monoxide which occurred in the

²⁴¹ D. J. Hoare, Engineer Lieutenant R.N, 'Personal Recollections of Naval Service,' 11.

²⁴² 'The Stokers Manual', (London, Admiralty, 1912), 174.

²⁴³ Ibid.

Cochrane.²⁴⁴ The *Cochrane* was coaling ship at Cromarty when it was noticed that coal was not being cleared from the chutes leading to 'D' port lower bunker, whereupon a leading stoker was sent to investigate the cause. On entering the bunker the leading stoker found five coal-trimmers in the bunker unconscious. After medical intervention, four men recovered, however one man died despite being given hypodermic injections of strychnine, the administration of ether, and artificial respiration which was continued for one and a half hours. The exact nature of the atmosphere that was liable to be found in confined spaces was still a relatively unknown science at this time as suggested by the statement made by the Fleet Surgeon:

As regards the origin of the gas which caused the accident opinions are divided, and the matter is still being investigated. Prima facie it seemed to me that it must have been evolved in some way by the coal that was being taken in.²⁴⁵

In the preceding year, there were a number of similar examples of coal bunker accidents. Four stokers were overcome by gas while trimming a bunker in the *Euryalus*, although fortunately they all later recovered.²⁴⁶ A stoker in *Black Prince* suffered an 'epileptiform seizure' after becoming partially suffocated by coal dust in a bunker while coaling, while a bunker explosion in the *Hogue* resulted in general burns to eight stokers, two of whom died from their injuries.²⁴⁷ In addition, the *Implacable*, *Euryalus* and *Inflexible* all reported burns to stokers from coal-bunker explosions that year.²⁴⁸

Being crushed by coal in the bunker was another danger that stokers needed to be aware of. In the *Leviathan* a stoker was suffocated in a bunker after being trapped when the coal slipped and buried him. The accident report stated that an 'arch' of coal had probably formed in the bunker which gave way causing the coal to slide and fall on top of the man. After several tons of coal had been dug away and removed through the bunker door, a task which

²⁴⁴ 'Statistical Report of the Health of the Navy for 1910,' in House of Commons Papers, ed. James Porter (London, Admiralty, 1911). 33-4.

²⁴⁵ Ibid.

²⁴⁶ Ibid, 33.

²⁴⁷ Ibid, 26.

²⁴⁸ Ibid. 39.

probably took several hours; the man was found dead.²⁴⁹ In a further example the annual Fleet Medical returns for the *St Vincent* reported in 1911 that a stoker, who had fallen asleep in a bunker prior to coaling ship, had subsequently been crushed to death when a hundredweight of coal was shot down the chute on top of him.²⁵⁰

Tropical climates brought their own particular problems and dangers for the unwary stoker detailed to work in a coal bunker. While serving as a S.P.O. in the *Bluebell*, Ernest Bullock remembered arriving in Port Moresby, New Guinea, where the *Bluebell* was directed to coal from a mound of coal which had been 'over-run with jungle vegetation.' In Bullock's judgement the coal had lost its 'goodness' being just about perished through having lain out in the open for too long but it had to be taken in all the same. On completion of coaling ship it was found that a number of snakes had been brought aboard with the coal no doubt making the stokers a little hesitant when entering a darkened bunker.²⁵¹

Scalds, burns and explosions

While coal-trimmers were subjected to the dangers of asphyxiation, explosions and burns, being crushed by coal and even snake bites, the first class men stoking the boilers had their own particular medical conditions and injuries to contend with. In 1905 a steam pipe burst in the *Implacable* while on the Mediterranean Station which killed eight stokers.²⁵² Similar accidents occurred over following years. Six stokers were scalded and two killed after a boiler tube burst on the torpedo-boat destroyer *Dragon* in 1907. In 1909 a joint in a boiler door gave way in the destroyer *Otter* at Wei-hai-wei which scalded four stokers and killed two others.²⁵³ The following year a similar accident occurred when a boiler tube burst in the *Sutlej* which blew off a furnace door and enveloped five stokers in 'heat and flame', killing four of them.²⁵⁴

²⁴⁹ 'Statistical Report of the Health of the Navy for 1912,' 58.

²⁵⁰ Ibid. 41.

²⁵¹ E. W. Bullock, 'Recollections of Naval Service,' 41.

²⁵² 'Statistical Report of the Health of the Navy for 1905,' 24.

²⁵³ Ibid, 1909, 69.

²⁵⁴ Ibid, 1910, 38.

Heat exhaustion

Apart from burns and scalds, the two most common ailments that affected stokers working in the stokehole were 'heat exhaustion' and 'stokers'-cramp.' The terms 'heat exhaustion' and 'heat stroke' appeared to have been interchangeable during this period with both terms often used by ship's surgeons to describe heat related conditions. Furthermore, it is apparent that the medical profession at the time did not fully understand the underlying complexities or the differences between heat stroke and heat exhaustion, as pointed out by Staff Surgeon Rees of the *Fox*, who observed:

our present knowledge is not sufficient to differentiate between the aetiology (cause) of the two diseases.²⁵⁵

Present medical knowledge defines heat exhaustion as a condition arising from exercise or work conducted in a hot, humid place where body fluids are lost through sweating, causing dehydration and overheating of the body giving rise to a maximum temperature of 40 degrees Centigrade. By contrast, heat stroke is defined as a 'life threatening condition' caused when a person's cooling system which is controlled by the brain, stops working. Without cooling the internal body temperature rises to 40.6 degrees (C) or greater at which point brain damage and damage to other internal organs will result.²⁵⁶ The following chapter will record all temperatures in Fahrenheit as given in the original records.

The 1904 medical return from the 'Irregular Force' reported fifty-six cases of heat stroke with two deaths.²⁵⁷ In the following year the same squadron reported ninety cases of heat stroke among the fifty-three vessels which made up the command. Two of these cases were fatal with the medical report

²⁵⁵ Oswald Rees, 'Body Temperature and the Causation of Heat Stroke,' in *Statistical Report of the Health of the Navy*, ed. James Porter (London, Admiralty, 1908). 114.

²⁵⁶ John P Cunha, *Heat Exhaustion and Heat Stroke* (WebMD, 2012 [cited 2 May 2012]); cited in http://www.emedicinehealth.com/heat_exhaustion_and_heat_stroke/article_em.htm.

²⁵⁷ 'Statistical Report of the Health of the Navy for 1904,' 53.

highlighting the fact that the great majority of all heat-stroke victims were 'stokers, when steaming in the tropics.'²⁵⁸

In 1906 the 'Irregular List' reported fifty-seven cases of heat stroke which included one man who had to be invalided home and one death. The 'Irregular List', contained all medical returns from ships on independent passage, or those proceeding to or from a station, and included crews carried in transports to commission ships on a foreign station, or on passage home after paying off. Again, the great majority of these fifty-seven cases were identified as 'stokers, while steaming in the tropics.'²⁵⁹ In 1907 the Irregular List reported seventy-eight cases of heat stroke, fifty-one of these occurring in the *Colombo* while on passage through the Red Sea. This time the report stated that the majority of cases occurred amongst the 'young stokers' who were making their first trip in the tropics.'²⁶⁰

In 1908 the Cape of Good Hope Station recorded forty-nine cases of heat-stroke during the year, of which the majority occurred either in the Red Sea or between Aden and Hong Kong. However, by this time the symptoms of heat related conditions were better understood and these cases were divided into heat-stroke, caused through exposure to the direct rays of the sun, and heat-exhaustion, which afflicted men working in stokeholes and engine rooms under high temperatures. The medical return for the Cape station stated that the majority of the forty-nine cases, 'were attributed to the latter.'²⁶¹

Staff Surgeon Rees of the *Fox* conducted a study into the symptoms and effects of high air temperatures on stokehole and engine-room ratings combined with the incidence of heat in the tropics. His study suggested that the idea that the temperature of the body as a fixed and certain quantity, capable of being set down in absolute figures; 'must at once be given up.'²⁶² As part of his study, Rees conducted a self experiment over a two day period in order to

²⁵⁸ 'Statistical Report of the Health of the Navy for 1905,' 34.

²⁵⁹ Ibid, 1906, 34.

²⁶⁰ Ibid, 1907, 34.

²⁶¹ Ibid, 1908, 33.

²⁶² O. Rees, 'Body Temperature and the Causation of Heat Stroke,' 107.

determine his average body temperature while the *Fox* was on passage through the Red Sea. The surgeon recorded that his rectal temperature ranged between 98.2 and 102.6 degrees (F), while his temperature by mouth was 97.5 to 99.6 degrees (F). The surgeon admitted that his highest recorded temperature had been 'accidental', from which it can be deduced that he had probably spent too long in a particularly high temperature area of the machinery spaces. Nevertheless, Rees came to the conclusion that, despite the variances between oral and rectal temperatures, the rectal temperature would always be between one and two degrees higher than that taken orally.²⁶³

Body temperature is controlled by the regulation of heat production and the regulation of heat loss, the first being a chemical agency while the second is a physical one. With regards to the regulation of heat loss, Surgeon Rees considered it as comprising three main aspects. These were described as evaporation, conduction and convection. In one experiment carried out in the stokehole of the *Fox*, Rees demonstrated the effect of evaporation on the body when he lost two and a half pounds in weight by simply sitting in an area where the wet bulb temperature recorded 84 degrees and the dry bulb 104 degrees (F).²⁶⁴

The only difference between a dry and a wet bulb thermometer is that the wet bulb thermometer is encased in a cloth material and kept wet through a 'wicking' arrangement. As the water evaporates it cools the wet bulb thermometer thereby allowing the relative humidity and dew point temperature to be calculated through the use of a psychometric chart. In air that is less than saturated (one hundred per cent relative humidity) the wet bulb temperature will always be lower than the dry bulb temperature.²⁶⁵ From this experiment Rees concluded that the rate of evaporation of sweat depends on the relative humidity of the surrounding air, therefore the greater the difference between the wet and dry bulbs, the greater the loss of heat through water evaporation.²⁶⁶

²⁶³ O. Rees, '*Body Temperature and the Causation of Heat Stroke*,' 107.

²⁶⁴ Ibid.

²⁶⁵ *Wet-Bulb Thermometer* (2009 [cited 11 August 2009]); cited in

<http://www.britannica.com/EBchecked/topic/688997/wet-bulb-thermometer>.

²⁶⁶ Oswald, Rees, '*Body Temperature and the Causation of Heat Stroke*,' 108.

Rees suggested that in order for men to be kept cool through conduction, much depended on the co-efficient cooling of the body relative to its temperature and the temperature of the surrounding air. However, conduction was dependent on the form of the body, taking into account its colour, the condition of the surface, the type of clothing worn and on the presence of layers of subcutaneous fat. Rees argued that a small, wiry stoker would lose heat more rapidly than a 'fat' one, as fat has only half the conductivity that muscle has. On the other hand, Rees suggested that the 'fat man' would lose heat through water evaporation at a much greater rate than a thin man.²⁶⁷

Rees also suggested that the colour of a man's skin played its part in radiating heat. Using the Black man as an example, Rees argued that his dark skin would be an advantage in sunlight, while it would also radiate heat (convection) better than a light one in the stokehole.²⁶⁸ However, one point that confused Rees was the reason why coal-trimmers working in coal-bunkers often appeared to be more susceptible to heat stroke than those who were engaged in firing the furnaces. His analogy of the Negro suggested that coal trimmers should have been able to keep cool because they were covered from head to foot with a thick coating of black coal dust. Therefore, their 'artificial' colour should have allowed them to radiate heat much faster than the uncovered body was able.²⁶⁹ Then again, Rees may have overlooked the fact that the temperature of a coal-bunker would naturally be greater than that in the stokehole, due to the complete absence of any natural or forced air circulation.

It could be argued that the ability of a stoker to withstand the heat in an enclosed coal-bunker was more a matter of the individual constitution of the man rather than any differences in skin colour be that natural or artificial. When Stoker Vincent joined the *Aspasía* as a new second class stoker one of the first jobs he was given was to clean out the reserve coal-bunker. The reserve coal-bunker was long and narrow with a deck head height of less than six feet and was situated immediately over the engine room with the main-steam pipes

²⁶⁷ Oswald, Rees, '*Body Temperature and the Causation of Heat Stroke*,' 108.

²⁶⁸ Ibid.

²⁶⁹ Ibid.

running directly under the bunker floor. At the time it held around ten tons of coal and Vincent described it as being as 'hot as an oven and completely devoid of breathable air.'²⁷⁰ The coal was removed in large baskets which were hand filled and then dragged along the deck of the coal-bunker to be deposited down a chute. It took Vincent and two other stokers all day to complete the work of clearing out the bunker. Due to the extreme heat, the men worked naked apart from their boots taking it in turns to carry out the work. They changed over every fifteen minutes in order to give themselves sufficient time to recuperate after each exertion. Due to the heat and choking coal dust, Vincent declared that it was impossible for any man to work for longer than fifteen minutes. Indeed, the conditions were so bad that one man began to vomit after coming out of the bunker and he eventually had to be relieved after suffering a 'fainting condition.'²⁷¹

While stokers appeared to have looked upon the ever-present choking coal-dust as an unfortunate by-product of their work, it would nowadays be regarded as a dangerous occupational hazard which would require extreme preventative measures, much like the current precautions which are required to be employed when working with asbestos. In 1936, a challenge was made in the House of Lords over the question of the number of naval stokers who had been discharged from the service with diseases of the chest. Although the Navy by this time was almost entirely oil fired, some of these men may have contracted the disease during the early years of their naval service when coal – firing was the norm. Nonetheless, Lord Stanley considered that no special precautions were considered necessary, 'to improve the conditions under which Royal Navy stokers worked in order to reduce the risk to their health.'²⁷² Be that as it may, according to stoker James Leary, the coal dust 'used to get up your nose, in your eyes and down your ears you see. It really got on your lungs, there's no doubt about that.'²⁷³

²⁷⁰ H. Vincent, *A Stokers Log*, 37.

²⁷¹ *Ibid.*

²⁷² Parliamentary Correspondent, 'Working Conditions of Ship's Stokers,' *The British Medical Journal* (1936). 675.

²⁷³ J. Leary, *I.W.M.* 553/18,109.

One aspect of heat exhaustion that puzzled Staff Surgeon Rees was why it only afflicted some of the men from the engine room and stokehole crews and not all of them. He thought differences in the atmospheric conditions that existed between the engine room and the stokehole of his ship might offer an explanation; therefore he conducted measurements on air flow through these compartments. HMS *Fox* was an *Astraea* class protected cruiser of 4,360 tons launched in 1893 and fitted with eight cylindrical boilers and triple expansion engines giving her 7,500 indicated horse power (ihp) with natural draught. Rees noted that the engine room was not fitted with any means of forced artificial ventilation, the air currents being natural or supplied un-forced through upper deck cowls. Rees could not detect an air current using an anemometer on the engine room plates adjacent to the engine starting position, although he suspected that a natural air circulation existed. These conditions led Rees to conclude that the absence of a free air circulation should have presented ideal conditions for the production of heat stroke in the engine room. However, after observing stokers on watch in the engine-room the surgeon noted that they 'avoided muscular exertion, other than carrying around an oil can'; therefore he judged the likelihood of heat cramps or heat exhaustion to be very much reduced.²⁷⁴

Then again, despite the relaxed image of the engine room presented by the surgeon above, life in the engine room of a ship fitted with triple expansion engines could be as trying as any stokehole. A contemporary visitor to the engine room of the *Irresistible* described the following scene:

the noise from the triple expansion engines was deafening, it was impossible to make a remark heard while telephones were useless. The deck plates were greasy with oil and water making it difficult to walk without slipping. Some gland was certain to be blowing which made the atmosphere murky with steam. One or more hoses would be playing on a bearing which threatened trouble while the officers would be seen with their coats buttoned up to their throats and perhaps in oil skins, black in the face and with their clothes wet with oil and water.²⁷⁵

²⁷⁴ O. Rees, 'Body Temperature and the Causation of Heat Stroke,' 110.

²⁷⁵ Robert, K Masie, *Dreadnought: Britain, Germany and the Coming of the Great War*, (London, Jonathan Cape, 1992), 475.

In order to measure body temperature and its effects on men working in heat, Surgeon Rees planned to enlist the participation of one watch of stokers so that he could plot their core temperatures over a period of time. Deciding on one particular watch in the stokehole, the surgeon asked each man to take his core body temperature every ten minutes throughout the four hour period of his watch using a rectal thermometer. However, from the comments the surgeon made in his final report, it can be assumed that the stokers refused to participate in the experiment with the surgeon noting, 'the help of the stokers in this work proved impossible.'²⁷⁶ Rees also observed, 'the stoker was not sufficiently educated to understand that a temperature of 100 degrees (F) and over, need be nothing abnormal.'²⁷⁷

From his experiments and observations, Rees concluded that the atmospheric conditions of the engine room by comparison with those to be found in the stokehole were completely the reverse. Whereas, stokers in the engine room carried out minimal manual labour in an atmosphere devoid of air circulation, stokers in the stokehole carried out 'severe muscular work' in air currents that may have been anything from 150 to 600 feet or more per minute. However, Rees noted that the intense manual labour conducted in the stokehole was of an 'intermittent nature.' This was because the actual throwing of coal onto the fires had to be done in 'quick time' so as to minimise the cooling effects of the air on the fire, thereby reducing the likelihood of a reduction in the production and pressure of steam. In a similar manner, the job of cleaning the fire had also to be done quickly. As a result, while they were carrying out these tasks, Rees noted that the stokers involved were always under the direct heat and glare of the furnace. However, in between these tasks the men were able to rest in air currents which varied up to 600 feet per minute while the air current rose with the harder the ship was being steamed.²⁷⁸

From data gained through a series of experiments, Surgeon Rees concluded that the critical wet-bulb temperature should vary in each ship

²⁷⁶ O. Rees, '*Body Temperature and the Causation of Heat Stroke*,' 110.

²⁷⁷ Ibid.

²⁷⁸ Ibid.

depending on local conditions such as the rate of steaming, position and variety of furnace together with the use of forced draught. Furthermore, the surgeon observed that as no stoker in the *Fox* succumbed to heat-stroke until the wet-bulb temperature reached an average of 87 degrees (F), he deduced that the critical temperature also varied for the individual with the 'seasoned' stoker having a higher critical wet-bulb point than the un-seasoned one.²⁷⁹

A similar conclusion was reached by the medical officer of the *Arrogant*, who recorded three cases of mild heat-exhaustion upon leaving Malta. Staff Surgeon Norris noted from their medical records, that the three men had previously served in a destroyer and he was therefore of the opinion that as they were experienced hands they should have been able to cope with the heat in the stokehole. However, as the *Arrogant* was a cruiser, the amount of coal that was required to be handled per hour was far greater than that of a destroyer, moreover, the length and weights of the slices used in the furnaces were also correspondingly larger and heavier. As a result Surgeon Norris was forced to accept that the additional labour required on watch in the *Arrogant* was the determining factor in the causation of heat exhaustion in the case of these three stokers. Having reached this conclusion Norris put forward the suggestion that 'physical exhaustion, coupled with heat, is more productive of ill-effect than a greater heat with less exhaustion.'²⁸⁰

Several ships serving on the China station, reported cases of heat-stroke during 1909 including the *Kent* whose medical return listed a S.P.O. who became unwell from the affects of heat stroke, while on passage between Colombo and Singapore. This man had been working in the stokehole where the highest temperature recorded was 130 degrees (F). On being taken to the sick bay, the man's rectal temperature recorded 108.6 degrees (F), unfortunately the S.P.O. could not be revived. In another case, while the same ship was on passage between Wei-hai-wei and Hong Kong, a stoker was taken to the sick bay unconscious after suffering from heat stroke with a temperature of 105 degrees (F). Despite having an internal body temperature above that

²⁷⁹ O. Rees, 'Body Temperature and the Causation of Heat Stroke,' 113.

²⁸⁰ 'Statistical Report of the Health of the Navy for 1909,' 92.

which is now considered to be critically life-threatening, the stoker recovered.²⁸¹ At the time, Staff Surgeon Rees believed that the human body could not withstand a temperature greater than 102.6 degrees (F), for any length of time, 'without serious injury.'²⁸² In order to alleviate the problems of heat exhaustion in the *Terrible*, the stokers were put into a four-watch system, which gave them longer time in between watches to recover (twelve hours off watch, as opposed to eight hours in a three-watch system). In addition, the stokers were also given an extra ration of lime juice and were accorded the rare privilege of being allowed to sleep on the upper deck, a privilege not normally granted to stokers.²⁸³

Another aspect which was thought to have contributed to heat stroke was that of 'over feeding.' Staff Surgeon Rees made this assumption in the *Fox* after witnessing stokers bringing up what he described as 'an enormous amount of partially digested food' through vomiting after being given rectal injections of saline solution during treatment for heat exhaustion. The surgeon particularly noted the fact that stokers usually went on watch after consuming a large meal and then attempted to take quantities of liquids on top of their partially digested food. He concluded that this process subjected their stomachs to severe strain, which in turn made them susceptible to heat related cramps and vomiting.²⁸⁴

Stokers' cramps

Henry Nancarrow, ex-policeman, part-time boxer and a one-time engine driver from Grampound in Cornwall was a stoker in the Royal Naval Volunteer Reserve. While undergoing his annual two week naval training in July 1914, Nancarrow was caught up in the naval mobilisation order forcing him to inform his family by postcard that he was 'off tomorrow-destination unknown.'²⁸⁵ On passage to St Helena in the *Albion*, Nancarrow wrote in his diary that the heat in the stokeholes was 'unbearable' causing a great many stokers to go sick.

²⁸¹ 'Statistical Report of the Health of the Navy for 1909,' 70.

²⁸² Ibid, 1908, 107.

²⁸³ Ibid, 1909, 92.

²⁸⁴ Ibid, 1908, 108.

²⁸⁵ Henry Nancarrow, Leading Stoker, 'Personal Recollections of Naval Service,' in *R.N.M.N. (REC) 121, Liddle Collection* (Leeds, University of Leeds, 1988).

However, because of the continuing doubt amongst ships' surgeons and engineers with regards to the effects of sudden changes to assisted or forced draughts, the Senior Engineer gave the order to stop all fans in the stokeholes until the surgeon could determine the cause of the sickness.

This action would have made matters very much worse, as with all the fans stopped the heat in the stokeholes would have continued to rise to unacceptable levels. As it transpired, the cause of the sickness could not be established and the ship's surgeon ordered the fans re-started with strict instructions that the stokehole temperature was not to exceed 100 degrees (F). Nancarrow lamented that the climate had been 'cruel for us stokers,' while he thought it a great pity that the stokers were not thought of a bit more by the public, 'for some comforts to protect them from the fires.'²⁸⁶ Nancarrow thought that stokers had the hardest and toughest time of many who served in the Navy during the hostilities.²⁸⁷ Unfortunately, Nancarrow never returned to Cornwall, he died after being bitten by a rabid dog while on shore leave and was buried in Salonika in late 1915.

The harsh conditions and danger experienced by stokers 'down-below' made a great impression on a midshipman appointed to the *Invincible* in December 1915. While under training, Alexander Scrimgeour was required to undertake a three month period understudying an engineer in the *Invincible's* stokehole and engine rooms. In his illegal wartime diary Scrimgeour recorded:

The engine and boiler rooms are hell, at sea; one cannot realise the life of the stokers and other 'saints who toil below' until one actually experiences it. These men's work can vie with any trenches and deserts not excluded; their whole life in war time is a vivid succession of discomforts and hardships, unparalleled in severity and monotony.²⁸⁸

Like Stoker Nancarrow, the young midshipman was another casualty of war going down with the *Invincible* during the Battle of Jutland in 1916.

²⁸⁶ Henry Nancarrow, Leading Stoker, 'Personal Recollections of Naval Service,' 1988.

²⁸⁷ Ibid.

²⁸⁸ Richard Hallam and Mark Beynon, *Scrimgeour's Small Scribbling Diary 1914-1916: The Truly Astonishing War Time Diary and Letters of an Edwardian Gentleman, Naval Officer, Boy and Son* (London, Conway, 2008). 229-30.

During a steam trial conducted between Hong Kong and Wai hei wei, forty members of the ship's company of the *Monmouth* were affected by heat. Fleet Surgeon Robinson reported that the majority were suffering from 'heat exhaustion' although he also diagnosed several cases of heat cramps, which he stated had a 'peculiar train of symptoms which he had never met before.' Robinson described one case where a 'big strong stoker' was taken to the sick bay with violent convulsions and delirium. His temperature in axilla (underarm) was 105 degrees (F), although the surgeon believed it was probably higher but due to the man's convulsions, the thermometer could not be kept in place long enough for a reliable reading.²⁸⁹

The usual treatment for this condition was to place the man in an ice pack, but again due to his convulsions this was not possible, therefore he was continually sponged down with iced water. After a quarter of an hour he became quieter with only occasional convulsions and cramps. However, his pulse was weak and uncountable and his respirations were very shallow. By the evening the man was fairly well recovered and his condition was recorded as hyperaxia, with convulsions and cramps and threatened cardiac failure.²⁹⁰

The subject of heat cramps was also of interest to Staff Surgeon Rees of the *Fox*. He acknowledged that previous investigation into heat stroke and cramps in the stokehold had identified the symptoms as being characterised by 'cramping of the voluntary muscles, often accompanied by excruciating and disabling pain.'²⁹¹ It was commonly believed that stokers brought cramps upon themselves through their habit of ingesting large quantities of cold water while on watch in the stokehole. Surgeon Rees thought the ailment was worthy of further investigation as it was not clear at the time whether the symptoms were caused through physical work under the direct effect of heat, or whether the condition was precipitated by sudden change to assisted or forced draughts.²⁹²

²⁸⁹ 'Statistical Report of the Health of the Navy for 1909,' 187.

²⁹⁰ Ibid.

²⁹¹ O. Rees, 'Papers on Stokers' Cramp,' in Statistical Report of the Health of the Navy 1909, ed. J. Porter, (London, 1909), pp. 184-7.

²⁹² Ibid, 184.

From his previous investigation into temperatures in machinery spaces, Rees suspected that a 'high wet bulb temperature' was primarily responsible for the condition known as 'stoker's cramp.' Rees had diagnosed two cases where he noticed a very marked symptom of spasm occurring amongst certain groups of muscles, which he categorised as being the flexors of the thumb and forefingers, the wrists and elbows and the flexors of the calf and abdominal muscles. These groups of muscles were the ones which stokers exercised most frequently, during the action of firing the boilers.²⁹³

A stoker of five years-experience who had suffered cramp was found to have an oral temperature of 106 degrees (F) which convinced the surgeon that the cramps were due to injury of the central nervous system which had been induced by a high wet-bulb temperature. However, as the condition of stokers' cramp had been previously attributed to the ingestion of large quantities of cold water, Surgeon Rees decided to undertake some experiments in order to determine whether the amount of fluid taken by stokers while at work in high wet bulb temperatures, had any correlation to the condition of 'stokers' cramp.'²⁹⁴ (See Appendix 2).

Rees concluded from his experiments that provided the work conducted was of the same character, there was very little difference in the amount of fluid taken by men in the stokehole and engine rooms. The surgeon measured the fluid intake of six men while firing in the stokehole. Their consumption was 76.8 ounces (2), 105 ounces (2) and 120 ounces (2) of fluids respectively. From this experiment the surgeon noted with interest that the two men who drank the most were stokers with over seven years-experience each, whereas it was commonly assumed that it was the young and inexperienced men who were most likely to suffer ill effects from drinking to excess. However, Rees offered a valid explanation for this assumption, when he observed that the most inexperienced stokers would always be detailed off to work in the hottest positions in the stokeholes or engine rooms, therefore they would be more

²⁹³ O. Rees, '*Papers on Stokers' Cramp*,' 185.

²⁹⁴ *Ibid.*

susceptible to feel the need to take more fluids than other men in their vicinity of work.²⁹⁵

The problems caused by men being unable to complete their watch through becoming overcome by heat exhaustion were taken seriously by stokers, not least because someone else would be required to 'go out of turn' to relieve them. Stoker Vincent observed in his memoirs that it was considered to be the 'height of bad form' for stokers to exhibit the effects of fatigue during their watch, which explained why stokers would continue working until they literally dropped. With regards to their determination, Vincent described how a stoker would curse his ship, the engineers, and the chief stoker, 'but he would never say that the work was too much for him.'²⁹⁶

Recalling a particularly difficult watch in the stokehole of the *Aspasia*, Vincent described how despite his best efforts, he could not get the coal to burn properly. Having removed the draught plates entirely in a bid to get more air circulating around the fire, Vincent was forced to spend the entire watch using the slice and rake on the fire which he found, 'dreadfully fatiguing.'²⁹⁷ It didn't help that Vincent was working in number one stokehole, which he described as the hottest of all the stokeholes, as the ventilation cowls on the upper deck which were supposed to feed air down below were blanketed by the fore-bridge and 'monkey's island', and as a consequence, the stokehole was devoid of any fresh air.

On being relieved, Vincent went to the stoker's wash place and finding it empty he laid down on the tiled surface of the wash room deck, which he found 'delightfully cool.' However, he later realised that this was a foolish thing to do as one of his mess-mates observed him and thinking he had collapsed from over exertion, reported him to the chief stoker of the watch. The chief stoker immediately went to see Vincent and proceeded to examine him, although

²⁹⁶ H, Vincent, *A Stoker's Log*, 85.

²⁹⁷ *Ibid.*

Vincent was able to convince him that he was not fatigued, but simply attempting to cool down.²⁹⁸

Overdriving

In a twist to the lengths that stokers would resort to in order to show that they could cope with the demands made on them while on watch, Vincent described how stokers would often 'overdrive themselves' if they felt the effects of fatigue. Arguing that it was 'a hard job at the best of times to keep the required steam pressure up', Vincent recalled that not only would the men accomplish this but, out of 'sheer cussedness', they would deliberately overdo it. As an example, Vincent related one occasion when he was on the upper-deck taking in some fresh air when he was hailed by the chief engineer, who ordered him to go below immediately to inform the chief stoker of the watch that he was blowing off steam from the funnels. Vincent attributed the anger displayed by the chief engineer to the 'waste of coal and precious water' venting through the funnels. Despite having attracted the attention of the 'Chief', Vincent noticed the expression of 'dour satisfaction, on the heated and grimy faces' of the stokers as they came up from their watch below, suggesting to Vincent they had 'over-driven' themselves in an effort to make the point that they could handle, 'anything thrown at them.'²⁹⁹

In a series of related incidents, the medical officer of the *Charybdis* on passage through the Red Sea in 1910, reported that he had received an unusual number of casualties from the stokehole, with stokers suffering from extreme high temperatures and loss of consciousness. Staff surgeon Woolcombe observed that as all of the cases occurred at the end of each watch, it seemed probable to him that the final straw in the causation was, 'the extra attention given by the out-going watch to the cleaning of fires, for the incoming watch to take over.'³⁰⁰

²⁹⁸ H, Vincent, *A Stoker's Log*, 85.

²⁹⁹ *Ibid*, , 86.

³⁰⁰ 'Statistical Report of the Health of the Navy for 1910.' 97.

This was a reasonable conclusion for a medical officer to make, particularly one who may not have had a detailed working knowledge of the nature of stokers or their working practices. In point of fact, at the changing of each watch one fire would be allowed to burn down ready for the relieving watch to clean as soon as it took over. Steaming regulations stipulated that all fires to be cleaned were to be finished in the first three hours of the watch leaving the last hour for ejecting ashes and cleaning up generally.³⁰¹ As an example, if a ship was steaming with twelve boilers it would mean that eleven fires had to be cleaned in three hours, or one every fifteen minutes with one fire left ready for the incoming watch to clean.

This was also the practice in the merchant fleet. Fireman (stoker) Albert Khan described a typical watch handover in the merchant service:

When you relieve the watch you're on what they call a 'burn down.' You've got two fires already banked up for you and another on a 'burn down', that means it's ready to be cleaned. The first thing you do is clean your fire. When you clean your fire you get your clinkers out. You've got a long bar and you're pricking between the bars in the fire and then you rake it all out. You put the clinker in a pile on one side and the good stuff in a pile on the other. Then you fill up the fire with some good stuff, some of it perhaps from another fire as well and then fill it up with good hot stuff. When you go off watch you leave things in the same way for the fellow coming down.³⁰²

Therefore, Woolcombe's observations as to the cause of collapse amongst stokers could not be attributable to cleaning fires at the end of the watch. On the other hand, it could be argued that no self-respecting stoker would hand over a poor fire to his relief, no matter how tired he was at the end of his watch. For that reason, rather than being the 'final straw', as described by the surgeon, it is more likely that in the heat of the Red Sea, the stokers may well have been forced to 'overdrive' themselves throughout the whole of their watch, rather than succumb to heat induced fatigue with the consequent loss of face to their mess-mates. The fact that they waited until the end of the watch before succumbing to fatigue and collapse, appears to suggest that they only did so once they were satisfied that they had, 'done their duty.'

³⁰¹ *The Stokers Manual*, (London, Admiralty, 1927), 136.

³⁰² Alston Kennerley, *Stoking the Boilers: Firemen and Trimmers in British Merchant Ships, 1850-1950*, (Plymouth: University of Plymouth, 1996), 12.

Dehydration and water intake

The effects of heat on the body were graphically illustrated by the measurements Staff Surgeon Rees undertook of his own physiology while conducting his observations on the *Fox's* stokers. Rees spent two hours in a sitting position doing no work, other than observing the men at work and one further hour visiting various locations in the stokeholes and engine rooms, where he had set up his wet and dry bulb thermometers. The surgeon calculated that he lost one pound in weight or two pints of water while doing 'practically no work.' From this observation he concluded that it would not be abnormal for a hard working stoker to lose between twenty to thirty ounces of sweat per hour. From his measurements (See Appendix 2) Surgeon Rees determined that stokers did not appear to take more fluids than they actually required, although he declared that he was still unsure as to whether the consumption of this minimal amount would produce symptoms of distress.³⁰³

The *Minotaur*, serving on the China Station reported twenty cases of gastritis amongst the stokers which the ship's surgeon put down to a chill following overheating. In this instance, Fleet Surgeon Handyside concluded that the stokers had brought the condition upon themselves because they 'persisted in drinking water to excess whilst being overheated in the course of their strenuous work.'³⁰⁴ Handyside offered the opinion that drinking water to excess under such conditions would not actually allay thirst, but would instead have the undesired effect of water-logging the mucous membrane of the stomach. Thereafter, the body being unable to rid itself of this excess water would succumb to congestion, which would in turn lead to inflammation resulting in a general collapse.

The Imperial Japanese Navy claimed to have prevented this problem by restricting the water intake of their stokers while on watch. The experience gained in action during the Russo-Japanese War of 1904-05 allowed the Surgeon General of the I.J.N. to observe:

³⁰³ O. Rees, '*Papers on Stoker's Cramp*,' 186.

³⁰⁴ '*Statistical Report of the Health of the Navy for 1910*,' 70.

None of the men in the engine room were affected by heat-stroke in spite of the heat in that part of the ship. Our stokers were instructed to drink as little as possible. Their usual beverage was cool distilled water, but sometimes, as a treat, they were allowed water mixed with arrowroot and sugar.³⁰⁵

By contrast, the French Navy from as early as 1875 had recognised that stokers required extra nourishment in order to be able to maintain the high energy levels required in stoking. To this end, French stokers received an extra allowance of wine and farinaceous foods such as wheat-flour, rice, sago and tapioca while they stood their watch.³⁰⁶ By digesting these starch-based foods during a watch the stokers would have naturally converted the starch into sugar which would have boosted or maintained their energy levels. However, because alcohol is a diuretic it actually promotes dehydration by increasing the excretion of water from the body, and also interferes with the body's ability to regulate its own temperature. Therefore, the extra allowance of wine, unless taken in minimal quantities, would have had a detrimental effect on the ability to prevent dehydration, resulting in the increased likelihood of heat exhaustion or 'stokers'-cramp.'

In order to prevent a recurrence of gastritis in the *Minotaur*, Fleet Surgeon Handyside recommended that all stokers should adopt the old stoker's practice of keeping a piece of coal in the mouth while in the stokehole, a practice which he claimed 'used to be prevalent in the service.' The surgeon argued that keeping a piece of coal in the mouth would help to maintain a gentle flow of saliva; therefore he considered that there would be no need for stokers to continually drink water.³⁰⁷

The advice given by Fleet Surgeon Handyside to *Minotaur's* stokers in 1910 was corroborated by Stoker Vincent in 1915, while serving in the coal burning protected cruiser *Aspasia*. In 1915 the *Aspasia* was operating off the west coast of Africa and the heat in the stokehole caused Vincent to sweat 'tremendously.' He recalled, that while resting for two to three minutes in between stoking his boiler, his sweat would 'pool on the deck plates of the

³⁰⁵ S. Surgeon-General Suzuki, Imperial Japanese Navy, 'Notes on Experiences During the Russo-Japanese Naval War 1904-5,' *British Medical Journal* 2, no. 2339 (1905). 6.

³⁰⁶ H De Mericourt, 'Modern Naval Hygiene,' *The British Medical Journal* 2, no. 777 (1875).

³⁰⁷ 'Statistical Report of the Health of the Navy for 1910,' 70.

stokehole.³⁰⁸ This hot work gave Vincent a 'tremendous thirst' which forced him to continually drink from the water can throughout his watches. Vincent's actions did not go unnoticed by his contemporaries and he remembered that he was continually rebuked for drinking too much water, being told by stokers 'old and young' and by all the chief stokers of his watch, to place a piece of coal in his mouth instead.³⁰⁹ Despite going against the practices of his contemporaries and the medical advice of the day Vincent declared that he never suffered from any of the ill-effects attributed from drinking too much water.³¹⁰

Then again, unbeknown to Stoker Vincent, he may have unwittingly prevented the onset of 'stokers' cramp' by simply replacing his fluid loss through sweating, by drinking frequently while on watch in the stokehole. As Staff Surgeon Oswald Rees of the *Fox* observed, stokers' cramp was not at the time fully understood. While the medical knowledge of the day had not yet made the connection, we now know that there is a direct link between fluid loss through sweating and the cramping of groups of voluntary muscles attributed at the time to stokers' cramp.

Following on from the ground breaking work of Staff Surgeon Rees, naval medical opinion would later support the actions of Stoker Vincent and recommend that stokers' replace their lost fluids by drinking sufficient water to keep them hydrated, while supplementing their lost sodium and chloride levels through the ingestion of salt tablets.

Like other men, stokers were also susceptible to accidents and disease. Stokers also formed landing parties or were attached to Naval Brigades where they suffered injuries or death in action and were also exposed to disease which they might not have contracted onboard ship. In one example, the *Forte* landed a mixed party of men including twenty-eight stokers on the Gold Coast, to take part in an operation to intercept the West African Regiment which had mutinied. Out of the twenty-eight stokers, twenty men came down with Malaria. Surgeon Mathew Vaudin, of the aptly named river gunboat *Mosquito*, described his

³⁰⁸ H. Vincent, *A Stokers' Log*, 51.

³⁰⁹ *Ibid.*

³¹⁰ *Ibid.*

preferred treatment for Malarial fevers which included rectal injections of warm salt solution with the addition of a 'little gin in order to maintain the skins moisture.' With regards to diet, the surgeon recommended it should be restricted to such liquids as well-diluted milk, good champagne or genuine brandy, together with chicken broth or light farinaceous foods.³¹¹

Diseases of the chest

A common disease of the coal-firing era and one which particularly affected men from the engine room department was pneumonia. Pneumonia is caused through an infection which inflames the alveoli (lung air-sacs) which fill up with fluid or pus, causing symptoms such as a cough with phlegm, fever, chills, and trouble with breathing. The *King Alfred* reported five cases while on the China station in 1909, one of these was an E.R.A. whose condition proved fatal while three leading stokers and a stoker became seriously ill. Fleet Surgeon Beadnell highlighted the significance of the fact that the four engine room ratings all fell ill between July 20th and August 13,th a period which he observed 'practically corresponded to the hottest time of the year for Wei-hai-wei.'³¹² In the case of the E.R.A. the medical opinion was that there had been a suspicion of tubercle being the underlying cause, although the connection between heat and pneumonia was not established.

Pneumonia and its symptoms can vary from mild to severe. Many factors affect how serious pneumonia is, such as the type of germ causing the infection and the age and overall health of the patient with the very young and elderly being at most risk. The five men from the *King Alfred* can be assumed to have been in relatively good health. However, one of the more serious complications with pneumonia can arise when the disease is contracted by someone who is also suffering from chronic obstructive pulmonary disease C.O.P.D., also called emphysema or chronic bronchitis. The main cause for C.O.P.D. is smoking,

³¹¹ Surgeon Mathew L M Vaudin, HMS *Mosquito* in 'Statistical Report of the Health of the Navy for the Year 1901,' 42.

³¹² 'Statistical Report of the Health of the Navy for the Year 1909.' 64.

however long term exposure to lung irritants such as air pollution, chemical fumes or dust can also contribute to the condition.³¹³

With stokehole and coal-bunker atmospheres heavy with coal dust, asbestos and other dangerous air-borne irritants, stokers were in constant danger of exposure to pulmonary disease which could affect their health while in service, but could also manifest itself in occupational disease later on, long after they had retired from the Navy. The *Canopus* recorded an incident where a stoker attracted bronchitis after using compressed air to clean boiler tubes. The medical officer suggested the case arose because the stoker failed to wear the mask which was normally worn during boiler cleaning operations and had suffered from the 'irritant actions of the lime in the deposit in the boiler tubes.'³¹⁴

Unusually, when it came to the contagious bacterial lung disease tuberculosis (TB), stokers appeared to be less affected than seamen and other officers and ratings. Prior to 1906 TB was only reported by numbers of men afflicted, however from that year on the medical returns were broken down to identify the classes of men diagnosed with the various types of the disease. The medical returns show that from 1906 to 1914 a higher percentage of seamen than stokers were diagnosed from all types of TB in each year. For the years that identified classes of officers (1906 to 1909) the returns also showed that more seamen officers than engineers were diagnosed with the disease. The following table (Table: 2 below) indicates the actual numbers of men diagnosed with TB extrapolated from the various annual medical returns,

³¹³ *What Is C.O.P.D.* (US Department of Health and Human Services, 2011 [cited 28 October 2011]); cited in <http://www.nlm.nih.gov/health/health-topics/topics/copd/>.

³¹⁴ 'Statistical Report of the Health of the Navy for the Year 1909,' 53.'

Table 11: Incidence of Tuberculosis 1906-1914³¹⁵

Year	Stokers	Seamen & boys	Executive Officers	Engineer Officers
1906	94	112	4	3
1907	92	124	6	0
1908	96	126	7	0
1909	88	118	5	2
1910	72	98		
1911	89	107		
1912	87	112		
1913	82	91		
1914	103	121		

The common causes of the spread of TB included frequent contact with those who had already contracted the disease, poor nutrition, and crowded or unsanitary living conditions. As will be presented in the following chapter, life on the average mess-deck during this period perfectly suited the spread of TB with poor diet and crowded and unsanitary living conditions endemic throughout the service. In 1927 Surgeon Captain Alderson suggested that 'infection with aggregation in a small space plays a large part in the causation of TB in the Navy.'³¹⁶ Making comparisons between living space in the Army and the Navy, Alderson stated that the Army required a standard six hundred cubic feet air space with sixty square feet floor space and six feet wall space for each man in barracks. While Alderson thought this was impossible to implement in ships, he had to admit that even naval barracks could not meet the Army standard.³¹⁷

Furthermore, Alderson suggested that the incidence of TB was higher in 'modern' battleships than other ships, due to their close living and working conditions together with a general lack of sunlight and poor ventilation between

³¹⁵ 'Statistical Report of the Health of the Navy,' 1906-1914.

³¹⁶ Surgeon Captain P.F. Alderson, 'The Incidence of Tuberculosis in the Royal Navy,' *Journal of the Royal Naval Medical Service* XIII (1927), 27.

³¹⁷ *Ibid*, 28.

decks. These conditions were stated to have particularly affected sick berth ratings, victualling ratings, cooks and telegraphists; men who normally spent all of their time between decks. However, Alderson could not fail to note that engine-room ratings had a lower incidence of TB than seamen, despite the fact that they probably spent more time below decks in poor conditions than any other rating. Alderson explained this anomaly, by suggesting that engine-room ratings did not work in as close proximity to each other as other men while the 'cleaner air' in the machinery spaces, was continually replaced by powerful exhaust fans.³¹⁸ While Anderson used the term 'exhaust fans' he probably meant 'supply' fans as most stokeholes were supplied with a positive pressure of air from steam or electrically operated fans in order to provide a draught for the fires. Because this pressurised the stokehole, access and egress could only be made through use of a two-door air-lock.

Lionel Yexley instigated a very animated and widespread newspaper and letter campaign over the use of 'deck cloths' which were used to protect the decks and paintwork during the weekly 'water carnival' routine which is explained in more detail in the following chapter. Yexley's campaign called for the abolition of deck cloths on the grounds that they seriously affected the health of men on the lower-deck. Once a deck had been scrubbed or polished or paintwork cleaned down and brass-work burnished in preparation for the weekly inspection by the captain known as 'Captain's rounds,' canvas cloths would be placed over every surface to protect it from foot-traffic or from dirty hands. However, Yexley argued that this practice had developed over the years to the point where deck cloths remained in-situ between decks week in and week out just to keep paintwork clean for the next inspection. The cloths would only be taken up and stowed away out of sight a few minutes before the captain commenced his inspection at nine o'clock on Sunday morning and re-laid directly afterwards.³¹⁹ Furthermore, Yexley argued that while the deck under the canvas cloths may have been clean, the canvas itself was always filthy thereby creating a perfect breeding ground for the *bacillus tuberculosis*.³²⁰

³¹⁸ Surgeon Captain P.F. Alderson, 'The Incidence of Tuberculosis in the Royal Navy, 31.

³¹⁹ Lionel Yexley, 'Sunday in the Navy,' *The Fleet*, October 1911, 252.

³²⁰ *Ibid.*

Part of Yexley's concern over the widespread use of deck cloths was for the health of young stokers. He described how they would 'fling themselves down' on the damp canvas to rest after their exhausting watch below thereby exposing themselves to unknown diseases.³²¹ Yexley used his challenge on deck-cloths in 1911 to link the practice with deaths in service from TB, which he argued was responsible for an average loss to the service of 340 men each year with an average of thirty-seven deaths. While highlighting the tragic loss of deaths through disease, Yexley's main concern was for the residue of men who were invalided out of service.³²² Annual fleet medical returns showed that Yexley's figures were broadly correct with 286 cases of TB declared in 1911. This resulted in 237 men being invalided from the service and thirty-eight deaths. However, while certain ships had more cases than others, many ships reported no cases of tuberculosis. Moreover, the fleet medical returns did not provide any medical evidence to link any of the cases of tuberculosis to the practice of laying deck cloths throughout a ship.

The deck-cloth debate begun by Yexley continued unabated throughout 1911. One commentator suggested that Yexley's description of the unhygienic situation with regard to the extensive use of deck-cloths was very fair, 'but was by no means an exhaustive statement.'³²³ The living conditions on the newer ships were described as 'notorious' and much more uncomfortable and unsanitary than older ships. As an example, the correspondent suggested the contemporary King Edward and Dreadnought classes of ships were merely 'steel boxes' and prone to excessive moisture in the atmosphere, which caused the ship's sides and decks to run with moisture within two hours of putting to sea. As a result, deck-cloths became 'slimy' from the debris of the mess-decks and the moisture in the air which caused the general atmosphere in the ship to become 'sickening.'³²⁴ Badly designed ventilation was given as the chief cause together with the tradition which allowed individuals responsible for certain

³²¹ Lionel Yexley, 'Sunday in the Navy: The Fetish of Inspections and Its Results,' *The Naval and Military Record and Royal Dockyard Gazette*, September 1911, 588.

³²² *Ibid.*

³²³ CPO, 'Deck Cloths,' *The Naval and Military Record and Royal Dockyard Gazette*, 27 September 1911. 620.

³²⁴ CPO, 'Deck Cloths.'

compartments and flats (passageways) to close hatches or restrict access on their own authority, in order to keep them 'ready for Captain's rounds.'

This chapter has outlined the appalling conditions that stokers were expected to work in and the injuries, illnesses, accidents and deaths they suffered as a result. While it may have been uncomfortable keeping watches on the exposed upper-deck in winter, most seamen would not have swapped the fresh air for the dust infected atmosphere, heat, noise and physical labour of the stokehole; even for a stoker's wages. In an age long before the effects of coal-dust and asbestos were linked to diseases of the chest stokers were expected to suffer the daily rigours of hard physical work conducted under conditions which on a good day could result in burns, injuries or collapse and on a bad day life threatening conditions which often resulted in serious injury, death or debilitating conditions such as asbestosis or pneumoconiosis. Boiler explosions, steam leaks, asphyxiation in coal bunkers and bunker explosions were an ever present threat to a stoker's work. Moreover, because the machinery was situated in the lowest part of the ship stokers were shut inside their compartments when the ship was in action, therefore they worked in the knowledge that if their own machinery did not claim them, the enemy probably would.

One of the most common medical issues that stokers faced in the stokehole was the condition known as 'stoker's cramp.' This unusual ailment became a critical problem in stokeholes and coal bunkers particularly when steaming in areas of high ambient heat such as the notorious Red Sea. With temperatures typically exceeding 100 degrees (F) stokers often collapsed, some terminally, causing disruption to the steaming efficiency of the ship. This in turn led to 'outsiders' drafted in from the ship's company to help bolster the stokers below. In ships that carried them, Royal Marines were always volunteers and the first choice for this task, adding value to the notion that marines were the only other branch of the lower-deck to bond with stokers. However, it is apparent that while stokers were regularly debilitated from cramps, the causes of the condition were mostly speculation and the Admiralty conducted no official medical investigation despite the obvious detrimental

effect to steaming efficiency that occurred when large numbers of stokers were afflicted. It was only through the efforts of a small number of ships' surgeons most notably Staff Surgeon Oswald Rees, who conducted their own experiments that the effects of heat on the body began to be slowly understood.

We now know that the condition termed stoker's cramp was caused through excessive sweating leading to dehydration and loss of vital sodium and salts from the body leaving the motor muscle groups in spasm. Remarkably, at the time the common consensus amongst most naval medical surgeons was that the cramps were brought on by the men themselves through drinking water to excess while on watch. Had the men seen to their own needs, like stoker Henry Vincent who kept himself regularly hydrated while stoking against the advice of his surgeon and not minimised their water consumption, the effects of stokers cramp would have been far less widespread or as serious as it became.

Despite the effects of heat and the other debilitating conditions stokers endured while on watch, they were in the main a hardy and stubborn body of men who did not give in easily. During the coal-firing era when a ship's speed and endurance was determined solely by the skill and physical effort of the stokers on watch, their job was vital, if not more so than any other onboard. When faced with high rates of steaming in excessive heat stokers would rise to the challenge by 'overdriving' themselves. In effect they would find another gear and somehow gather together sufficient extra energy to complete their watch and while some eventually succumbed to the combined forces of heat and labour, most endured. As stoker Henry Vincent remembered, a dour smile on a grimy face was a sure sign that a stoker had risen to the challenge, and had come through.

Chapter Four

'Off watch'- mess deck affairs

During the nineteenth century many advances were made in the use of new materials and technology that transformed naval materiele in general. D.K . Brown in *Warrior to Dreadnought* argued that while the nineteenth century Navy has often been accused of being reactionary to new advances, it was usually the leader and even when it was not, there were usually good reasons and it was never far behind.³²⁵ This view is echoed by J. R. Hill in *Accelerator and Brake* who observed that even though some of the important innovations in naval technology and materiele were introduced by foreigners, the power of British industry allowed the Navy to maintain its dominant position, even when it came from behind.³²⁶

When the *Dreadnought* was commissioned in 1906 it was a ship so advanced compared to every other ship built to that date that it revolutionised naval construction and the term 'Dreadnought' became universally adopted to describe all ships subsequently built to the same overall design. Despite the many challenges to the superiority of the Royal Navy at the beginning of the twentieth century, *Dreadnought* was a clear indication that the Admiralty had adopted the technical changes it required in order to maintain its dominant position. However, while embracing advances in technology the Admiralty appeared to have ignored the corresponding advances in social change ashore so that by the introduction of *Dreadnought* while the ships were very much of the twentieth century era, the men lived under a social regime that belonged to a previous century.

This chapter will address the main social issues that caused discontent amongst the lower-deck during the nineteenth and early twentieth century's particularly with regards to uniform, victualling, barracks and shipboard living

³²⁵ D. K. Brown, *Warrior to Dreadnought: Warship Development 1860-1905*, (London, Chatham Publishing, 1997), 204.

³²⁶ J. R. Hill, *Accelerator and Brake*, *Journal for Maritime Research*, 1999, 16.

conditions which led to the subsequent rise of the lower-deck movement for change.

Prior to 1912 lower-deck pay at 1s 8d per day had remained unchanged for over fifty years and would not be increased until some six years after the commissioning of *Dreadnought*. Out of this paltry sum British sailors were forced to compulsorily purchase and maintain their own uniform and to subsidise their basic rations if they were to remain healthy and well-fed. Like pay, the standard daily ration issued to each man had remained unchanged for a century and comprised the same basic salted and dried articles that had been issued throughout the nineteenth century. Moreover, two years prior to the laying of *Dreadnought's* keel in 1905, sailors at that port and those at Chatham were still living in rotting and unhygienic wooden hulks because the Admiralty had dragged its heels over the construction of new naval barracks.

Naval barracks

Stoker James Leary joined the Royal Navy at Keyham barracks Devonport in September 1913. Keyham barracks was the Navy's first purpose built barracks and was designed to replace the unhealthy wooden hulks which remained as shore accommodation for sailors right up to 1903 when the last two naval barracks at Chatham and Portsmouth were finally completed.³²⁷ By 1859 prison hulks had all been abolished in favour of purpose built prisons, yet the Navy insisted on retaining hulks for a further forty-three years on the grounds that discipline would be maintained if the men were kept in the same poor conditions while on shore as they were at sea.³²⁸ With regards to the suitability of the hulks for accommodation purposes a Commissioners' report into Naval Manning noted in 1859:

The witnesses complain of the condition of the hulks, in which the men are lodged, while their ships are fitted out. They state that the hulks are so uncomfortable, that both officers and men have the greatest dislike to them; all desire to escape from them, as soon as the day's work is over, preferring a

³²⁷ Charles Noel, 'The Third Report of the Commissioners for Revising and Digesting the Civil Affairs of His Majesty's Navy,' in House of Commons Papers; Reports of Commissioners (London, Admiralty, 1806).

³²⁸ Home Office, *Prisons over Two Centuries* (Home Office, 1982 [cited 20 May 2012]); cited in <http://www.nationalarchives.gov.uk/erecords/ho/421/2/prisons/prishist.htm>.

residence on shore, to the great detriment of the infant discipline of the newly raised crew.³²⁹

The first two accommodation blocks in Keyham barracks were completed by 1886, however, due to wrangling at the highest levels of the Admiralty the first 500 hundred men from the hulk *Royal Adelaide* did not actually move ashore to occupy the new accommodation until 4th June 1889.³³⁰ The reason for this delay which unnecessarily forced men to endure a further three uncomfortable and unhygienic years living aboard hulks can be explained through the sentiments of the First Sea Lord Sir Anthony Hoskins who on inspecting the new barracks in 1892 declared them to be 'a wicked waste of public money.'³³¹ Hoskins may have shared the view expressed in the 1859 Commissioners report that the only way to maintain discipline in the Navy was to keep men in squalor. This could also explain why the new barracks appeared to have been deliberately designed to replicate as far as possible conditions that existed in the hulks and ships of the fleet being devoid of any comfort, privacy or 'modern' amenities. While a step in the right direction, the design of the naval barracks together with the sentiments of the F.S.L. suggest a late nineteenth century Admiralty intent on maintaining eighteenth century living standards for the lower-deck.

Stoker James Leary remembered that the lower-deck accommodation blocks were three storied and laid out in a square with a large canteen occupying the centre space. The first floor and upper floor of each accommodation block acted as the men's living quarters, while the basement contained the bathrooms and wash room which was equipped with wooden washing tubs, hand operated clothes' mangles and a large coal-fired drying room manned by stokers.³³²

³²⁹ Yorke, 'Report of the Commissioners Appointed to Inquire into the Best Means of Manning the Navy,' ed. Admiralty, 1859, 8.

³³⁰ Anon, *The History of H.M.S. Drake* (Plymouth, Privately published by the Wardroom Mess, 1973).

³³¹ Ibid.

³³² J. Leary, *I.W.M. 553/185* 5.

Each barrack room could accommodate approximately 400 men who lived in self-contained messes of twenty to twenty-four men to a mess. The room was divided by a central kit bag and hammock stowage rack which ran the full length of the room dividing it into two halves so that approximately 200 men could live either side of the partition.³³³ (See illustration 7 p. 131). As was the custom in the Royal Navy, there were no attempts to provide privacy for the men, the barrack rooms were 'open plan' with no partitions between the individual messes while the bare wooden floors were caulked in the same manner as decks on a ship. Each mess consisted of a mess table approximately twelve feet long by two feet six inches wide with two wooden benches, one each side.³³⁴ Apart from a small number of coal or coke fired stoves in the centre of the large barrack rooms, no other heating was provided and while night toilets were sited at each end of the blocks, the bathrooms, toilets and urinals were located in the basement accessible by an outside steel staircase.³³⁵

The mess tables were arranged on each outer wall of the barrack room and could be lashed back to the wall during the silent hours to make room for men to sling their hammocks. The men's hammocks were slung from hooks attached to steel girders which ran the full length of the barrack room in two double rows, not grouted into the walls as suggested by Hampshire.³³⁶

³³³ 'The Royal Naval Barracks Devonport', *The Navy & Army Illustrated*, 6 August 1897, 166-69.

³³⁴ J. Leary, *I.W.M.* 553/185, 5

³³⁵ *Ibid.*

³³⁶ A Cecil Hampshire, *Just an Old Navy Custom* (London, William Kimber, 1979). 70, Hampshire stated, 'hammock hooks were grouted into the walls of the men's living blocks.'

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A BARRACK ROOM, ROYAL NAVAL BARRACKS, CHATHAM,

PHOTO
GALE & POLDEN LTD.

Illustration: 7 A typical barrack room Chatham Barracks.

Source: © Medway Archives-Couchman Collection.

Note the hammock hooks in the central girder with the 'lashing bar' opposite, one man has already slung his hammock a second row would be slung directly in front of him. The kit bag and hammock racks are behind the standing ratings hiding a similar arrangement on the opposite side of the room. The mess 'traps' or utensils are displayed at the end of the table with the washing-up tub underneath. Each side of the room could accommodate approximately 200 men in eight messes containing twenty-four men. The layout of each mess and the space allocated each man was exactly the same as that found aboard every ship in the Navy. Note also the complete absence of chairs or other 'normal' furniture. These messdecks existed into the 1960s the only alterations being the removal of the mess table and hammocks which were replaced by two or three tiered bunks and a small steel locker for each man.

Each mess was allocated a shelf where the mess cooking and eating utensils were stowed unless they were required to be displayed for inspection when they would be put out on the mess table as in illustration 7. The men had no privacy and nowhere to keep their valuables other than in their kit bag and 'ditty box', which was a small twelve by nine by five inch lockable wooden box. Stoker Leary used to keep his letters and writing material in his ditty box but would never keep anything valuable in it as he recalled that if you didn't keep your hands on your own personal things, then 'somebody would help you.'³³⁷

In contrast to the spartan accommodation and facilities provided by the Navy for the lower-deck at Keyham barracks, the barracks constructed for the Army at Windsor were designed and equipped to provide every amenity and comfort for the private soldier. The Coldstream Guardsmen who moved into Victoria barracks slept in individual cubicles with a cot, lockable steel wardrobe, window and coat hanging hooks. Lavatories for night service were provided on each floor while the main bathrooms contained shaving cubicles and a range of wash basins, showers and baths. All areas of the barracks were heated with steam radiators and equipped with electric light. In addition, the men's cubicle doors were hung with a space at the bottom so that the orderly officer could make his evening inspection by passing down the centre passage without disturbing the men, thereby giving them a degree of privacy unheard of in the Navy.³³⁸

On joining *Victory* barracks at Portsmouth, Stoker Frank Rose was met at the main gate by a chief petty officer and taken directly to a basement bathroom which had a bare concrete floor and was equipped with a number of tin baths in small alcoves. Rose remembered looking around in vain for 'sponges and towels, the usual articles that go with a bathroom.'³³⁹ After a quick bath in tepid water he was 'blue...., standing in bare feet on this concrete floor, no boards or nothing you know, really tough, and I realised then I'd joined

³³⁷ J. Leary, *I.W.M.* 553/18, 5.

³³⁸ 'Model Barracks,' *The Naval and Military Record and Royal Dockyard Gazette*, 25 January 1911.

³³⁹ R. F. Rose, *I.W.M.* 754, 16.

the Navy.³⁴⁰ After his first experience of naval life, Rose would have probably disagreed with the following excerpt from a 1907 Royal Navy recruiting pamphlet which stated:

Excellent provision is made for the comfort and convenience of men on Home Service at the Royal Naval barracks at the Home Ports.³⁴¹

James Dunn came from London's East End, only son of a 'drunken' greengrocer whose drinking habits ensured that the family existed on the edge of poverty. By the age of eighteen, Dunn was earning eighteen shillings a week casting fire-bars for furnaces in a foundry which was provident work, as being reduced to short time working he decided to join the Navy as a stoker. However, on arriving at *Vivid* (ex-Keyham barracks) at Devonport for training he remembered that he had 'wanted to go home the first night.'³⁴² Dunn thought the East End was rough, but 'not as rough as life in *Vivid*.' He described the petty fights that broke out between the large groups of men who came from all over the British Isles and the daily jostling for food, disputes over gambling and men coming back off shore drunk and belligerent. One aspect of the poor living conditions at *Vivid* that Dunn particularly remembered were the constant epidemics that raged through the large, open barrack rooms where all the men had to sleep and live together. He recalled that if one man came off shore with influenza within a matter of a few days 'everyone in the barracks would go down with it.'³⁴³

James 'Spike' Maloney was born in 1892 and came from Shoeburyness from a 'very poor family.' Upon leaving school at thirteen years of age, Maloney obtained work making bricks at a local brick works for just a few pence a day. After a series of short term poorly paid posts, he finally found full-time work as a 'live-in' hand at the Salvation Army, Naval and Military Home at Chatham at ten shillings a week all found. Working in the home Maloney had first-hand experience of the lifestyle of sailors as his duties included emptying 'chambers', cleaning the wash basins and lavatories and generally keeping the place clean.

³⁴⁰ R. F. Rose, *I.W.M.* 754, 17.

³⁴¹ 'Advantages of Service in the Royal Navy,' 1907, 9.

³⁴² J, Dunn, *I.W.M.* 769 (London, Imperial War Museum Sound Archive, 1975), Reel 2.

³⁴³ *Ibid.*

Maloney particularly remembered his impressions of the stokers who frequented the home as they always looked as though they were only 'half clean' when they booked in for a room for the night. He was later to learn from personal experience that this was a consequence of the poor washing and bathing facilities to be found on warships, rather than on any lack of personal hygiene by the stokers themselves.³⁴⁴

After encountering a recruiting officer in Chatham High Street one afternoon in 1911, Maloney decided to join the Navy as a stoker.³⁴⁵ After he had 'signed on' and completed the necessary paperwork Maloney was issued with his bedding and uniform kit. However, unlike men joining the Royal Marines and Army who were issued with free bedding, uniform and kit on entry, sailors were obliged to purchase their bedding and kit; a tradition introduced with the 'official uniform' in 1857.³⁴⁶

Naval uniform

Lionel Yexley, put his thoughts on the naval kit issue on record by stating:

The British Navy is the only uniformed fighting service of any civilized state that has the very doubtful honour of paying for its own uniform.³⁴⁷

By the beginning of the twentieth century men of the lower-deck were still expected to purchase their bedding and kit on entry although the Admiralty had introduced a gratuity to off-set the cost of the kit to each man. However, unlike seamen who received a full clothing gratuity, the gratuity for stokers was set at three pounds ten shillings, which only paid for half an initial kit leaving the remaining articles of a stoker's kit to be purchased out of his pay by weekly debit. This anomaly caused friction among stokers despite the fact they received a higher daily rate of pay than seamen. In December 1902 the Inspector of Marine Recruiting raised concerns over the requirement for stokers

³⁴⁴ J. Maloney, *I.W.M. 663* (London, Imperial War Museum Sound Archive, Reel 1).

³⁴⁵ *Ibid.*

³⁴⁶ Anthony Carew, *The Lower Deck of the Royal Navy 1900-39: Invergordon in Perspective* (Manchester, Manchester University Press, 1981). 27.

³⁴⁷ Lionel, Yexley, *The Inner Life of the Navy*. 149.

to have to purchase their kit claiming that a number of potential stokers had refused to 'sign on' when they learnt that they would have to purchase their kit. Moreover, having refused to sign on these men then opted or were 'cajoled' into joining the Army with the promise of a free kit.³⁴⁸

The issue of the stoker's kit gratuity was raised with the Treasury, who declared:

we are not prepared to demur to the principle that stokers should be placed in the same position in this respect as ordinary seamen.³⁴⁹

In January 1903, the Captain of *Duke of Wellington*, the largest of the Portsmouth hulks, wrote to the C-in-C Portsmouth acknowledging receipt of an order granting a clothing gratuity of nine pounds to the 'stoker-class.' The order authorised a gratuity to be paid in two separate instalments of four pounds on entry to offset the cost of a stoker's initial kit and a further five pounds when the man was kitted up for sea.³⁵⁰ However, the first half of a stoker's kit cost six pounds, while the second or sea-going half of a kit cost almost three pounds. This anomaly placed a stoker in debt to the Crown to the sum of two pounds, three shillings and nine pence on entry which took seven weeks to clear leaving each stoker with only five shillings a week pay; approximately half of their allotted sum.

Eventually an error was discovered in the calculations when it was noticed that stokers had previously been entitled to a one pound gratuity in respect of their bedding on first entry.³⁵¹ As a result, the stoker's kit gratuity was increased to ten pounds under the following Order-in-Council:

We beg to recommend that your Majesty may be graciously pleased by your order in Council, to sanction as from 1st October 1902 the issue of a total

³⁴⁸ TNA, ADM 116/626, 'Clothing Gratuity Granted to Stoker Ratings on First Entry,' ed. Admiralty (1902).

³⁴⁹ Letter N.P. 3436 21 October 1902 in TNA, ADM 116/626.

³⁵⁰ TNA, ADM 116/626, 'Clothing Gratuity Granted to Stoker Ratings on First Entry.' Letter no. 199 from Captain *Duke of Wellington* to C-in-C Portsmouth, 8 January 1903.

³⁵¹ 'Orders in Council for the Regulation of the Naval Service 232: Clothing Gratuity to Newly-Entered Stokers,' ed. Admiralty (London, Eyre and Spottiswoode for HMSO, 1902).

gratuity of Ten Pounds for this purpose to all newly-entered Stokers, the conditions of payment to be at our discretion.³⁵²

The specific wording, 'conditions of payment to be at our discretion', was an Admiralty ploy deliberately inserted in order to ensure that the stoker's kit gratuity would be paid in such a manner that as before, the first payment did not cover the full cost of the first half of a kit. This penny pinching attitude unnecessarily placed stokers in Crown debt in order to recover some of the expense of issuing a not so 'free kit.' The Captain of *Duke of Wellington* returned to the debate by observing that despite the new regulations recruiters had continued to inform prospective stokers that they would receive full pay of eleven shillings and eight pence a week and a 'free kit.' Once again, the prospect of incurring Crown debt was said to have caused 'considerable dissatisfaction' amongst the stokers, and many 'refused to sign.'³⁵³

By discriminating against stokers on this issue the Admiralty not only unfairly penalised the men and hampered its own recruiting targets but by its own admission the dissatisfaction over having to pay for their kit became a 'fruitful cause of desertion amongst stokers.'³⁵⁴

Prior to 1890 the lower-deck appeared 'quite content to pay for their clothes without looking on it as an injustice.'³⁵⁵ Moreover, because the men purchased their kit out of their own personal funds they saw it as being their own personal property. The Navy appeared to agree as prior to the introduction of new uniform regulations in late 1890 it had adopted a policy of 'non-interference' with kit. However, Yexley noted that the proper dressing of the men had then assumed 'a new importance to the uniform strategist' with the introduction of the new uniform regulations.³⁵⁶ This brought about much resentment from the men who objected to having to pay for a uniform kit which

³⁵² 'Orders in Council for the Regulation of the Naval Service 232: Clothing Gratuity to Newly-Entered Stokers.

³⁵³ TNA, ADM 116/626, Letter no. 98, 4 January 1903.

³⁵⁴ TNA, ADM 7/941, 'New Scheme of Training Officers and Men,' ed. Admiralty (Admiralty, 1903). 24.

³⁵⁵ L. Yexley, *The Inner Life of the Navy*, 149.

³⁵⁶ *Ibid.*

was then subject to petty inspections and regulations.³⁵⁷ The main complaint made by men serving in naval barracks appeared to be the petty rules and regulations imposed on them with regards to clothing inspections. Stoker James Maloney recalled that there was 'rigid discipline' at Chatham barracks while dress codes were also 'rigidly enforced.'³⁵⁸

The paragraph in HMS *Victory's* 'Red Book' which detailed the regulations of the barracks laid down the following routine for kit inspections:

Every man joining barracks is allowed time for mustering his bag, completing kit, or making his bag uniform as follows,
 If from Foreign service = 48 hours
 If from Home service = 24 hours
 If from Harbour service = Half a day.
 If after he has had his full time he fails to pass the Clothing Officer, his leave will be stopped until such time as his bag is uniform.³⁵⁹

The sailors 'housewife' was a good example of what Yexley considered 'the stupid red tape of authority.' A 'housewife' was a small sewing kit which was regarded as part of a man's kit. However, because the uniform regulations stipulated that there was to be 'no deviation from the mustering list', many officers took this to mean that the 'housewife' had to be complete and to scale. Yexley observed that some officers were so keen to follow instructions to the letter, that they were known to count individual buttons and needles and to check the length of the measuring tape in the 'housewife' to ensure that each item was present and correct. This attention to detail meant that for all practical purposes, the 'housewife' could not be used for its intended purpose, therefore most men kept it in their 'bag' for mustering purposes only. As a result, the men were forced to provide themselves with a separate 'Jewing bag' which contained sufficient sewing materials to enable them to keep their uniform kit in good repair.

³⁵⁷ L. Yexley, *The Inner Life of the Navy*, 162.

³⁵⁸ J. Maloney, *I.W.M.* 663, Reel 2.

³⁵⁹ TNA, ADM 1/7895, 'Rules and Regulations: Royal Naval Barracks Portsmouth,' ed. Admiralty (1905).

Lower-deck firms

The term 'Jewing' was a traditional naval term to describe the act of making clothes or a generic term given to a ship's tailor. Most ships had a 'Jewing' firm which made up uniform articles for men from serge and flannel purchased from the ship's Paymaster. Chief Stoker Ernest Bullock noted in his memoirs, that the catering arrangements in force in the Navy during the first decade of the twentieth century resulted in many of the married men struggling to pay their share of the communal mess-bill each month. The burden of having to find the money to meet a large monthly mess-bill, together with the need to send as much of their pay as possible home to their dependants, explained why so many married men went into business operating lower-deck firms.³⁶⁰

In her study of the naval 'internal economy' Elinor Romans pointed out that economic activity on the lower-deck took two forms being either a 'one-off' transaction or a business conducted over a longer period of time.³⁶¹ While regulation of the internal economy varied from ship to ship, men required permission from the captain to set up a firm which was generally granted unless there were too many firms. Romans suggested that a firm would consist of one man but generally operated with up to four men.³⁶² Although not noted by Romans there was a valid economic reason why a firm would wish to have more than one operator. In order to maximise its profits a firm would need to ensure its members were in opposite watches in the watch and station bill so that the firm was able to trade around the clock.

Traditionally, the ship's blacksmith and plumber made up the 'snobbing' or cobbling firms while the ship's painter and shipwright would team up together to craft various types of *object d'art* mostly made from wood and highly decorated to be kept by the men as mementoes of the commission or given as gifts to their mothers or sweethearts. Because they had access to measuring equipment and utensils and a 'clean area' to mix their brew or develop

³⁶⁰ E W Bullock, 'Recollections of Naval Service,' 6.

³⁶¹ Elinor Romans, 'The Internal Economy of the Royal Navy in the Twentieth Century,' *Mariner's Mirror* 94, no. 1 (2008). 79.

³⁶² *Ibid.*

photographs, the sick berth stewards ran the 'goffer' and photography firms. 'Goffer' is a traditional naval term for a soft drink and in the pre-canteen days before bottled soft drinks could be purchased onboard, the goffer firm would make up quantities of iced lemonade and hawk it around the mess-decks for a penny a glass (with or without sherbet).³⁶³

On the *Lancaster* in the heat of the Mediterranean, S.P.O. Reynolds bemoaned the fact that sailors were denied 'liquor of any kind onboard except the daily half gill of rum.' He argued that the Navy was 'years' behind the Army in this respect and reminisced of the time he had been 'royally entertained' in the Argyle & Sutherland Highlanders Sergeants' mess in Malta where he had sat in a 'comfy chair' drinking 'the finest spirits and beer.'³⁶⁴ The best that Reynolds could do was to join the rest of his shipmates around the 'Fo'c's'le, Arms' as the *Lancaster's* Maltese run lemonade bar was called.³⁶⁵

The smokers amongst the lower-deck were each entitled to draw an allowance of one pound of tobacco per month, if serving in home waters, and two pounds if on foreign station. The tobacco was issued in its natural leaf state and needed to be treated to allow it to mature to each man's particular taste. Should a smoker be too busy or too lazy to roll their own leaf tobacco, the 'bacca' firm would oblige and after treating the leaf tobacco, it would be rolled and twisted in a small piece of canvas much like a rolled up hammock for three pence a pound.³⁶⁶ One of the 'perks' for the 'bacca' firm was that they kept a quarter of each man's tobacco for their services which they could then re-sell thus further maximising their profits.³⁶⁷

Most ships had a barbering and shaving firm known as 'Sweeny Todd', usually operated by stokers or marines. The late centenarian and former Chief Stoker William (Bill) Stone took up tobacco rolling while serving in his first ship HMS *Tiger* as a second class stoker in order to supplement his service pay. On

³⁶³ Sydney, Knock, *Clear Lower-Deck*, 158.

³⁶⁴ J. W. Reynolds, *Diary of the Mediterranean Commission of H.M.S. Lancaster*, 34.

³⁶⁵ *Ibid.* 15.

³⁶⁶ Sydney Knock, *Clear Lower-Deck*, 153-8.

³⁶⁷ Elinor Romans, *The Internal Economy of the Royal Navy in the Twentieth Century*, 84.

being drafted from *Tiger* to 'Guzz' (Devonport Barracks) in 1921 he bought his first set of barber's tools from a retiring chief petty officer for the grand sum of one pound. Over the following twenty-six years which included time in the *Hood* and service at sea during both World Wars, Bill Stone, when not on watch in the stokehole operated a 'Sweeney Todd' firm.³⁶⁸ The savings he made from his 'firm' allowed Stone to open his own barbers shop when he retired from the Navy which he successfully managed until he finally retired. Bill Stone was the last man alive to have served in the Royal Navy throughout the two World Wars when he finally died at the age of one hundred and eight years in January 2009.

One of the more important firms was the 'dhobying' firm. 'Dhobying', was a colloquialism inherited from British association with military service on the Indian sub-continent and a term used by the lower-deck to describe the act of washing clothes or bathing. In ships up to the size of cruiser class during the first decade of the twentieth century, only E.R.As and stokers had the luxury of bathrooms, the rest of the ship's company had to make do with a wooden mess-tub. The mess tub served the dual purpose of a daily scrubbing out tub for washing up the mess utensils and 'traps' (pots and pans) and for scrubbing down the mess table. In addition, it served as a weekly mess bath for the men who would take it in turns to wash themselves down in the water remaining from cleaning the mess 'traps' and scrubbing out the mess.

In most ships stokers had sole use of a tiled bathroom, unlimited hot water and access to a stokehole, engine room or other convenient machinery space in which to hang up the wet dhobying to dry, therefore they had a virtual monopoly on running the all-important 'dhoby' firms.³⁶⁹ However, small ships such as torpedo boat destroyers, destroyers and submarines were not fitted with bathrooms. Stoker Frank Rose recalled that before going off watch, each pair of stokers from the boiler rooms would fill a bucket with boiling water taken from the boiler gauge glass test cock. The men would then heave the bucket out of the stokehole on a long length of rope and take their portable bathroom

³⁶⁸ William Stone, *Hero of the Fleet: Two World Wars, One Extraordinary Life-the Memoirs of Centenarian William Stone* (Edinburgh: Mainstream Publishing, 2009). 71-2.

³⁶⁹ Sidney Knock, *Clear Lower-Deck*, 159-63.

onto the upper-deck in the lee of the break of the fo'c'sle (fore-part of the ship). Trying to keep out of the weather as much as possible, the men would take it in turns to strip and wash in the bucket. However, Rose remembered that in rough seas they would quite often get soaked by breaking waves making the whole business 'a waste of time and energy.'³⁷⁰

On the other hand, while making a healthy profit for their operators, ships' firms could be a financial drain on men who were forced by necessity to use them. While gambling and money lending were forbidden under the Naval Discipline Act, services could be brought onboard by signing a 'chit' and paid for when the men were paid; or by illegally bartering their rum ration. The contemporary post card, (See Illustration 8, p. 142) clearly depicts the financial pressure that faced men through using ships' firms. Cleavelly bemoaned the fact that while he had been paid three days previously he had been unable to afford to go ashore for the preceding two weeks, observing, 'you can see what 'it,' [his pay] goes on.' Cleavelly's premonition that he would never see 'civilization' again proved correct. Just five months later and only a few hours from Greenock the battleship *Barham* collided with the *Duchess* which sank with the loss of 160 men. Unfortunately, John Cleavelly was not among the twenty-three survivors.³⁷¹

³⁷⁰ R.F. Rose, *I.W.M.* 754, 69.

³⁷¹ *The H.M.S. Barham Association* (2008 [cited 31 May 2010]); cited in <http://www.hmsbarham.com/ship/hmsduchesscollision.php>.

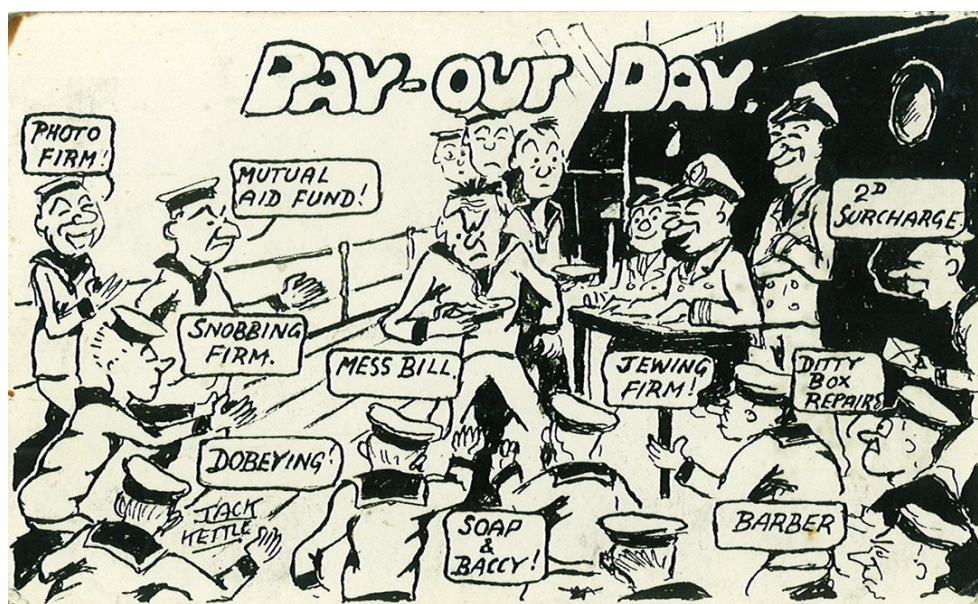
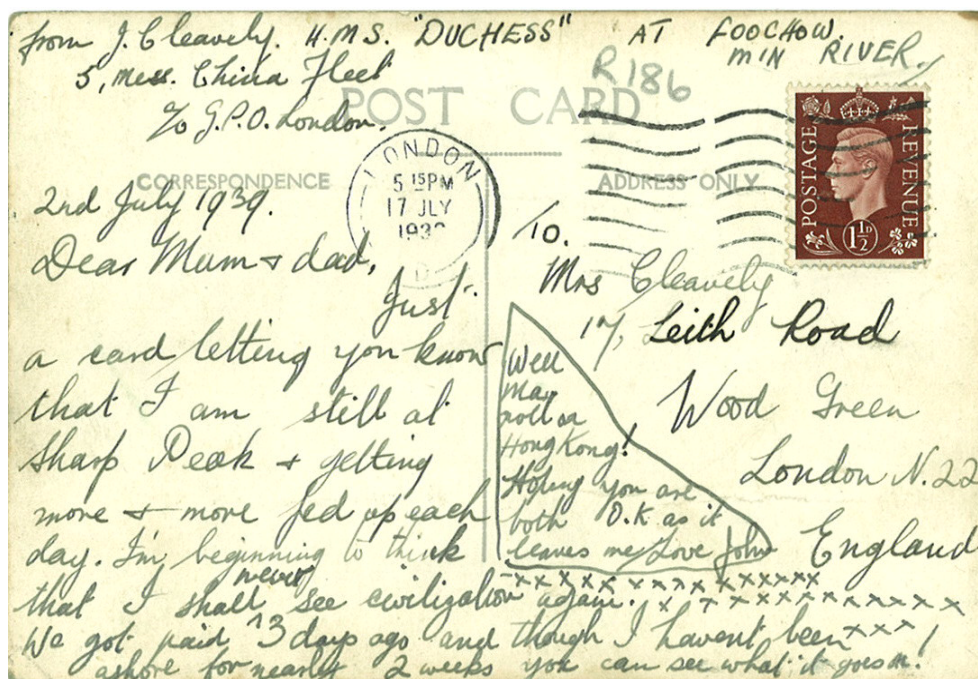


Figure: 8 Postcard from J. G. Cleavelly, H.M.S. *Duchess*, (1939)

Source: Author's private postcard collection.

Naval victualling- the Fixed Ration and Savings System

Prior to 1907, catering arrangements for the lower-deck had remained virtually unchanged for 120 years. The men were victualled under the 'Fixed Ration and Savings System' which was known to the men as 'Canteen Messing' because they were forced out of necessity to purchase extra food from the canteen in order to subsidise the fixed ration. The 'fixed' part of the ration comprised a daily allowance of basic food items which was termed the 'standard ration.' In addition, a system known as 'savings' which had been an unauthorised but common practice during most of the eighteenth century, was officially included within the fixed ration from 1799. 'Savings' allowed men to leave a portion of their daily 'fixed ration' with the Paymaster in return for a money equivalent which was paid monthly to the caterer of each mess, (See Appendix 5). This system allowed men to either purchase other items of foodstuffs from the Paymaster or ship's canteen or to save some money each month which could be disbursed back to each man should the mess find itself in credit.

The standard ration in 1902 allowed each man one and a quarter pounds of biscuit or one and a half pounds of soft bread, together with one pound of fresh meat and one pound of fresh vegetables. When fresh provisions were unavailable, one pound of salt pork and half a pound of split peas was issued every other day. On the other day, one pound of salt beef together with flour, suet and raisins was issued although these items could be replaced with oatmeal or split peas. This basic diet was supplemented with preserved meat, preserved potato and compressed vegetables. In addition, the men received small quantities of tea, sugar, chocolate, mustard, pepper and vinegar.

A contemporary writer promoted the standard ration as a 'good system' for the men because it remained the 'same all over the world, no matter where the ship may have been.'³⁷² Whereas, in practical and dietetic terms, the 'fixed' nature of the standard ration meant that there was absolutely no variation in the

³⁷² Lower Deck, *The British Navy from Within* (London, Hodder and Stoughton, 1914; reprint, Digitised by Microsoft for the University of California 2010). 142.

diet of the lower-deck from ship to ship or station to station, nor did the standard ration take into account variations in the availability of different foodstuffs due to changing seasons or particular climatic conditions.

Due to long running discontent amongst the lower-deck with regards to the poor quality of the provisions, the monotony of the staple diet and the high cost of mess bills, Lionel Yexley mounted a strong campaign for victualling reform which eventually forced the Admiralty to instigate a series of victualling committees. Yexley had the support of Admiral Sir John Fisher, who accepted many of Yexley's proposals which eventually transformed the feeding and clothing of sailors. Anthony Carew observed that these reforms constituted the biggest single improvement to the quality of lower-deck life in over half a century for which he gave all the credit to Yexley.³⁷³

It could be argued that despite the many technical innovations introduced into the Royal Navy during the early 20th century, the welfare and health of the lower-deck was badly neglected. While ships became ever more dependent on electricity, wireless, steam turbines and water-tube boilers, the living conditions on the lower-deck remained as basic as the ships of the line which had preceded the steam Navy. In particular, the Navy lagged behind most other navies when it came to providing modern conveniences such as onboard bakeries, cool and cold rooms and fresh and refrigerated provisions; while there was also a dire shortage of trained cooks.

Yexley pointed out that every other Navy but the British were fitted with cool and cold rooms to preserve fresh and frozen produce and bakeries to bake fresh bread each day, while every other Navy had a full complement of trained cooks.³⁷⁴ The United States Navy had entirely dispensed with dried and salted provisions by 1908 and was able to supply its men with a wide variety of fresh, frozen and chilled victuals (See Appendix 6). By comparison, the first class protected cruiser *Terrible* had a simple 'beef-screen' for the stowage of fresh

³⁷³ A. Carew, *The Lower Deck of the Royal Navy 1900-1939*, 27.

³⁷⁴ Lionel Yexley, 'The Navy and Its Personnel,' *The Bluejacket and Coastguard Gazette*, March 1903.

beef which was not only 'too small and un-refrigerated', but was inappropriately sited being directly outside the 'heads' (toilets) used by 600 men.³⁷⁵ Because it had no effective way of maintaining fresh or frozen provisions, the twentieth century Navy relied on the same salted and dried provisions that were served to men in the eighteenth century, (See Appendix 7). Moreover, the Admiralty responsibility for victualling the men ended with the issuing of provisions to each man, thereafter, the men themselves were left to their own devices with regards to the method of preparing and cooking their food.

Mess cooks

Having laid down a standard daily ration, it was left to each individual mess to decide the menu for the one and only hot meal of the day. Each day two men would be allocated the duties of 'cooks of the mess.' Their first duty would be to draw the mess meat ration at 7 o'clock in the morning. Thereafter, they had to decide how to prepare and cook the dish for the noon time dinner. Having prepared the meal from the rations provided supplemented with any extras the men had purchased themselves, the dish would be taken to the galley for cooking.

Shore based galleys were obviously not as limited by space as ship board galleys, nonetheless, the daily routine in naval barracks remained the same on shore as it did at sea. Men in barracks drew their standard ration in the same manner as those at sea and prepared their dinner in similar fashion on the mess-deck table. One of the main complaints made by the men with regards to the preparation of their dinner was the lack of time allocated to them as the task had to be completed during their breakfast time.

³⁷⁵ L. Yexley, 'The Navy and its Personnel,' *The Bluejacket and Coastguard Gazette*, March 1903.

Chatham Barracks Standing Order 219 issued in 1908 stipulated:

Dinners are to be prepared during the breakfast hour and taken to the galley before the 'hands fall in'; failing this, it must be understood that cleaning the mess comes first.³⁷⁶

Menus

Having prepared their daily rations into a suitable dinner on the mess table, the mess cooks would take it to the galley for cooking. However, as the men prepared the meal for cooking themselves the use of the term 'cook' to describe the person who boiled the offering was something of a misnomer. In the galley vegetables (if issued) were placed in nets, each net bearing a 'tally' to show which mess it belonged to. The pudding or 'duff', as the sweet is known in the Navy would be placed in a duck canvas bag. Due to a lack of experience and limited catering equipment the meal could only be boiled in a large copper therefore the meat, vegetables and duff would all be boiled at the same time.

If the meat was to be roasted, or if the mess-cooks had the necessary culinary skills to prepare a pie dish, this would be placed on a tray within the copper boiler to steam cook alongside the vegetables and 'duff' before being placed in an oven to 'brown off.' This mode of cooking was employed because few ships' galleys had ovens sufficiently large enough to cope with the demand. Yexley observed that a meal prepared in this fashion could not be described as an 'eatable article', leaving him to suggest that his readers 'must bring their own imaginations to bear on the subject.'³⁷⁷

There were a number of ways in which the mess-cooks could show off their culinary skills. The 'straight-bake' was meat placed on a roasting dish and offered to the galley. Other variations included 'schooner-on-a-rock' where the meat was surrounded with potatoes and the 'royal-roast' which included all the trimmings of a traditional roast dinner.³⁷⁸ On joining their first ship, men had to quickly learn the culinary arts from their peers. These included the intricacies of

³⁷⁶ Lionel Yexley, *Inner Life of the Navy*, 217.

³⁷⁷ *Ibid*, 218.

³⁷⁸ Sidney Knock, *Clear Lower-Deck*, 101.

using a rolling pin, making flaky pastry and preparing roasts, suet, and milk puddings. The more experienced men would be able to make fish cakes, fillet fish and to make sauces, gravies and stuffing.³⁷⁹ Stoker Frederick Wigby joined the Navy at Chatham in 1933 and after completing his initial new entry training, spent a month in the main galley learning how to make pie crusts, dumplings and batter puddings; although he recalled spending 'slightly more time peeling potatoes and onions.'³⁸⁰

As noted, the daily standard ration issued to the men only allowed for one cooked meal a day. Breakfast consisted of one pint of cocoa without sugar or milk and ship's biscuit. Lunch, commonly known as dinner, was served at noon and consisted of the bulk of the daily ration of fresh meat and vegetables or a salt meat and preserved vegetable substitute. Supper, at half-past four consisted of one pint of tea (no milk) and biscuit. If the mess could afford it, extra provisions could be purchased from the Paymaster or the ship's canteen to provide a variation in the diet or something for the men to have for supper such as tinned herrings or cheese.

As one of few men to achieve commissioned rank from the lower-deck during the early part of the twentieth century, Henry Capper remembered the deprivations of the standard ration. In his memoirs he described the long hours between supper and breakfast, with two night watches in between, and nothing to eat, as being 'the most trying time.'³⁸¹

With regards to the quality and training of Royal Navy cooks, a committee reported in 1876 that ship's cooks 'generally know nothing about cooking, in the proper acceptance of the term.'³⁸² This statement is unsurprising as the first naval school of cookery was only established in 1872 with the

³⁷⁹ Sidney Knock, *Clear Lower-Deck*, 101.

³⁸⁰ Frederick Wigby, *Stoker Royal Navy* (London, Blackwood, 1967). 9-10.

³⁸¹ H D Capper, *Aft-from the Hawsehole: Sixty-Two Years of Sailors' Evolution* (London, Faber and Gwyer, 1927). 258.

³⁸² 'Navy (Victualling Savings). *Copy of the Report of the Admiralty Committee Appointed in 1870 to Inquire into the System of Savings of Provisions and Victualling in the Royal Navy*,' in House of Commons Papers, Reports of Commissioners (London, 1876). 5.

appointment of a single cookery instructor.³⁸³ The situation with regards trained cooks was not much improved by 1931 when it was disclosed by the committee tasked with investigating the relative benefits between the standard ration and the proposed new system of messing allowance, that there were still 'insufficient trained cooks in the Navy.'³⁸⁴

Salted rations

Ernest Bullock was drafted to the *Bluebell* on the China Station in 1924 and recalled that although the *Bluebell* had a small ice making machine, she was not equipped with a refrigerator, consequently fresh provisions were in short supply. As a result, the men were issued with preserved rations including 'hard tack' (salt-pork). On the last occasion this item was issued Bullock claimed that the barrel was date stamped 1878, some forty-six years earlier. Having queried the date, he decided that he could not be sure that it indicated the date in which the barrel had been packed; nonetheless he observed that 'if you did not like eating fat bacon, you couldn't stomach the pork issue.'³⁸⁵ While describing 'salt pork and pea-doo' (cooked split peas) as 'very tasty', Bullock was not at all keen on salted cod. The 'old salts' according to Bullock, referred to salt cod as 'toe-rag' and even after a twenty-four hour soak in fresh water he could 'never stomach the dish.'³⁸⁶

Scurvy

Brian Vale claimed that from June 1800 'the conquest of scurvy in the Royal Navy could really be counted,' however, this did not necessarily mean that the disease had been eradicated.³⁸⁷ The Navy's reliance on a diet consisting of mainly preserved and salted provisions together with a general lack of fresh vegetables, meat and fruit ensured that the means of preventing

³⁸³ 'Orders in Council for the Regulation of the Naval Service 18: School of Cookery and Trained Cooks,' ed. Admiralty (Eyre and Spottiswoode for HMSO, 1872).

³⁸⁴ TNA, ADM 1/8756/174, 'Committee of Messing in H.M. Ships Victualled on the Standard Ration and Messing Allowance System,' ed. Admiralty (1931). 5.

³⁸⁵ E W Bullock, 'Recollections of Naval Service,' 36.

³⁸⁶ *Ibid*, 7.

³⁸⁷ Brian Vale, 'The Conquest of Scurvy in the Royal Navy 1793-1800: A Challenge to Current Orthodoxy,' *The Society of Nautical Research* 94, no. 2 (2008). 172.

scurvy were absent; therefore scurvy was a recurring problem well into the twentieth century. Fresh meat was a suitable preventative for scurvy, however, as previously described, even when fresh meat was available at sea it was not always suitable for cooking and eating due to difficulties in maintaining it in a fresh condition. In 1915 Leading Stoker Henry Nancarrow on passage to St Helena in the *Albion* recorded in his diary:

the heat is unbearable in the stokeholds and it seems ridiculous to keep on drawing fresh provisions, the ship's butcher has to throw meat overboard as it only keeps for a few hours.³⁸⁸

Stoker Thomas Cooper served in the *Exmouth* during the naval operation to force the Dardanelles in 1915 and described the food onboard the *Exmouth* as being 'very bad.' He noted that the men were 'lucky if they got a slice of dry bread for the first meal of the day at breakfast.' Moreover, he remembered that the arrangements for the stowage of fresh meat on the *Exmouth* were so limited that the men would only receive a ration of fresh meat on the first day at sea, thereafter their ration would be salt meat or corned beef rations on alternate days.³⁸⁹ The lower-deck of the *Kent* was also reduced to dry bread for breakfast in 1915. Thomas Dixon, the ship's junior surgeon recorded in his diary that the ship had run out of all fresh provisions and with no news of a supply ship being sent 'the men were reduced to a diet of dry bread and tea for breakfast, tea and supper.'³⁹⁰

The *Philomel* reported in 1909 that an outbreak of scurvy had rendered ten men unfit for duty. One of these, a stoker, eventually died in hospital at Aden from severe dysentery.³⁹¹ In his report, Staff Surgeon Pope pointed out that the ship's company of the *Philomel* had been on salt or preserved rations for eighty-five days out of 159; this amounted to almost one salt ration issued every other day. Moreover, the ship's surgeon declared that green vegetables had been unavailable while the only fresh meat issued to the men had been

³⁸⁸ Henry Nancarrow, January 20th 1915.

³⁸⁹ Thomas Cooper, *R.N.M.N. (Rec) 018, 'Transcript of Memoirs of Service as a Stoker in the Royal Navy,'* (Leeds: University of Leeds, 1975).

³⁹⁰ T. B. Dixon, *The Enemy Fought Splendidly* (Poole: Blandford Press, 1983). 69.

³⁹¹ Statistical Report of the Health of the Navy for the Year 1909, 'Report on the Outbreak of Scurvy onboard HMS *Philomel*,' 189-94.

'inferior mutton', which had been derived from animals that had previously suffered from tuberculosis.³⁹² The staff surgeon concluded that the health of the men had been weakened by long continuous service off the Somali coast under 'depressing conditions and great heat.' In his estimation, the heat had 'particularly affected the stokers as he noted that the ship had been under-weigh, or at short notice for steam on 122 days out of 159.'³⁹³

The Rice Victualling Committee

In response to various campaigns to bring about reform to naval victualling arrangements the Admiralty appointed Vice-Admiral Rice to chair the first of a series of committees tasked to investigate the naval victualling system. The 'Rice Committee' was specifically ordered to look into the question of 'victualling of the men of the Royal Navy with particular reference to the men's meal hours, the prices paid for savings and the management of naval canteens. However, despite ordering the inquiry, the Admiralty demonstrated that it was not prepared to consider major changes to the system then in force. The Admiralty advised Admiral Rice that despite any disadvantages arising from it, it would not consider abolishing the system of savings. Furthermore, the Admiralty was not prepared to consider the abolition of canteens or of their management being placed directly under Admiralty control despite wide-spread allegations of corruption.³⁹⁴ Carew suggested that while the Rice Committee was a 'triumph for naval reformers', it was a qualified one because the Admiralty had failed to comprehend the interrelation between the 'official' and 'unofficial' ration. Therefore, Carew questioned whether the terms of reference laid down for the Rice Committee allowed it to tackle the roots of the problem.³⁹⁵

One of the most contentious items in the standard ration was Admiralty produced ship's biscuit, which was not at all popular with the men. Yexley observed that the men refused to eat the service ration biscuit unless as a last

³⁹² 'Report on the outbreak of Scurvy onboard HMS *Philomel*,' 189-94.

³⁹³ *Ibid*, 190.

³⁹⁴ 'Report of the Committee Appointed to Inquire into the Question of Navy Rations, Meal Hours, the Prices Paid for Savings and the Management of Canteens,' ed. Admiralty (London, House of Commons, 1901).

³⁹⁵ A. Carew, *The Lower Deck of the Royal Navy 1900-1939*, 21.

resort; preferring instead to pay six to eight pence per pound for biscuit supplied by the canteen, when soft bread was unavailable.³⁹⁶ However, this view was not shared by the Rice Committee who declared that with regards to the biscuit, 'no real grounds for complaint existed.' Dismissing the men's objection to the biscuit, the committee came to the conclusion that the men were 'prejudiced against the biscuit for no good reason.'³⁹⁷

Chief Stoker Ernest Bullock, had good reason to be prejudiced against ship's biscuit. As a joke and also as a practical demonstration of the inedible nature of the biscuit, he posted one to his fiancée from onboard the destroyer *Oberon* at Portsmouth. With just an address label pasted onto the biscuit and with no other wrapper or protection, the biscuit arrived safely in Plymouth in one piece.³⁹⁸

Despite having concluded that 'no real dissatisfaction existed with regards to the Standard Ration', the Rice Committee nonetheless decided to add jam, coffee and preserved meat to the ration. It also gave the men two extra meal hours so that the lower-deck could have a formal breakfast and a late supper meal break on top of the early morning cocoa, lunch and tea breaks that already existed; although no extra rations were provided for these times.

Yexley was quick to condemn the new ration on the grounds that two ounces of jam and four ounces of preserved meat issued day after day would become just as monotonous and nauseating as the previous ration.³⁹⁹ As predicted by Yexley, the novelty of the new ration eventually wore off leaving the Admiralty with 269,000 pounds of spoiled jam in its storehouses which had become 'unsuitable for issue' because the men refused to take it up.⁴⁰⁰ It appears not to have occurred to the Admiralty that an issue of jam was of little use to men who were bereft of soft bread?

³⁹⁶ Lionel, Yexley, *Inner Life of the Navy*, 245.

³⁹⁷ 'Report of the Committee Appointed to Inquire into the Question of Navy Rations,' 17.

³⁹⁸ E. W. Bullock, 'Recollections of Naval Service,' 21.

³⁹⁹ Lionel, Yexley, *The Inner Life of the Navy*, 232.

⁴⁰⁰ *Ibid*, 234.

Tinned rations

While serving in the *Bluebell* Bullock relied on tinned food to supplement the staple standard ration. He was particularly fond of Maconochie's 'tinned dinners'; describing the most popular supper dish on the *Bluebell* as tinned sausages and mash, or fish cakes made from tinned salmon.⁴⁰¹ However, many men refused to eat tinned meats. During a further victualling committee which sat just five years after the Rice Committee allegations surfaced regarding American tinned meats. These allegations were said to have had a considerable effect upon the minds of the men, so much so, that they had created a 'prejudice amongst them with regard to tinned foods.'⁴⁰² Because of a low take up of the preserved meat ration the Admiralty attempted to force the men to accept it by making the preserved meat ration a compulsory item of the standard ration for which no savings were allowed. However, Yexley observed that most men refused to eat their eight ounce weekly ration of preserved meat, 'because of fears generated by the Chicago meat scare.'⁴⁰³

The reference to the Chicago meat scare may have been prompted by the novel *The Jungle*, written by Upton Sinclair an early American socialist journalist who uncovered corruption and other malpractices within the American meat industry which was alleged to have processed and canned 'diseased and rotten meat.'⁴⁰⁴ The novel was published in 1906, the same year the Login Victualling Committee began to take its evidence and may have been responsible for turning the men off the tinned meat ration. Whatever the cause, the lower-deck boycott left the Admiralty with over 2,000,000 pounds in weight of American tinned meat which had to be re-sold on the open market.⁴⁰⁵

⁴⁰¹ E. W. Bullock, 'Recollections of Naval Service,' 36.

⁴⁰² TNA, ADM 174/404, 'Report of the Committee Appointed to Enquire into the Question of the Canteen and Victualling Arrangements in H.M Fleet,' ed. Admiralty (Eyre and Spottiswoode for HMSO, 1907).11.

⁴⁰³ Lionel Yexley, *The Inner Life of the Navy*, 226-7.

⁴⁰⁴ Upton Sinclair, *The Jungle* (Chicago, Upton Sinclair, 1906).

⁴⁰⁵ L. Yexley, *The Inner Life of the Navy*, 235.

The 'Login' Victualling Committee

Rear-Admiral Spencer Login was appointed in 1906 to review the findings of the previous Rice Committee. The Login committee reported in 1907 that in its review of the 1901 statement on ship's biscuit made by the Rice Committee, 'it could not contest the statement as to its dietetic value' but could re-affirm that it was 'thoroughly unpopular with the men.' The 'Login Committee' heard evidence from various sources that there was a strong desire amongst the men for the introduction of a biscuit more of the type issued by the Army and the leading steamship companies. In its deliberations, the Login committee discovered that between 1905-1906 2,800,000 pounds of biscuit was issued to the lower-deck. However, only 150,000 pounds was actually 'taken up' by the men, suggesting that they had received 'savings' in lieu.⁴⁰⁶

Ships' bakeries

In his memoirs S.P.O. Reynolds accused the Admiralty of 'strenuously opposing ships' bakeries.' He noted that in 1903 the Admiralty acquired two new warships (*Triumph* and *Swiftsure*) which were originally ordered for Chile. Unlike ships of the Royal Navy, both of these vessels were fitted out with bakeries, however, Reynolds recalled that because the Admiralty drafted 'ships' cooks' and not bakers to the two ships; 'no lessons were learned.'⁴⁰⁷ The decision not to provide bakeries appears to have been initially made by the Rice Committee on the flimsiest of grounds with the justification that baking appliances 'could be damaged in action in time of war,' while it also considered that bakeries would take up too much space at a time when space onboard warships was at a premium.⁴⁰⁸ However, having belatedly accepted that the men refused to eat ship's biscuit, the Login Committee finally recommended that in ships not fitted with bakeries, three days ration of fresh bread should be carried while further supplies could be obtained from ships fitted with bakeries.

⁴⁰⁶ Spencer Henry Metcalfe Login, 'Report of the Committee Appointed to Inquire into the Question of the Canteen and Victualling Arrangements in H.M. Fleet,' (Navy: Canteen and Victualling Arrangements), ed. Admiralty (HMSO, 1907), 8.

⁴⁰⁷ J. W. Reynolds, 'Diary of the Mediterranean Commission of H.M.S. Lancaster,' 16.

⁴⁰⁸ 'Report of the Committee Appointed to Inquire into the Question of Navy Rations,' 17-8.

Furthermore, the committee authorised ships to bake their own bread 'where the cooks were capable of doing so.'⁴⁰⁹ The caution in this statement may well have been justified. Some twelve years later during the *Hood's* initial sea trials a report recommending alterations to the galley noted:

In view of the unskilled men who will use the galley and bakery burners an ample supply of spare gear should be supplied.⁴¹⁰

Savings

As previously stated, the standard ration or 'bare-Navy' was unvaried, unappetising and issued in insufficient quantities to satisfy the lower-deck. Therefore, men relied on 'savings' from the standard ration in order to purchase alternative items from the ship's canteen to provide them with a more varied and appetising meal. However, the canteen was as much a source of discontent amongst the lower-deck as the standard ration itself. The irony of canteen messing was that while fresh food was unavailable on the official standard ration it could be bought at a price from a ship's canteen. Stoker Ernest Bullock remembered that aboard the *Natal* 'no mess ever lived on the official ration alone' as each mess was able to purchase 'all kinds of green-stuff, bacon and ham from the canteen to supplement their ration.'⁴¹¹ This statement would suggest that there was something drastically wrong with the service standard ration if it could only provide the men with salted meat, compressed vegetables and dried peas when a civilian run ship's canteen could offer the men fresh greens and other fresh produce.

Stoker Bullock remembered that at the end of the month a statement of the mess spending and allowances would be placed on the mess-deck notice board noting that, 'if you lived too well during the month, you found that you were in debt to the canteen.' He also observed that many of the married men

⁴⁰⁹ S.H.M. Login, 'Report of the Committee to inquire into the Question of the Canteen and Victualling Arrangements in H.M. Fleet,' 9.

⁴¹⁰ Ian Johnston, *Clydebank Battlecruisers: Forgotten Photographs from John Brown's Shipyard* (Barnsley: Seaforth Publishing, 2011). Report from Constructor Stanley Goodall 'Hood at Sea,' 1919, 133.

⁴¹¹ E. W. Bullock, 'Recollections of Naval Service,' 6.

struggled to make ends meet at the end of the month because some men would leave the last halfpenny to their wives 'as there was no marriage allowances then.'⁴¹²

While the lower-deck appreciated the variety of fresh and other foods it could purchase from ships' canteens, bribery and corruption were said to be rampant while the men were regularly 'fleeced and robbed.'⁴¹³ Many of the complaints regarded short measures, high prices and inferior goods. Although the Rice Committee had concluded that ships' canteens were most favoured by the men, the men themselves appeared to have been far from unanimous as to which system they actually preferred. Canteens could be run by an individual ship, or by a tenant usually representing a civilian catering enterprise or more usually by an individual Maltese proprietor. Through its strategic position in the Mediterranean, Malta became an important naval base and as such the island enjoyed a long-standing association with the Navy. Over the years Maltese businessmen became adept at providing the goods and services that the Navy required. One important part of this service was the provision of ships' canteens. However, many men were unhappy with the corruption that is alleged to have been associated with canteens and expressed a wish for the Admiralty to take over the running of them but this was discounted by the Admiralty in its brief to the Rice Committee.

When asked by the Login Committee which type of canteen they preferred, stokers representing the three Home Port Divisions voted as follows:

Portsmouth Devonport Chatham

Chief Stokers	Ships	Tenant	Tenant
Stoker Petty Officers	Ships	Official	Official
Stokers	Ships	Official	Official ⁴¹⁴

⁴¹² Ernest, Bullock, 'Recollections of Naval Service,' 6.

⁴¹³ Lionel Yexley, 'Parliament and Canteens,' *The Bluejacket and Coastguard Gazette*, May 1903.

⁴¹⁴ TNA, ADM 174/404, 'Report of the Committee Appointed to Inquire into the Question of the Canteen and Victualling Arrangements in H.M. Fleet,' ed. (Admiralty, 1907), 93.

From the results above it is clear that opinions differed between the Home Ports. All classes of stokers from the Portsmouth division particularly favoured a ship's canteen system, while the majority of S.P.Os and stokers from the Devonport and Chatham divisions preferred an official Admiralty run canteen system. Only the Chief Stokers of the Devonport and Chatham divisions supported tenant run canteens. These preferences were replicated by the other fifty-eight, senior and junior lower-deck ratings of all branches of the service who also gave evidence to the Login Committee. Out of these, the majority (twenty-two) voted for an official canteen system, (twenty) voted for a tenant system with only (sixteen) men supported a ship's canteen system. These results indicate that the committee chaired by Admiral Rice that purported to reflect the mood of the lower-deck with regards to its support for ship run canteens, was far from correct.⁴¹⁵

The views of the Devonport division were summed up by S.P.O. Patrick Shea serving in the *Niobe* who, when asked by the committee which was the best type of canteen, answered, 'none.' After being pressed to give an answer Shea advised the committee that the men in his division recommended the Admiralty take over the running of all canteens.⁴¹⁶ Furthermore, when asked by the Director of Contracts to comment upon the quality of 'service provisions' onboard his ship, Shea described the corned beef served in the *Niobe* as 'not fit to be eaten', the flour 'out of date', and ship's biscuit 'not up to the mark.'⁴¹⁷

Stoker Elliott of the *Hogue*, also answered 'none' when asked by the committee which 'canteen system' he preferred. Furthermore, when invited to suggest how the 'canteen system' could be improved, Elliott replied that the stokers in his division wished to 'abolish the canteen system entirely.'⁴¹⁸ Elliott advised the committee that the men of the Devonport division were all unanimous in their desire for 'properly cooked meals.' Furthermore, Elliott advised the committee that in the overwhelming opinion of his division, the

⁴¹⁵ TNA, ADM 174/404, 'Report of the Committee Appointed to Inquire into the Question of the Canteen and Victualling Arrangements in H.M. Fleet,' 36.

⁴¹⁶ Ibid, 63.

⁴¹⁷ Ibid.

⁴¹⁸ Ibid, 64.

Admiralty should take over full responsibility for victualling, cooking, and feeding the men. In order to reinforce this message, Elliott pointed out to the committee that the Devonport Stokers 'did not want to play any part in the 'preparation or accounting for their food.'⁴¹⁹

Despite the declaration from the Rice Committee that the system of savings which had been in force for 'upwards of one hundred years' was one that the men of the Navy were 'much attached',⁴²⁰ Stoker Elliott forcibly argued that the stokers in his division 'did not want any savings.' In a final plea, Elliott stated that the Devonport stokers simply wanted to be 'well fed,' making the point that, 'money matters did not come into the argument at all.'⁴²¹

At this juncture in the history of the lower-deck, petty inter-branch rivalries usually prevented any collective decisions being made which might have benefited all men whatever their branch. However, in order to reinforce the argument so forcefully presented by Stoker Elliott, the Devonport stokers managed to enlist the support of the other Devonport branch representatives to submit a joint written plea to the Login Committee. The inclusion of E.R.As, sick berth staff, and writers in the joint plea is an indication of the level of support for victualling reform. These men usually saw themselves at the top of the lower-deck social hierarchy and would not normally support a plea from men they considered to be lower down the social scale.

From examination of the evidence given by the Home Port lower-deck representatives, it is clear that the Login Committee found themselves at cross-purposes with the lower-deck representatives. In their attempts to determine which of the three 'types of canteen' the men preferred, the Login Committee found that the stokers in particular were only interested in discussing the need to abolish the 'canteen messing system,' a system which forced men to subsidise their rations out of their own pockets. Moreover, all of the Devonport

⁴¹⁹ TNA, ADM 174/404, 'Report of the Committee Appointed to Inquire into the Question of the Canteen and Victualling Arrangements in H.M. Fleet, 64.

⁴²⁰ TNA, ADM, 1/8756/174, Report of the Committee Appointed to Inquire into the Question of Navy Rations, 3.

⁴²¹ TNA, ADM 174/404, 64.

representatives were united in their wish to see canteens and the standard ration and savings system of victualling abolished entirely in favour of 'properly cooked meals.'

General messing

General messing was a revolutionary system for the Royal Navy, but a relatively common feature of other navies and the Army, whereby each man was allocated a monetary daily messing allowance instead of a ration of food. The ship's Paymaster used the collective messing allowance of the ship's company to purchase provisions which were then prepared and cooked for the men by fully trained cooks in galleys equipped for the purpose.

Trials which took place on selected ships in 1908 proved that general messing would satisfy most of the men's complaints with regards to the poor state of naval victualling. In the *Furious* all catering was managed by a First Class Petty Officer Cook while the cooking was carried out by trained cooks assisted by one seaman, two stokers and two marines. These men were relieved every three months, and worked alongside the cooks in the galley to prepare meals for the entire ship's company.⁴²² The combined daily standard ration together with alternative rations purchased from the canteen using the 10d. daily messing allowance enabled the men of the *Furious* to be fed three hot meals and a cold tea each day with a daily menu posted on the ship's main notice board which included the following fare:

Breakfast: Kippers, bloaters, haddock, faggots, brawn, sausages.
 Dinner: Joints, (extra vegetables not supplied by the service), various puddings.
 Tea: Bread and butter, cake, jam, watercress, celery, etc
 Supper: Liver and bacon, Gloucester cheeses, German sausage, fried fish, cold cuts. Bread and butter available ad-lib at all meals.⁴²³

This much improved victualling system cost each man no more than 1s. 6d. a month which was a pittance compared to the twenty-five shillings Yexley

⁴²² Lionel Yexley, 'Canteens and Victualling,' *The Fleet*, March 1908. 71.

⁴²³ *Ibid*, 71.

estimated most men spent per month in subsidising food from their own wages.⁴²⁴ Despite the plea made by the Devonport Division in 1906 for 'properly cooked dinners', and the undoubted success of the general messing trials in 1908, the 1931 Committee of Messing in H.M. Ships disclosed that only half the Royal Navy's ships benefited from general messing. Furthermore, 'cooks of the mess' lasted well into the 1950s until the Navy eventually built every new ship with the facilities to be able to offer 'general messing.'⁴²⁵ On the other hand, the final demise of 'savings' was not appreciated by all men as the following contemporary poem explains:

'GENERAL MESSING'

What is it fills our bitter cup
 And makes our hearts feel sore?
 Why does the dismal queue line up
 Outside the canteen door?
 Why can't we put a quid away
 Ten bob or even less? -
 O messmates, 'tis misfortune's sway:
 The woes of 'General Mess'
 O tis not to our liking;
 My wife, my only friend,
 Believes I'm hunger striking
 or 'going round the bend.'
 She moans for her poor hubby,
 She's not to blame, I know
 They used to call me tubby
 They call me Snakey now.⁴²⁶

Obviously written by a married man, this poem suggests that the more experienced men may have been able to eke out an existence on the standard ration while managing to save a few shillings each week from their 'savings' in order to send to their families. However, the men of the *Furious* may have disagreed with the sentiment that general messing contributed to 'starvation'.

The long delay in changing from standard, to general messing, resulted in a two-tier Navy with widely differing mess bills dependent on whether a man was serving in a general messing or standard ration ship. The Director General

⁴²⁴ Lionel Yexley, 'Canteens and Victualling,' 71.

⁴²⁵ Yuriko Akiyama, 'Trained Cooks and Healthy Boys: Reforming the Mess in the Royal Navy before the First World War,' *The Mariner's Mirror* 94, no. 4 (2008). 428.

⁴²⁶ Anon, *The History of HMS Drake*, (Plymouth, 1973), Chapter V.

of Victualling observed, 'there is no doubt that there is a tendency in standard ration ships for the men to live up to the general mess standard, with consequent unduly high mess bills.'⁴²⁷ Moreover, the 1931 Messing Committee which sat after the September 1931 Invergordon mutiny concluded that the high cost of lower-deck mess bills was a contributory factor to the lower-deck unrest. The following evidence was submitted to the post Invergordon inquiry from respective C-in-Cs:

Portsmouth

Heavy general mess bills particularly abroad and in non-general mess ships which should be remedied.

Plymouth

Investigation of mess bills and high rates of messing in non-general mess ships. Also rates for stations abroad vary and some are extremely high.

Nore (Chatham)

In standard ration ships and even general mess ships, and particularly in ships abroad, mess charges are incurred of widely differing rates.⁴²⁸

It is apparent that despite the evidence given by lower-deck representatives to Admiral Login's Committee which clearly pointed to great dissatisfaction amongst a majority of the lower-deck with regards to 'canteen messing'; there was a reluctance amongst senior officers to 'modernise' the naval victualling system. In an illuminating paragraph the 1931 Messing Committee appeared to justify the retention of the standard ration system by observing:

It is a convenient and well understood method of feeding the men which does not require a specially trained department or individual to manage it. Consequently landing parties and men in camp can be messed without an elaborate cooking organisation. In fact it helps to teach men to look after themselves and contribute to the maintenance of the traditional 'handiness' of the sailor.⁴²⁹

This statement perfectly highlights the lack of appreciation senior officers had for the conditions that the lower-deck had to contend with and completely

⁴²⁷ TNA, ADM 1/8756/174, "Committee of Messing in H.M. Ships Victualled on the Standard Ration and Messing Allowance System,' 1.

⁴²⁸ Ibid, Enclosure 'A', 4.

⁴²⁹ Ibid, 'A', 5.

contradicts the wishes of the lower-deck. Some twenty-six years previously Stoker Elliott of the *Hogue* had informed the Login Committee that all the men wanted was a 'proper cooked dinner,' moreover a dinner that they did not have to prepare themselves. Another senior naval officer argued that the high cost of messing in standard ration ships was due to 'inefficient mess caterers.' At a stroke, this statement removed the responsibility for the inefficiencies in the service system of victualling from the Admiralty and placed it unfairly on the men themselves. In order to improve matters it was suggested that an officer, 'preferably a volunteer', should supervise mess-caterers.⁴³⁰

The unprofessional and cavalier manner in which naval officers supported the archaic method of naval victualling was in direct contrast to the Army which had introduced a professional messing system in 1911. Selected Army officers were required to complete professional courses in the management of soldiers' messing, while each military unit had a messing committee comprising an officer as president together with elected representatives of the rank and file. Army mess committees were tasked with meeting the wishes of the majority of the men with regards to their catering arrangements 'as far as was possible.'⁴³¹

According to Searle, the Boer War had revealed organisational weaknesses, not only in the Army, but in the whole machinery of government.⁴³² The worst of British military amateurishness and the propensity to 'muddle through' problems was exposed during 'Black Week' leading to a renewed call for 'National Efficiency;' particularly with regards to putting the Army and Navy on a more professional footing. It could be argued that the new messing system introduced by the Army in 1911 was a reaction to this criticism and a sign that it was introducing the changes it required to enable it to become a more professional service. Yet, twenty years later, the Navy demonstrated that it still maintained an amateur policy with regards to the victualling of the lower-deck and had no great desire to introduce change.

⁴³⁰ TNA, ADM 1/8756/174, Enclosure 'A' 82.

⁴³¹ 'Soldiers Messing,' *The Naval and Military Record and Royal Dockyard Gazette*, 23 August 1911. 533.

⁴³² G. R. Searle, *The Quest for National Efficiency*, 50.

Then again, it could also be argued that by forcing the men to fend for themselves in the most important area of victualling, the Admiralty unwittingly produced men who became independent by nature and who proved adept at feeding themselves with absolutely minimal support from an Admiralty that appeared unwilling to accept that it had any responsibility for feeding the men itself. The comment repeated earlier that the naval standard fixed ration system 'contributed to the maintenance of the traditional 'handiness' of the sailor,' was undoubtedly given in order to support an outdated victualling system, nevertheless, there may have been a grain of truth in the idea.

During the Second Boer War (1899-1901) part of the British military force ran out of supplies and was reduced to short rations. Commander Grant RN of the *Doris* who commanded the naval brigade described his 'bluejackets' as being 'guileless' when it came to foraging for food, but applauded the stokers who were said to have seldom returned from the veldt without a sheep allowing the wardroom to dine on leg of lamb every night.⁴³³ These actions suggest that stokers at least, had through necessity, become independent of mind and actions proving that they were more than able to fend for themselves.

Off duty routines

Despite having to subsidise their food from their meagre wages many men opted to incur additional extra living expenses by choosing to pay to sleep ashore whenever possible, rather than suffer the petty discipline and basic amenities provided free by the Navy. A room for the night in one of the temperance establishments run by the Salvation Army or Royal Sailors Rests cost 1s. at 1906 prices and was therefore a relatively expensive luxury for many on the lower-deck. Nonetheless, the price must have been considered good value for money despite the fact that 1s. for a stoker second class represented just over half his daily rate of pay of 1s/8d, while for a S.P.O. with three years seniority 1s. equalled one third of his daily rate of pay.⁴³⁴

⁴³³ P. Hore, ed., *Seapower Ashore: 200 Years of Royal Navy Operations on Land* (London, Chatham, 2001), 200.

⁴³⁴ 'Orders in Council for the Regulation of the Naval Service 129: Alterations in Training Pay Etc of Engine Room Ratings,' ed. Admiralty (London, Eyre and Spottiswoode for HMSO, 1906).

That the men were willing to sacrifice such a significant amount of their daily pay to enjoy a nights rest between clean sheets, rather than live at no extra expense in barracks or onboard their ship, could be taken as being indicative of the feeling amongst the lower-deck with regards to the poor standard of naval accommodation and to the excessive level of discipline then in force in the Navy. HMS *Victory's* 'Red Book' detailed the establishments rules and regulations and gives an insight into the reasons why men would prefer to spend as little time as possible within the constraints of the naval barracks. Some of the restrictions placed upon the men under the heading 'Notes and Orders for Information and guidance of men joining Royal Naval Barracks'; warned men:

GAMBLING OF ANY KIND AND THE USE OF CARDS ARE STRICTLY PROHIBITED (emphasised by capital letters)

The inside patrol have orders to report any man loitering about the grounds improperly dressed.

All men who remain in barracks are to be in their rooms by 1015 p.m. and turned in. Any man found loitering about the blocks or grounds after that time will be placed in the report. Men returning from leave after 1015 p.m. are to turn in at once. No loitering about in rooms *or anywhere else is permitted.*

Smoking Regulations, smoking in the mess or barracks room is strictly prohibited neither will smoking be allowed in the kitchen or room opposite, or on the staircases or passages leading from block to block. Smoking is to cease at 9.45 p.m. and whenever the 'Cease Fire' bugle is sounded. Smoking is allowed in all the canteen rooms (excepting the recreation room) in the billiard room, but not the reading room.

Leave, those who are entitled to leave may do so at either, or any of the times named, without pipe or bugle call, the barrack clock being taken as the signal, on striking the hour or half hour.

Men will not be permitted to pass out of the Gates at intermediate times:- 9.20 a.m. 1 p.m. 1.30 p.m. 2 p.m. 4 p.m. Then every half hour till 6.30 p.m. All leave expires 6.45 a.m. Liberty men will assemble in the vicinity of the Guard House for inspection by the Officer of the Day, and are to be strictly in uniform.⁴³⁵

By contrast, life in a Royal Marine barracks was conducted at a far more leisurely pace where marines were given the freedom of personal responsibility which enabled them to come and go as they pleased. At Eastney barracks Portsmouth, all Non Commissioned Officers and gunners with very good conduct were allowed a standing reveille pass until 7. 30 a.m., which meant

⁴³⁵ TNA, ADM 1/7895, 'HMS *Victory*, Red Book'.

they could go ashore whenever they pleased and return to their barracks at any time during the night. Unlike the naval practice where all men were formally inspected by an officer before proceeding ashore, marines were not inspected. Instead the NCO on gate duty was responsible to check that no man proceeded out of barracks improperly dressed. Smoking was allowed at any time and in any place in Eastney barracks, except on the parade ground or whilst on duty.⁴³⁶

However, while conditions in naval barracks were basic and restrictions petty and numerous, life onboard the lower-deck of a ship whilst at sea or alongside in harbour could be a lot worse. SP.O. Reynolds reflected that life in an onboard mess was as 'prison like' as the Navy could make it.⁴³⁷ While the *Lancaster* was in Malta, Reynolds had an opportunity to visit friends in the Argyle and Sutherland Highlanders Sergeant's mess who he had first met when the regiment was stationed at Chatham. He described how the sergeants enjoyed billiards, smoking and reading rooms, and a comfortable bar where 'liquors of the highest quality were supplied at the lowest possible cost.' Moreover, while sitting on the mess veranda with a 'long cool glass of beer' Reynolds mused on the differences between the treatment of Army non-commissioned officers and those in the Royal Navy. Noting that a naval chief petty officer was the most senior rating on the lower-deck, Reynolds observed that they were allowed 'practically no more privileges' than the most junior rating carried. He reflected that a chief petty officer was not allowed any form of privacy nor were they allowed to smoke in their mess, take refreshments, or relax in their mess during the working day. In addition, Reynolds complained that during Captain's rounds every man, including all chief petty officers, were required to open their private lockers for inspection.⁴³⁸

Reynolds noted in his journal that he never visited naval canteens because they were always 'supervised' by the naval police or by the 'Scotland Yard brigade'; the latter probably being a reference to the duty chief and petty

⁴³⁶ *The Fleet Annual & Naval Year Book*, ed. Lionel Yexley (London, Westminster Press 1909). 37-8.

⁴³⁷ J. W. Reynolds, '*Diary of the Mediterranean Commission of H.M.S. Lancaster*,' 35.

⁴³⁸ *Ibid.*

officers who were required to undertake supervisory duties in naval canteens.⁴³⁹ Stoker Sidney Knock described naval 'wet' (beer) canteens as violent places where 'there were some real good fights and many ghastly brawls.' Despite the limited opening hours of the canteens and the strong force of patrols posted to ensure each man only received the two pints of beer allowed each day, Knock stated that 'gambling schools were in abundance.' Naval canteens for both junior and senior ratings were basic in the extreme with rough wooden benches and tables and bare floor-boards.⁴⁴⁰

Agnes Weston and the Temperance Movement

When Stoker James Leary was 'off duty' in Devonport barracks, he would always 'make a dash for the four o'clock liberty boat' in order to escape from the rigid discipline then in force in barracks.⁴⁴¹ The 'liberty boat' was a procedure whereby men wishing to go ashore at the end of the working day would fall in to be inspected by the duty 'Officer of the Day' before proceeding ashore. Any man whose uniform dress did not reach the required standard would be refused permission to leave barracks or their ship. Leary suggested that because of the strict discipline of barracks routine together with a general lack of amenities 'few people who were off duty-would stay in barracks.'⁴⁴²

Once ashore, Leary would make straight for Ford Street Devonport in order to book a room for the night at 'Aggie's' (Agnes Weston's Royal Sailors' Rests) in an attempt to beat the competition for the relatively small number of rooms available prior to engaging in a nights drinking and entertainment.⁴⁴³ By contrast, Stoker James Maloney who was teetotal, enjoyed the singing and communal worship to be found in the 'temperance' atmosphere of these establishments rather than the pubs and bars of Devonport or the strict discipline of Keyham barracks.⁴⁴⁴

⁴³⁹ J. W. Reynolds, *Diary of the Mediterranean Commission of H62-3*.

⁴⁴⁰ S. Knock, *Clear Lower-Deck*, 244.

⁴⁴¹ J. Leary, *I.W.M. 553/18*, 51.

⁴⁴² *Ibid.*

⁴⁴³ J. Leary, *I.W.M. 553/18*, 51

⁴⁴⁴ J. Maloney, *I.W.M. 663*, Reel 4.

As previously noted, Mary Conley described the great interest shown by the general public in naval affairs and its seamen during the late nineteenth and early twentieth centuries. However while some representations portrayed seamen as dutiful, patriotic servants of the Empire, others presented them as drunken, irresponsible, gallivanting tars who became 'social misfits' once ashore.⁴⁴⁵ Conley argued that while Agnes Weston became famous among the British public for her efforts to reform the morals of the Navy, she never gained widespread support among naval men for her teetotalism. In fact, Conley suggested that Agnes Weston's Christian temperance mission often elicited scorn from naval men who, by the early twentieth century, criticized the maternalism of her naval charity. Furthermore, Conley pointed out that while naval men were fully aware of their responsibilities as husbands and Christians, they resented Weston's benevolence because it reduced them to the status of children who required constant guidance and protection, instead of treating them as autonomous adults.⁴⁴⁶

Lionel Yexley was a fierce critic of Weston and in a long running newspaper editorial and letter campaign he accused Weston of profiteering under the guise of providing relief for 'poor Jack'; Jack Tar being a pseudonym for the British sailor. Yexley published a booklet entitled 'Charity and the Navy' in which he challenged Weston's general accounts while criticising the relatively small amount of charity given by Weston to sailors and their dependents out of her profits.⁴⁴⁷

Stoker Sidney Knock was another critic who, while admiring her devotion to her charitable cause, nonetheless thought Weston's temperance campaign to have been an 'ill advised tragedy and a complete fiasco' which was viewed by the lower-deck with 'mistrust and suspicion.'⁴⁴⁸ Knock suggested that ninety percent of the men who used the temperance establishments did so for the bed only and not for any religious reasons, because the Sailors' Rest's were usually

⁴⁴⁵ Mary A. Conley, 'You Don't Make a Torpedo Gunner out of a Drunkard: Agnes Weston, Temperance and the British Navy,' *Northern Mariner* 9, no. 1 (1999),1.

⁴⁴⁶ Ibid,

⁴⁴⁷ S. Knock, *Clear Lower-Deck*, 221.

⁴⁴⁸ Ibid, 233.

situated conveniently next door to the dockyard.⁴⁴⁹ Stoker James Dunn also thought 'Weston's' was looked upon by the majority of the men as a 'bit of a laugh.' However, while enjoying the religious services and fellowship found at 'Weston's', Dunn also made use of the weekly training classes where he studied mathematics and engineering drawing in preparation for taking his S.P.Os examination.⁴⁵⁰

Knock voiced some misgivings with regards to the style of the rooms to be found in Sailors' Rests. Describing the 'bedroom' as a 'five feet by eight feet matchboard cell', he observed that apart from the bed and a small mat the room was devoid of any furniture; while the ceiling consisted of stout wire netting. Knock observed that the netting was deliberately designed to enable the janitor to 'spy' on sailors during the 'silent hours' with a type of 'periscope.' On reflection he thought that this arrangement only strengthened the impression that the morals of the British tar were 'extraordinarily lax', while he questioned whether it was necessary 'to put sailors in cages.'⁴⁵¹

Gambling

Acting Midshipman Alexander Scrimgeour joined the Navy as a thirteen year old cadet in 1910 but the onset of war in 1914 interrupted his naval education. Until his untimely death at age nineteen while serving in the battle-cruiser *Invincible* during the battle of Jutland in 1916, Scrimgeour kept a diary of his life as a young officer. After one particularly rowdy gun-room guest night, Scrimgeour admitted that he had had a 'terrific gamble' with his guests, and had 'lost heavily at cards.'⁴⁵²

Playing cards was prohibited on the lower-deck and gambling for money attracted severe penalties if caught. Nonetheless, sailors liked to amuse themselves by playing cards and many liked to gamble. Submarine Signaller Ashley Claude stated that playing cards or 'Housy-Housy' (Tombola) were the

⁴⁴⁹ S. Knock, *Clear Lower-Deck*, 237.

⁴⁵⁰ J. Dunn, *I.W.M.* 769, Reel 6.

⁴⁵¹ S. Knock, *Clear Lower-Deck*, 236.

⁴⁵² R. Hallam and M. Beynon, *Scrimgeour's Small Scribbling Diary 1914-1916*, 212.

two most popular pastimes at sea in both general service and submarines and were 'always' played for money.⁴⁵³ Unlike gambling on cards, playing Tombola for money was permitted in the Navy. Ten percent of the takings went to the ship's Sports Fund or the establishments expenses, and the remainder went to the winner of the line (30 percent) and the house (60 percent). Claude acknowledged that gambling in the Navy was illegal, but claimed 'everyone did it.'⁴⁵⁴ As the proprietor of a Crown and Anchor board while serving onboard the submarine depot ship *Forth*, Claude would have been well aware of the penalties for gambling.

Crown and Anchor was originally a fast paced gambling board game utilising three, six sided dice on a numbered board. Sometime during the Napoleonic war era the numbers were substituted in the Navy for symbols depicting a crown, anchor, diamond, spade, club and heart. The six squared 'board' was usually brightly painted canvas which could be quickly rolled up and hidden should the naval police interrupt the players. Each Crown and Anchor board was operated by a 'banker' who controlled the game, paying out the winners and keeping the profits for himself.

Claude was obliged to pay another signaller five pounds a month to act as his 'lookout' in order to protect his enterprise from the ships' police onboard the *Forth*. This not inconsiderable sum would have substantially added to the signallers pay which at 1917 pay rates would have been three pounds and three shillings a month. Then again, Claude admitted that he once had to pay out thirty pounds to a winner which equated to an average nine months wages for a typical young rating.⁴⁵⁵ This admission gives an indication of the relatively vast sums that could be won or lost at Crown and Anchor and the reasons why it was so popular on the lower-deck. Claude was not ashamed to admit that he used 'loaded dice' which were specially made for him to ensure the banker always 'came out on top.'⁴⁵⁶

⁴⁵³ Ashley Reginald Claude, *I.W.M. 661* (London, Imperial War Museum Sound Archive, 1975).

Reel 4.

⁴⁵⁴ *Ibid.*

⁴⁵⁵ *Ibid.*

⁴⁵⁶ *Ibid.*

In order to attract men to play the game, Crown and Anchor bankers would have a selection of 'shouts.' One popular shout was:

Anybody say the old stokers' friend-for a bit more

The stokers' friend being the spade symbol replicated from the playing card suite. Another shout encouraged:

*What about a bit on what the ladies crave for (the diamond)*⁴⁵⁷

When the fleet visited Weymouth prior to the First World War men were transported ashore by local steamers. Many men would board the steamer only to return back onboard penniless without ever making landfall as Crown and Anchor schools would be stationed onboard the steamers ready to fleece the unwary. Similarly, it was said that at Rosyth there were so many Crown and Anchor schools operating in the hedgerows between the canteen and dockyard that they were known as 'Will-o'-the-Wisps' for the flickering lights coming from their candles.⁴⁵⁸ While gambling on cards and board games was prohibited, placing bets on fleet regattas was condoned. Lionel Yexley estimated that up to 5,000 pounds was wagered on a cutter race during one particular naval regatta in the Mediterranean Fleet not including the bets made by ships' officers.⁴⁵⁹

In conclusion, 20th century lower-deck life was little changed from the century preceding it. The men who served in the steel-hulled, turbine driven *Dreadnought* of 1906 purchased their own uniform and bedding and ate the same rations and drew virtually the same wages as the men who served in the 1866 Minotaur class ironclad *Agincourt*. Despite determined resistance from certain senior naval officers men were finally moved out of the rotting hulks which had been their 'shore-side' home from time immemorial and into purpose built barracks at Devonport which had lain empty for three years after completion. This delay and the comment by one serving admiral that the barracks had been a 'shocking waste of public money' provide evidence to the

⁴⁵⁷ Robert Burgess and Roland Blackburn, *We Joined the Navy: Traditions, Customs and Nomenclature of the Royal Navy* (London, Adam & Charles Black, 1943). 66.

⁴⁵⁸ *Ibid.*

⁴⁵⁹ L. Yexley, *The Inner Life of the Navy*, 90.

indifference and lack of concern shown by senior naval officers for the welfare of the lower-deck. Moreover it is clear that the Board of Admiralty were hidebound in the belief that the only way to maintain discipline was to keep the men in the same conditions ashore, as they would find at sea. This perverse reasoning resulted in barracks built on the same lines as hulks or seagoing ships which offered the men a roof over their heads but precious little in the way of comfort or convenience.

This contrasted sharply with the Army and Marines who provided a much higher level of accommodation for their men together with more amenable levels of discipline. Moreover, the fact that Royal Marine officers granted their junior NCOs more privileges than naval officers granted senior Naval Chief Petty Officers indicates a vast disparity between the attitudes of officers of the two branches of the service towards their men. Rather than suffer the petty and repressive regimes that existed onboard ships and in barracks, men would elect to sleep ashore in temperance 'wire 'cage's' where, for a few hours, they might find respite from naval routine. The extra expense this incurred was an additional drain on the wages of men who, by necessity were already required to heavily subsidise their rations as a result of the Navy's archaic attitude towards victualling.

Despite being responsible for the building of the innovative and technologically advanced *Dreadnought*, the Admiralty remained hidebound with tradition when it came to the victualling of the fleet. A lack of modern catering conveniences meant that the Navy was deprived of fresh provisions at sea. This resulted in a standard ration as reliant on salted meats and dried processed vegetables as those proscribed for the nineteenth century Navy. Furthermore, because it had not kept pace with modern catering developments the Admiralty had not seen fit to organise a fully trained or skilled catering branch. As a result, the preparation of the one hot meal a day fell to the men themselves which they accomplished on a mess table with the most basic utensils and without any formal training. As Yexley observed, despite the mens' best efforts at preparing their main meal, the dubious method of cooking everything in a single boiler

overseen by cooks who may, or may not, have had any formal training; were beyond imagination.

Despite clear evidence of lower-deck support for the replacement of the fixed ration and savings system the Admiralty resolutely refused to accept responsibility for the proper feeding of the men. After much persuasion and two different victualling committees, the Admiralty finally acceded to making minor changes to the fixed ration, but to its cost. By ignoring the tastes and preferences of the lower-deck, it ordered victuals that the men refused to accept leaving it with storerooms full of unwanted biscuit, jam and tinned meat. The jam fiasco perfectly exemplifies an Admiralty out of touch with its men and reality. By rejecting the need for onboard bakeries and then granting the men an issue of jam the Admiralty demonstrated complete ineptitude and ignorance. It could be argued that it suited the Admiralty to maintain its outdated and perverse system of victualling because as long as the men were forced to accept responsibility for purchasing and preparing their own food, it absolved the Admiralty from having to do so.

The incidents that took place at Invergordon in September 1931 came as an unexpected and heavy blow to the Admiralty and the officer class of the Navy. Yet, the testimony given to the Login Committee by the Devonport stokers' clearly indicate that discontent over the victualling question had been brewing since the turn of the century. Furthermore, post Invergordon inquiries instigated by the home port C-in-Cs disclosed that the lower-deck had been concerned for many years over the drain on their pay through being forced to subsidise their food long before the cuts in pay which resulted in the Invergordon affair.

Chapter Five

Working relationships and social hierarchies

The social hierarchy of the Royal Navy could be regarded as a mirror image of wider British contemporary society. It comprised an upper-class composed of commissioned officers, a middle-class of senior non-commissioned officers and a lower or working class comprising its sailors, stokers and marines. However, within this standard class system the Navy had a bewildering array of sub-division. Between the commissioned officer class and the lower-deck were commissioned warrant officers. These men had elevated themselves from the lower-deck but had not quite been accepted as 'officers' in the true naval sense. During the nineteenth century Warrant Officer Henry Capper became a leading campaigner for improvement to the status of warrant officers. However, Capper recognised that the system whereby officer candidates were nominated by the Admiralty Board or were entered from a community of 'naval families' who for generations had provided officers for the Navy, prevented him from aspiring to join the naval 'upper class.' The reality of this system was brought home to him during a conversation with the mother of a sub-lieutenant he had served with who declared:

I have the greatest sympathy with you personally in your desire to rise, but you have chosen the wrong service. The Navy belongs to us, and if you were to win the commissions you ask for it would be at the expense of our sons and nephews whose birth-right it is.⁴⁶⁰

This statement would suggest that naval officers were perceived to occupy a particular place in higher society. Ross McKibbin noted in *Classes and Cultures England 1918-1951* that even before 1939 the cultural unity of the upper-class had fragmented. McKibbin suggested that politics, the Church, the civil service and even the armed forces, where members of the upper class who needed occupation found it, were now dominated by the upper middle class.

⁴⁶⁰ Henry D. Capper, *Aft-From the Hawsehole: Sixty-Two Years of Sailors' Evolution*, (London, Faber and Gwyer, 1927), 130.

Because of its traditional military role in fighting the ship, the seaman branch had always been regarded as the 'executive branch' of the Navy, as such it had an elevated notion of superiority over all others. However, by the beginning of the twentieth century the lower-deck comprised several different and distinct branches many of them were highly technical and required men with varying levels of education and training. These ranged from writers and sick berth attendants to signallers, stokers, cooks, telegraphists, marines and artisans such as blacksmiths, coppersmiths, and shipwrights. Separate and distinct from these men were the artificers, these were tradesmen who joined the Navy after having completed formal apprenticeships as engine fitters, fitters and turners, boiler-makers, electricians or armourers or who had joined the service as boy artificers and undertaken apprenticeships in the Navy's own training schools.

The senior petty officers and chief petty officers of these branches made up the Navy's 'middle class.' However, even this class was divided. While being classed as belonging to the lower-deck, artificers through the special status granted to them by the Admiralty, lived an entirely separate existence from all other men having their own separate mess, uniform and other privileges, including the provision of 'mess-men' to serve their meals and tend to their needs. Moreover, despite the similarities between artisans and artificers, artificers considered themselves superior on account of their perceived higher technical skills. As a result, artificers, like warrant officers, lived an isolated lifestyle somewhere between the lower-deck and the wardroom (officers' mess) but not quite a part of either.

The ordinary ratings of the lower-deck also occupied a particular place in the lower-deck working class hierarchy. Mary Conley declared that naval hierarchies were distinguished by rank, which was reinforced through the different uniforms and badges and maintained by ritualistic obedience to discipline.⁴⁶¹ However, while the naval lower-deck was underpinned by a rank structure it was organised around a much more powerful system of branch hierarchies. As Christopher McKee noted in *Sober Men and True*, while lower-

⁴⁶¹ Mary, A. Conley, *From Jack Tar to Union Jack*, 111.

deck status hierarchies flourished they were perceived, subjective hierarchies, therefore, there was no common agreement on the relative status of the branches.⁴⁶² Be that as it may, McKee was clear where the stokers' position lay in the hierarchy when he declared, 'only the existence of stokers prevented the seamen from being the lowest-rung on the lower-deck's perceived status hierarchy'.⁴⁶³

This thesis acknowledges that stokers were regarded as the 'lowest of the low' in contemporary naval society, a perception that is often repeated in the wider historiography of the Royal Navy. However, in the telling of the story the reason 'why' stokers should have been relegated to this lowly position has been universally ignored. Therefore, instead of challenging the hierarchical position of stokers, this chapter will seek an explanation for the reason why they were so labelled. One way to approach this task is to explore the relationships that existed between stokers and other men on the lower-deck in order to determine where conflicts divided men and friendships brought others together. By gaining an insight into the perceptions of their peers, a better appreciation may be gained with regards to how others viewed the position of stokers.

Articles within *Kings Regulations and Admiralty Instructions* effectively neutralised any attempts by the men to collectively lobby the Admiralty in order to gain concessions for improvements to their conditions of service. In order to circumvent these rigid regulations the men formed individual branch societies from which a system of 'class-appeals' became established whereby each branch would lobby for improvements to its status or for improved conditions of service. Provided a branch society had sufficient leverage an individual class-appeal might become integrated with the annual lower-deck appeal commonly known as the 'Magna Charter' which was another unofficial appeal but one which the Admiralty tolerated in order to monitor the militancy of the lower-deck. These appeals stemmed from the rise of branch societies which were themselves born out of lower-deck sickness benefit and mutual aid societies. The rise of these societies and their part in the shaping of lower-deck

⁴⁶² Christopher, McKee, *Sober Men and True*, 102.

⁴⁶³ *Ibid.*

relationships and hierarchies will also be explored in this chapter in order to show the divisions that existed between the various branches and the effects these had on the position of stokers. Despite actual and perceived notions of superiority between officers and men or between individual factions on the lower-deck, the coal-fired Navy practiced one particular evolution that temporarily made all men equal, this was the arduous and much disliked task of coaling ship.

Coaling ship

J. R. Hill argued that the root of all animosity between the executive officer and engineer was the 'residual filth and dirt from coal-firing and coaling ship which tended to cover both ships and men.' Hill observed that the Navy had adopted a regime of cleanliness since the Napoleonic Wars and this blow, towards what he declared to be a 'cherished naval custom', was met head on with an insistence on cleanliness that became 'something of an obsession for the steam Navy.'⁴⁶⁴

Coaling ship was an evolution that no-one in the Navy enjoyed, although it is true to say that sailors' humour always allowed them to make the best out of a poor job. In relating his experiences of coaling ship, Stoker Sidney Knock described how the men would lighten their arduous task by dressing up in clothing which he described as resembling the types of costumes typically worn for a 'fine arts ball or a carnival' with men dressed 'for tennis or wearing morning suits.'⁴⁶⁵ While Stoker Ernest Bullock remembered that stokers always had the clothes for coaling ship whereas the other hands 'looked a motley crew wearing an odd assortment of clothes both old and new'; adding the comment that some men even took to wearing women's underwear on coaling ship day.⁴⁶⁶ However, while photographs of the period show a variety of different headgear, men normally wore overalls or any old service uniform they had which they kept especially for coaling ship, (See Illustration 9, p. 176).

⁴⁶⁴ J.R Hill, 'Accelerator and Brake: The Impact of Technology on Naval Operations 1855-1905,' *Journal for Maritime Research* (1999), 11.

⁴⁶⁵ Sidney, Knock, *Clear Lower-Deck*, 102.

⁴⁶⁶ E.W. Bullock, 'Recollections of Naval Service,' 8.



Illustration 9: HMAS *Australia* Coaling Ship

Source: © Imperial War Museum Image A18753

The general atmosphere of coaling ship could indeed have been described as something resembling a carnival with every man (other than those excused for watch-keeping and other essential duties) employed in coaling including all the ship's officers. In a matter of a few hours everyone involved in coaling ship would be unrecognisable having been covered from head-to-toe in coal dust and with no visible uniform ranks or rates it was difficult for men to pay the customary respect to senior ratings and officers; therefore during coaling ship normal naval routine was placed in abeyance.

Stoker Ernest Bullock remembered that he got into trouble during his first coaling of the *Inflexible* at Sheerness when he was asked to identify himself to a man he did not recognise, being covered in coal-dust like himself. Bullock replied a 'D of cheese' which was an off the cuff reply meaning a penny-worth of cheese, however, the man who had challenged him was a warrant officer who promptly gave the young stoker a cuff around the ear for his cheek. Bullock knew the Warrant Officer would not charge him having given him a blow which was in itself a chargeable offence; therefore he thought 'least said-soonest mended', and promptly carried on with coaling.⁴⁶⁷

Junior officers, cadets and midshipmen, were expected to toil alongside the men while the more senior officers supervised the work; nevertheless officers and men alike suffered the rigours and discomforts of coaling together. Thomas Cooper a former coal miner who joined the Navy as a stoker, because it was 'damn hard work down the pits', admitted that when compared to coal-mining, coaling ship, was 'far harder.'⁴⁶⁸

Surgeon T.B. Dixon of the *Kent* received special permission from the ship's Principal Medical Officer to participate in coaling ship in 1914 while the *Kent* lay anchored off the Abrolhos rocks Brazil. Normally ship's surgeon's were excused this duty as they were required to deal with the numerous accidents which were an occupational hazard and an inevitable result of this dangerous

⁴⁶⁷ E.W. Bullock, 'Recollections of Naval Service,' 8.

⁴⁶⁸ T. Cooper, RNMN (REC) 018, 'Transcript of Memoirs of Service as a Stoker in the Royal Navy,' Leeds, University of Leeds, 1975.

evolution. Dixon described how the officers turned up for coaling at breakfast in the 'most weird costumes' taking their breakfast below decks as the wardroom was closed for the duration of coaling. Within an hour of taking on the first bags of coal the decks were inches deep in coal dust which permeated every part of the ship despite careful precautions to keep dust out of compartments and mess-decks. Dixon remembered that during coaling ship everything onboard 'tasted, smelt and felt, like coal.'⁴⁶⁹

With an engineer officer as escort Dixon was allowed into a bunker. He described the following scene:

Imagine a space 30 by 15 feet with sloping floor and you have the upper-bunker. The coal is dropped into the upper bunkers and owing to the slope much of it finds its way into the lower bunkers. Here it has to be helped into various out of the way corners by the trimmers. We entered through a door into the upper-bunker and took small smoky lamps with us. The dust is thick and choking and the light is invisible six feet away. One's lungs refuse to breathe the thick stuff at first and you cough and choke in it. Feeling our way we dropped through a hole into the lower-bunker. Here the dust and heat were worse still. Men were at work here stowing the coal under a shelf. I never saw them I only heard them, though they were only six feet away. I was about to ascend when some fool above started pouring coal in from above. Foremen shouted from below to tell him to stop. I could hear the stuff thundering down and lumps were hitting me. I tried to get near the chute; more and more coal came down. The air was now solid with dust; my lamp was out and visions of being buried under the avalanche loomed big.⁴⁷⁰

Dixon eventually found another chute and escaped from the lower-bunker and his dangerous predicament. The *Kent's* ship's company worked tirelessly under unremitting heat for seventeen hours to take in 13,000 bags of coal. Nonetheless, Dixon reserved particular praise for the stokers describing trimming coal bunkers as 'appalling work.'⁴⁷¹ He also noted:

The stokers of the Navy deserve far more of their country than they get poor beggars, especially in war time.⁴⁷²

⁴⁶⁹ T B Dixon, *The Enemy Fought Splendidly*, (Poole, 1983) 17.

⁴⁷⁰ *Ibid*, 17.

⁴⁷¹ *Ibid*. 16.

⁴⁷² *Ibid*, 17-18

Stoker Ernest Bullock serving in the *Inflexible* at Malta remembered the 'great rivalry' amongst the fleet when coaling ship. When the *Inflexible* prepared to coal ship, 'stages' (planks of wood) were rigged to connect the ship with the collier or coal-lighters with three stages connected to each lighter. Each lighter carried one hundred tons of coal and there were three lighters stationed to port and three to starboard, thereby giving the ship the opportunity to take in up to 600 tons of coal simultaneously. The stages were manned by six men working in pairs and coaling was completed 'at the double' until the lighters were empty. Bullock reflected that if two lighters were emptied by a gang, then between them the men would have lifted 200 tons of coal remarking, 'no wonder it made your back ache.'⁴⁷³ *Inflexible* carried 3,084 long tons (Imperial tons) of coal and 700 tons of fuel oil which was sprayed onto the coal in the furnace in order to produce a faster burn rate to produce more steam.

Seamen manned the coal lighter filling sacks with coal which were then lifted aboard using ships' or dockyard cranes, or the lighter's own derricks. Using two wheeled hand carts, marines collected sacks of coal from the 'dump point' and took them to their nominated coal scuttle at various locations on the upper-deck.⁴⁷⁴ Stoker Arthur Lilley recalled that leading stokers were often detailed to operate the steam winches which hoisted the coal from the colliers to the ship's deck a duty he had undertaken 'many times.' This duty required precision as the hoists lifted ten, two hundredweight coaling bags in one go and the men were encouraged to work as fast they were able. Lilley claimed that he saw many accidents and at least one death due to wire hawsers breaking and depositing their two-ton load of coal onto the men below.⁴⁷⁵ In the case of the fatality, Lilley remembered that the man was taken to the sick bay and coaling continued without interruption.⁴⁷⁶ In order to calculate the amount of coal being taken in by the receiving ship a leading stoker would select bags at random and weigh them on the ship's scales. The average weight would then be taken and

⁴⁷³ E.W. Bullock, 'Recollections of Naval Service,' 9.

⁴⁷⁴ J. Dunn, *I.W.M.* 769, Reel 3.

⁴⁷⁵ A. E. Lilley, *I.W.M.* 750, Reel 3.

⁴⁷⁶ *Ibid.*

multiplied by the number of bags hoisted onboard and the running total was entered into the engineer's log.⁴⁷⁷

Herbert Smith served as a Marine Light Infantryman in the *Cornwallis* during her time in the Dardanelles. His duty during coaling was handling a trolley from the fo'c'sle dump point. Smith described one particular coaling at Mudros as 'a mad undertaking' designed to get the coal in as 'quick as they could.'⁴⁷⁸ While waiting for the hoist to come across one bag which had not been properly secured to the strop came away narrowly missing him but injuring his foot. Smith recalled that he could have easily lost his life.⁴⁷⁹

Coaling was a dangerous evolution made worse by the Navy's tradition for completing tasks 'at the double' for reasons of smartness and efficiency. Therefore, coaling ship like many other evolutions in the Navy was treated as a competition with individual ships competing to see who could bring in the largest amount of coal in the quickest time. While there was undoubtedly an operational necessity to coal ship as quickly as possible in war time, there was arguably less reason to complete such a hazardous undertaking at break neck speed in peacetime. By turning coaling-ship into a competition it was inevitable that accidents would occur. During the period 1910-1913, twenty-four serious accidents were reported, which would suggest that there were many more deemed to be less serious which did not warrant reporting such as the injury described by Herbert Smith in the preceding paragraph.⁴⁸⁰

Rank had no privileges while coaling-ship. Amongst those seriously injured were a sub-lieutenant and a lieutenant, while two midshipmen and a warrant mechanic were killed. The most common accident was caused through falling objects, either pieces of coal, bags of coal, or parts of the coaling rig and equipment falling onto men working on deck or in the collier. Other

⁴⁷⁷ A. E. Lilley, *I.W.M. 750*, Reel 3.

⁴⁷⁸ H. Smith, *I.W.M. 9061* (London, Imperial War Museum Sound Archive, 1973), Audio Tape 2 Reels, Reel 1.

⁴⁷⁹ *Ibid.*

⁴⁸⁰ 'Particulars of the More Serious Accidents Which Have Occurred During the Coaling of His Majesty's Ships in the Years 1910, 1911, and 1912,' ed. Admiralty, 1912, (House of Commons, Cd. 6634), 2.

accidents were caused by men becoming crushed between the ship's superstructure and the coaling rig or being struck by broken winch cables or other equipment.

Typical accidents reported included one from the *Hibernia* where a beam belonging to the collier was 'jerked' into the hold killing two seamen outright. The *Prince of Wales* reported that a link on the ship's coaling stay fractured causing a hoist of coal (two tons) to fall onto the deck and crush a man to death; while a hoist of empty coal bags on the *Ariadne* knocked a petty officer overboard. Because stokers were employed below trimming the bunkers they were relatively immune from these types of accidents although as previously stated, working in coal-bunkers brought the danger of crush injuries, suffocation or injury or death from explosion.

Stoker James Maloney's first experience of coaling ship was trimming a bunker on the light cruiser *Yarmouth*, however he couldn't keep up with the amount of coal which came down the chute. Eventually Maloney became trapped in the bunker and cried out for help. The Chief Stoker was summoned and encouraged him to 'keep scratching' at the coal 'a little at a time', until he could fill all corners of the bunker and make enough room to extract himself.⁴⁸¹

Stoker Dunn remembered coaling ship at Inverkeithing (Rosyth) on the outbreak of war in 1914 with unemployed coal miners who had been hired to help trim the bunkers. However, as soon as coal started to drop through the scuttle into the bunker the coal miners scrambled out of the bunkers and walked off the ship, 'fearing for their lives.' Dunn presumed that the men must have been 'surface men', as he thought coal-face workers would have been more comfortable working in a confined space 'with coal falling down on top of them.'⁴⁸²

In preparation for coaling ship, seamen would prepare the upper deck by removing deck fittings and gear in order to clear a path from the coal dumping

⁴⁸¹ J. Maloney, *I.W.M.* 663, Reel 5.

⁴⁸² J. Dunn, *I.W.M.* 769, Reel 3.

point to the coal scuttles. Meanwhile, stokers would be busy below decks rigging canvas or metal chutes to enable the coal to pass from the upper-deck coal scuttle into the coal bunkers. The bunkers could be several decks below the upper-deck, therefore a chute would be required to be rigged at each deck level to form a closed passage for the coal to flow from the upper deck down to the bunker.

Stoker Frederick Groves recalled that the coal chutes invariably passed through the mess-decks and were a constant source of irritation to the lower-deck as the canvas chutes would often tear or burst open depositing coal and coal dust throughout the mess-deck.⁴⁸³ Stoker Henry Vincent recalled similar problems when rigging steel coaling chutes on the *Aspasía* which was described as a 'really awkward job.'⁴⁸⁴ Vincent remembered the steel chutes being manufactured from a heavy weight steel and due to their size and weight they required much 'coaxing' with a fourteen pound hammer in order to bring them together so that they could be firmly bolted in place.⁴⁸⁵ While the steel chutes were more durable than canvas they were not much better at keeping coal and coal dust out of the mess-decks and elsewhere.

The 'Water-Carnival'

Three weeks into her two year Mediterranean commission, the *Lancaster* tied up alongside the coaling wharf at Gibraltar in order to coal ship by hand baskets. Once coaling was completed, S.P.O. Reynolds observed that it was the custom not to grant leave to the ship's company until the sailors had had their 'water-carnival' (washed down the ship.)⁴⁸⁶ There were two regular 'water carnivals', the first took place on Saturdays in preparation for the weekly ceremony of Captain's Sunday rounds and the second, which took place immediately after completing coaling ship.

⁴⁸³ Frederick James Groves, *Audio-Cd of Memoirs* (Sussex: 2005).

⁴⁸⁴ H. Vincent, *A Stokers Log*, 75.

⁴⁸⁵ *Ibid.*

⁴⁸⁶ J. W. Reynolds, *Diary of the Mediterranean Commission of H.M.S. Lancaster*, 43.

Water carnivals were the cause of much of the animosity between the 'black gang' (stokers) and seamen. In the first place, stokers resented the disruption that cleaning ship after coaling caused to movement between decks. While seamen blamed stokers for the filth and coal dust that coaling ship deposited throughout the ship. Furthermore, stokers resented the extra burden that cleaning ship placed upon them as in harbour stokers were always kept busy cleaning boilers, repairing defects or completing routine maintenance while seamen had little to do other than cleaning ship. However, there were no real 'winners' or 'losers' from coaling ship as everyone onboard shared the same hardship. As Winston Churchill noted, 'the ordeal of coaling ship exhausted the whole ship's company, in wartime it robbed them of their brief period of rest and subjected everyone to extreme discomfort.'⁴⁸⁷

During cleaning ship routine prior to an inspection by a new rear-admiral, Reynolds remembered that movement below decks aboard the *Lancaster* was restricted because large areas had been closed off by the men responsible for reporting them. This caused the entire ship's company to practice 'walking on air' for a week prior to the inspection.⁴⁸⁸

Another disgruntled petty-officer writing on the perils of the 'water-carnival' observed:

I am writing this on a Saturday night, a good, unadulterated naval Saturday night. All paint-work, bulkheads, upper-deck and lower-deck are covered in the usual tuberculosis canvas; every available bit of space on deck with the exception of a narrow gangway, is wired off to keep the deck free from footmarks. Down below ladders are 'up' all over the place, thus blocking access to different parts of the ship, and crowding us into the smallest available space. Everything is in preparation for the great Sunday forenoon fetish. If the Lunacy Commissioners were to come on board I verily believe they would bag the crowd of us.⁴⁸⁹

⁴⁸⁷ W. S. Churchill *The World Crisis*, Vol. 1. (New York: Scribner's, 1923), 134 in Erik J Dahl, 'Naval Innovation: From Coal to Oil,' *Joint Force Quarterly* 22, no. Winter (2000). 1.

⁴⁸⁸ J. W. Reynolds, 'Diary of the Mediterranean Commission of H.M.S. Lancaster,' 93.

⁴⁸⁹ Letter from a Petty Officer of the Home Fleet August 19th 1911 reproduced in *The Fleet Annual & Naval Year Book*, ed. Lionel Yexley (London, Westminster Press 1912).

The length to which preparation for inspection came before comfort and safety below decks was highlighted by Yexley, who reported that in order to keep the bathroom wash basins on an unidentified ship of the Home Fleet brightly polished for rounds they were kept permanently out of bounds to the ship's company. As a result, a violent facial skin eruption occurred amongst the seamen of the ship.⁴⁹⁰

Sunday routine

The week long preparation for Captain's rounds was the prelude for 'Sunday routine' which was the most hated day of the week for the lower-deck. Sunday routine began with 'call the hands' at six o'clock, half an hour later than normal. Thereafter, Reynolds observed that 'chaos reigned supreme' with the prospect of breakfast or an extra hour in bed looked on as 'taboo' as the men scurried around the ship all 'brooms and buckets, buckets and brooms' making last minute touches to their part of ship prior to 'rounds'. At nine o'clock the men were mustered on the upper-deck in their number one (best) uniform while the 'cooks-of-the-mess' stayed behind to clean up and stow away anything that might offend the 'eagle eye of the captain and his following entourage.'⁴⁹¹

Captain's rounds began at half past nine and depending on the size of the ship could take up to an hour, during which time the men were kept on the upper-deck regardless of weather. After 'rounds' the captain would inspect the men by division, on completion church would be rigged. The Sunday church service would be taken by the ship's chaplain if one was carried or by the Captain and was compulsory for all men of the Church of England. Men of other religious denominations were taken ashore to attend their own services should the ship be lying alongside or at a convenient anchorage.

Reynolds reflected in his journal that his watch in the *Lancaster* used to work out in advance which would be the 'lucky' watch to have the forenoon watch (8 am to 12 noon) in the stokehole on a Sunday morning so that they did

⁴⁹⁰ L. Yexley, 'Sunday in the Navy: The Fetish of Inspections and Its Results.' 588.

⁴⁹¹ J. W. Reynolds, 'Diary of the Mediterranean Commission of H.M.S. Lancaster,' 36.

not have to clean into number ones and undergo the 'screaming farce' of Captain's rounds, divisions and Sunday church service. To Reynolds mind, Sunday routine had developed into such a disagreeable morning that he wagered 'ninety-nine out of every hundred men in the engineering department would rather work below.'⁴⁹²

As with so many other aspects of organisation, the Royal Marines approached inspections and cleaning routines in a much more agreeable and enlightened manner. Marines cleaned their barrack rooms in their own time once a week or even fortnightly. They were inspected while the men were at work daily by the Captain of the Company, weekly by the Field Officer and monthly by the Colonel Commandant. Yexley highlighted the fact that marines were 'never' inspected on Sundays. Moreover, he claimed that they were also not required to participate in evening quarters or dog-watch (4 pm to 6 pm and 6 pm to 8 pm) evolutions.⁴⁹³ Both of these naval traditions were designed to keep sailors' busy for as long as possible during the day on the premise that 'idle hands make mischief.'

Lower-deck sentiments towards certain naval customs, notably 'Sunday routine' received support from some naval officers. One anonymous officer writing on the topic in the *Naval Review* asked the question 'has it ever struck anyone what a travesty of a Sunday we keep on board'? In support of his argument the writer observed, 'everyone knows that the bluejacket has to scurry around and work harder for the first four hours on Sunday than any other day of the week, what a farce it all is.'⁴⁹⁴ Another officer noted that the service treated the sailor as a man during the week, but as a 'feckless child when he communicated with his God', noting with some irony that the naval service lacked the courage to re-name the ceremony of 'Divine Service' to that of 'Church Parade.'⁴⁹⁵ The suggestion was made that as men over a certain age were capable of deciding whether physical drill was good for them, then the same rule should apply to church attendance. However, the writer pointed out

⁴⁹² . W. Reynolds, 'Diary of the Mediterranean Commission of H.M.S. Lancaster,' 36.

⁴⁹³ *The Fleet Annual & Naval Year Book*, ed. L. Yexley, (London, 1909), 38-9.

⁴⁹⁴ 'Sunday in the Navy,' *Naval Review* 9, no. 4 (1921). 619.

⁴⁹⁵ 'Sunday in the Navy,' *Naval Review* 10, no. 1 (1922), 154.

that when it came to religion the Navy did not consider the lower-deck to be competent judges of how, where, or when, they should worship –‘not even whom.’⁴⁹⁶

Two radical proposals were put forward to improve the quality of Sunday for the lower-deck. The first proposal suggested bringing forward Captain’s rounds from Sunday to Saturday directly after the great ‘water-carnival.’ The second was to leave the decision of whether to attend Divine service or not, to the men themselves.⁴⁹⁷ Obviously, Sunday morning ‘Divisions’ the traditional, ceremonial mustering of the men before their captain, was not up for discussion, being the oldest tradition of the service.

In reply, an officer of the ‘old school’ suggested that ‘rest’ in the true sense of the word meant a change in ordinary routine, and in his considered opinion the service Sunday more than met this criteria. Conversely, he considered ‘rest’ in the inferior sense would lead to ‘mental atrophy’ and if men were stood-down then ‘something would need to be done to fill in the blank.’⁴⁹⁸ These sentiments appeared to have been shared by a majority of officers as another correspondent declared that it was ‘accepted as gospel’ that the men should be kept busy, otherwise those who weren’t became troublemakers.⁴⁹⁹ Therefore, in the Navy men were kept as busy on a Sunday as they were on any other day of the week; the very opposite of what the men themselves expected and required from the Sabbath.

Lower-deck hierarchies

Signaller Ashley Claude thought that seamen and stokers ‘never got on’, while marines never mixed with seamen and were not liked by other branches.⁵⁰⁰ Stoker ‘Buck’ Donovan remembered the *Rodney* as an unhappy ship because of the many cliques which kept men apart. Donovan also

⁴⁹⁶ ‘Sunday in the Navy,’ *Naval Review* 10, no. 1 (1922), 155.

⁴⁹⁷ *Ibid*, 154.

⁴⁹⁸ *Ibid*, 153.

⁴⁹⁹ Chris Bailey, Howard, (ed) *Social Change in the Royal Navy 1924-1970: The Life and Times of Admiral Sir Frank Twiss* (Gloucestershire, Sutton, 1996). 21-2.

⁵⁰⁰ A. R. Claude, *I.W.M. 661*, (London, Imperial War Museum Sound Archive, 1975), Reel 3.

suggested that 'you'd never get a stoker and a seaman to be friends.' Donovan recalled that stokers made fun of seamen calling them 'dab-dabs', because as they cleaned or painted the ship they went; 'dab.... dab... dab with their cloths or paint brush.'⁵⁰¹ Claude suggested that the social hierarchy of the lower-deck was in the order of signalmen first, followed by wireless operators, torpedo-men, then gunners, with stokers at the very bottom of the hierarchy.⁵⁰² However, other 'non-combatants' such as E.R.As, writers, the Master at Arms and sick berth attendants also saw themselves as having a superior position within the lower-deck hierarchy.⁵⁰³

Claude shared a common lower-deck belief that stokers did not have to pass any educational test to join the Navy, as a result he stated that stokers were looked down on and regarded as the 'scum of the Navy.'⁵⁰⁴ While clearly mistaken with regards to the educational test, Claude was prepared to accept that stokers 'had a hard time and were worked hard, particularly on coal ships.'⁵⁰⁵ Despite this common assumption, stokers sat the standard naval entry tests of arithmetic and English comprehension that all naval ratings were required to take in the recruiting office prior to being accepted for service. Moreover, illiteracy in the early twentieth century navy may have been more common than was suggested by signalman Claude and not exclusively confined to the stokers' ranks as explained by stoker and assistant schoolmaster Arthur Lilley in chapter two when he declared that 'half the navy were unable to read.'

Naval Cook Reginald Willis remembered the 'arrogance' of seaman ratings 'who always wanted their own way.' Willis recalled that they would threaten the galley staff with being reported to the commander if they didn't get what they wanted. However, Willis looked back fondly on his relationships with stokers and marines who he said were always polite and respectful to ships' cooks. One of the duties of the morning watch cook on a coal-fired ship was to

⁵⁰¹ Alan. Ereira, *The Invergordon Mutiny: A Narrative History of the Last Great Mutiny in the Royal Navy and How It Forced Britain Off the Gold Standard in 1931* (London, Routledge & Kegan Paul, 1981), 39.

⁵⁰² A. R. Claude, *I.W.M. 661*, Reel 3.

⁵⁰³ *Ibid.*

⁵⁰⁴ *Ibid.*

⁵⁰⁵ *Ibid.*

bring up coals from the stokehole in order to light the galley ranges. Willis stated that he never had to do this task himself as stokers or marines would always bring the coals up for him. In addition, he claimed that stokers and marines would also prepare the morning cocoa so that the cook could get on with his other jobs. No doubt by being respectful and helping the cooks out, stokers and marines received favours in return. Willis understood how the practice worked by explaining that if a stoker gave him 'knobs' (coal) 'he would cook his grub.' However, Willis was adamant that he wouldn't ask for, nor do, any favours for seamen.⁵⁰⁶

Remarkably, for an organisation with such a strict hierarchical rank structure and disciplinary code there were certain working practices in the Royal Navy which would not have seemed out of place in civilian factories or dockyards where restrictive practices between certain trades were the norm. As an example, Reynolds complained in his journal that although the stokehole crew had been given a 'make and mend' (afternoon off) by the engineer, the men were not able to relax onboard because as a 'non-executive officer' the engineer 'had virtually no command over the department he was supposed to rule.' Reynolds explained that naval protocol dictated that if an engineer granted a 'make and mend' to his staff which did not coincide with the upper-deck, E.R.As and stokers had to 'hide themselves away' in case they were spotted by seamen officers, 'who ruled the ship.'⁵⁰⁷

Stoker James Dunn, recalled that even though a S.P.O. or a Chief Stoker might be in a ship's boat on service business, the coxswain of the boat (usually a leading seaman) 'would be in-charge-he gave the orders', not the senior engine room ratings in the boat.⁵⁰⁸ This anomaly also applied to engineer officers. As a relatively junior engineer lieutenant serving in the *Hood* during the first year of the Second World War, Louis Le Bailly noted in his memoirs that no (E) (engineering officer) 'could give orders' to shipwrights or sailors, while by

⁵⁰⁶ Reginald Willis, *I.W.M. 758* (London, Imperial War Museum Sound Archive, 1976). 46.

⁵⁰⁷ J. W. Reynolds, *Diary of the Mediterranean Commission of H.M.S. Lancaster*, 'Make and Mend was a half day holiday given to the lower-deck in order for the men to make or repair their clothes.

⁵⁰⁸ J. Dunn, *I.W.M. 769*, Reel 4.

comparison, no E.R.A., mechanic, or stoker 'would take any orders' from a 'Chippie' (Shipwright).⁵⁰⁹

Even in wartime, the hierarchical anomalies remained. In the *Hood*, the First Lieutenant (a commander) was in charge of the ship's damage control organisation. This job required a technical understanding of the construction of the ship together with a detailed knowledge of pumping and flooding arrangements and the ability to correctly shore up bulkheads and hatches using timber to reinforce them after damage. It also required comprehensive knowledge of the ship's electrical, hydraulic and fire-fighting systems so that they could be cross-connected after damage. Le Bailly dryly observed that the knowledge of the *Hood's* first lieutenant in these matters could be written on a 'postage stamp.' Nonetheless, the first lieutenant retained the title of 'damage control supremo' in the *Hood* despite the fact that the engineering department undertook the responsibility for damage control. This resulted in all orders appertaining to damage control being written by the engineers but issued under the first lieutenant's name, thereby maintaining the superior status of the executive branch.⁵¹⁰

Because the seaman executive division 'fought the ship' Stoker Dunn believed they were entitled to regard themselves as the 'military branch' of the Navy. This idea allowed seamen to adopt a 'superior status' towards all other ratings which was mostly felt by stokers.⁵¹¹ Stoker Lilley shared a similar belief to Dunn noting in his memoirs that when stokers were formed up on parade or undertaking rifle practice or general military training a seaman would often be put in charge of the stokers even though there may have been several more senior stokers than seaman in the party.⁵¹²

From his perspective, Le Bailly thought that prior to the Second World War there had been an even greater gap between stokers and seamen than

⁵⁰⁹ L. Le Bailly, *The Man around the Engine*, 51.

⁵¹⁰ Ibid.

⁵¹¹ J. Dunn, *I.W.M.* 769, Reel 4.

⁵¹² A. E. Lilley, *I.W.M.* 750, Reel 4.

between engineering and executive officers.⁵¹³ However, there was one area in which stokers could get their own back and that was by taking on and beating seamen during inter-departmental sport and other competitions such as pulling (rowing) regattas. Stoker Rose recalled that there was real rivalry between the two branches in sport but what the stokers may have lacked in finesse they more than made up for by utilising their 'extra strength' to maximum effect. Rose suggested this was most noticeable in sports which required strength and stamina such as boat pulling and in practice gunnery where the stoker's team invariably beat the seamen in 'loader-drill.'⁵¹⁴

Relationships - Engineering Officers and stokers

Despite his complaint regarding the difficulties of enjoying a make and mend without the authority of the executive department, Reynolds declared in his memoirs, somewhat tongue in cheek, that he was 'never overly concerned' as any free time he had was usually spent in the engine room or stokehole 'toying with crankshafts or hunting down after leaks.' Reynolds observed that this extra work normally made the stokers 'C.B.F,' which was an acronym for 'choke-a-block-full;' meaning that the men had had enough of some particular task, or were generally fed up with the Navy.⁵¹⁵ The fact that stokers were 'overworked' in comparison to seamen was not contested. In describing the need to provide recreation for men of the Baltic Fleet in 1919 an Admiralty memorandum observed:

As leave is extremely limited, it is very necessary to provide occupation for the personnel. This need is greater in the case of seamen than in stokers as their leisure time is greater.⁵¹⁶

Reynolds also resorted to the lesser known acronym 'W.W,' in his memoirs which had a similar meaning to C.B.F. but was a term used only by the engineering department. When a boiler was shut down in harbour for any length of time, unless it was opened up for inspection, repair or cleaning it was always

⁵¹³ L. Le Bailly, *The Man around the Engine*, 45.

⁵¹⁴ R.F. Rose, *I.W.M.* 754, 78-9.

⁵¹⁵ J. W. Reynolds, *Diary of the Mediterranean Commission of H.M.S. Lancaster*, 44.

⁵¹⁶ TNA, ADM 156/94, 'Disaffection in 1st Destroyer Flotilla,' ed. Admiralty (1919).

filled with feed water to the very top of the gauge glass and dosed with oxygen scavenging chemicals in order to reduce corrosion. This action was termed 'water-wedging' (See Illustration 10, below). When a stoker was thoroughly fed up with something he would declare to all and sundry that he was 'W.W,' or 'full-up.'



Illustration: 10 Boiler water-wedged

Source: Crossness Pumping Station Abbey Wood.

The idea that lower-deck men should be kept busy to occupy their minds and prevent them making trouble was not confined to the executive officers of a ship. While serving as a chief stoker in the *Renown*, James Dunn served under an engineer who could always 'find work' for the men to do. As an example, Dunn described how this officer ordered stokers to take down the bulkhead doors in order to strip the paint off them so that they could be burnished, giving stokers yet another cleaning job to do. On another occasion Dunn requested permission for the stokers' football team to have a make and mend in order to play a match only to have his request refused with the reply, 'certainly not, give them some work to do.'⁵¹⁷

Then again, Reynolds had his own view on the usefulness of engineering officers. In his journal he observed that in books of fiction, engineers were presented as brave and fearless individuals, with square jaws and nerves of

⁵¹⁷ J. Dunn, *I.W.M.* 769, Reel 7.

steel. However, he stated that he was sorry to confirm that the 'Navy type' compared with these 'heroes of fiction' were 'a sorry lot.' In his estimation, naval engineers were 'generally nervous wrecks' and the only courage they possessed was 'the Dutch order.' In addition, Reynolds suggested that when anything went wrong such as a breakdown of machinery, the naval engineer would stand with his gloves on like a cat which couldn't catch a mouse, 'shouting at the E.R.As and stokers who did the actual work.'⁵¹⁸

Reynolds observed that while engineers knew all the theory of engineering, they 'never picked up a tool' to help out with maintenance or defect work. This led him to question the reason why engineers were carried in warships in the first place. Having reached the conclusion that a clerk could do the engineering 'book work' that took up so much of an engineer's time, he declared that a warship should only require one engineering officer to supervise the engineering department instead of the seven or eight commonly carried on 'modern' ships.⁵¹⁹ It would appear that the Admiralty was also thinking on the same lines as Reynolds as a 1902 Admiralty memorandum noted:

It has long been a complaint on the part of the Engineer branch that an Engineer officer on board each big ship is employed in clerical duties. It is proposed to remedy this by establishing a non-substantive rating of Engineer's Writer, and the engine-room complement will in future include this rating to be held preferably by men of the stoker class.⁵²⁰

That a job previously considered to warrant the education and training of an engineering officer should be so arbitrarily relegated to a stoker would suggest that engineers were either under employed as suggested by Reynolds, or stokers were credited with more ability and were more highly regarded within their own branch than outside of it.

The qualifications required for this new, non-substantive rate, which attracted a remuneration of six pence per day were given as:

⁵¹⁸ J. W. Reynolds, *Diary of the Mediterranean Commission of H.M.S. Lancaster*, 57.

⁵¹⁹ *Ibid*, 56.

⁵²⁰ 'Memorandum Dealing with the Entry, Training, and Employment of Officers and Men of the Royal Navy and of the Royal Marines (Navy Personnel: Navy and Marines, ed. Admiralty (House of Commons, Cd.1385, 1902). 10.

Ability to keep an engine-room register, including necessary calculations
 Conversant with the Engineer's store accounts
 Must read and write well
 Must have an elementary knowledge of arithmetic, including the first four rules, simple and compound, simple, vulgar, and decimal fractions, and avoirdupois weight.⁵²¹

This was exactly the same criteria required of any first class stoker aspiring to reach the leading stoker rate, therefore most first class stokers would have been eligible to apply for this new non-substantive qualification.

On the other hand, stokers often had excellent relations with their engineering officers. Stoker Rose recalled that the engineers he served with were very good at divisional work and were always ready to help their men by sorting out any service or domestic problems that they could not resolve themselves. In particular, he remembered that while he never had any contact with seamen officers who he thought of as being very 'gentlemanly and unapproachable', he could joke and converse with his engineers while on or off watch.⁵²²

After the Armistice in 1918 Rose found himself serving in the *Cleopatra* as part of the British contingent supporting the 'White Russians' during the Russian Revolution. By then Rose had landed the relatively 'cushy' job of stoker of the ship's motor boat. However, the job was not without its difficulties as oil operated motor boat engines were still a relative novelty at that time with most ships retaining steam launches. While the ship was in Copenhagen with the Admiral onboard Lieutenant Lowe who had charge of motor boats offered to buy Rose a new pair of boat shoes provided he was able to run the boat without it breaking down. Rose duly received his new shoes as promised. Unusually for the time, Rose kept in touch with Lowe after they both left the service in 1920. Lowe obtained a position as the commissioning engineer for a power station in Australia and offered Rose a permanent job; however due to his wife's illness Rose had to decline the offer.⁵²³

⁵²¹ 'Regulations for Examination and Pay of Stokers,' *The Fleet*, (1912). 699.

⁵²² R. F. Rose, *I.W.M.* 754, 81.

⁵²³ *Ibid*, 82.

While serving in the *Hood* Le Bailly set out to improve the lives of the younger stokers by organising evening classes for them which they shared with young artificers. He also obtained permission from *Hood's* commander for stokers to stand on the bridge superstructure when the ship was entering and leaving harbour so that they could begin to understand the problems of ship handling and to see at first hand the effects of making too much smoke. Le Bailly also arranged for his stokers to join the seaman boys on 'banyans' (picnics) and persuaded the ship's welfare fund to pay for coach tours in foreign ports. Through taking the time and trouble to improve their off-watch quality of life, Le-Bailly saw a dramatic improvement in the productivity and efficiency of his stokers, particularly in the disagreeable task of boiler cleaning. In addition, by arranging for his stokers to mix socially with seamen ratings the traditional barriers that had always separated the two branches began to break down and relationships improved to the extent that many young seamen and marines changed over to the stoker branch.⁵²⁴

However, in general, naval officers remained aloof from their men. Montagu Consett joined the Royal Navy as a cadet in 1926 and resigned his commission as a Lieutenant in 1935. In the same year he applied for a commission in the Territorial Army as a 2nd Lieutenant receiving a regular commission on the outbreak of war in 1939.⁵²⁵ For the rest of the war, Consett served in an armoured brigade of the Welsh Guards finally retiring from the Army in the rank of Lieutenant Colonel. Having experienced life as an officer in both services Consett had a unique insight into the differences between the Army and Navy particularly in the way officers and men interacted. Having served in the *York* as a sub lieutenant during the Invergordon mutiny, Consett later reflected that the whole episode had been handled badly by naval officers. Comparing the two services, Consett suggested that naval officers were not as close to their men as officers were to their men in the Army. He voiced the

⁵²⁴ L. Le Bailly, *The Man around the Engine*, 45.

⁵²⁵ Hans Houterman and Jeroen Koppes, *World War Two Unit Histories and Officers: British Army Officers 1939-1945* (2012 [cited 15 April 2012]); cited in http://www.unithistories.com/officers/Army_officers_C02.html.

opinion that in the Army, 'officers fought for their men, whereas they don't in the Navy'.⁵²⁶

Relationships-Stokers and Artificers

On an individual basis, the working relationships between stokers and Engine Room Artificers were generally very good. Each E.R.A. was allocated a stoker who acted as his 'mate' when carrying out defect rectification or maintenance; as a result they often formed close working relationships. Stoker Rose thought E.R.As' were 'always willing to tell you things', however while they enjoyed good working relationships onboard, the hierarchical nature of the rank system did not allow for much contact outside the ship such as socialising together when ashore.⁵²⁷ Stoker Ernest Bullock was 'mate' to an E.R.A. boilermaker while serving in the battle-cruiser *Inflexible* and with thirty-one boilers he remembered that there was 'always plenty of work to do.' However, after a while the E.R.A. began to get on Bullock's nerves and he requested a job change. After the senior engineer intervened the E.R.A. pleaded with Bullock to change his mind with the promise that he would mend his ways. After giving the matter some thought Bullock agreed to give his E.R.A. 'another trial,' which suggests that the working relationships between the skilled and semi-skilled man were not entirely based on the naval hierarchical system.⁵²⁸

Stoker James Dunn considered that stokers had very amicable relationships with E.R.As and could 'learn a lot' by watching or actively helping them carry out repairs and maintenance. E.R.A. William Bruty observed that stokers often felt 'privileged' to be an E.R.As mate because the E.R.A. gave his stoker the opportunity to use tools instead of being relegated to the eternal cleaning duties which usually took up much of a stokers time.⁵²⁹ Bruty also suggested that because men often found themselves in the same watch in the stokehole or engine room for an entire three year commission, the men had to

⁵²⁶ Montagu Charles Consett, *British Officer Served Aboard H.M.S. York During Invergordon Mutiny* (London, Imperial War Museum, 1997), Tape 1.

⁵²⁷ R. F. Rose, *I.W.M. 754*, 80.

⁵²⁸ E.W. Bullock, 'Recollections of Naval Service,' 10.

⁵²⁹ William George Bruty, *I.W.M. 759* (London, Imperial War Museum Sound Archive, 1976), p. 85. 72.

learn to rely on each other. He declared that E.R.As had to place their trust in stokers as every man in the watch had to depend on the other doing his job, much more so than 'those on deck.'⁵³⁰

The relationship between an E.R.A. and his mate often extended outside the machinery spaces. Stoker Sidney Knock recalled that an E.R.As mate would often act as a sort of unofficial 'batman' to his E.R.A. and for a small fee settled at the end of each month, he might undertake to do his dhobying, repair his kit or sling his hammock. In addition, although it was strictly forbidden under the Naval Discipline Act, Knock suggested that monetary loans were also conducted between the two classes of men under mutual agreement. Moreover, despite the fact that the E.R.A. was very much the better paid of the two, Knock revealed that it did not necessarily mean that he was the one on the lending end of the arrangement.⁵³¹

The Mechanician scheme

During his tenure as Second Sea Lord during 1902-1903 Admiral Fisher oversaw many reforms in the Navy. The first of these initiatives known as the Selborne Memorandum unified officer training and finally integrated engineer officers with the executive branch of the Navy. The memorandum also directly affected engineering ratings and a subsequent 1903 Circular Letter established the rating of mechanician, C.E.R.A. and boy artificer. This was followed in 1905 by the Cawdor Memorandum which brought stoker ratings into line with the standard rank system of the Navy. However, the introduction of the mechanician rate severely affected the working relationship enjoyed between stokers and E.R.As. The rationale for the mechanician scheme was outlined in a proposal which asked for a committee to report on methods 'for providing warrant officers capable of taking charge of the stokehold and engine-room watches in order to relieve the more highly trained officers of the ship from the routine duty of engine-room watch-keeping.'⁵³²

⁵³⁰ W. G. Bruty, *I.W.M.* 759, 82.

⁵³¹ Sidney, Knock, *Clear Lower-Deck.* 80.

⁵³² 'Statement of Admiralty Policy,' ed. Admiralty (London, H.M.S.O., 1906). 4.

The Admiralty accepted the subsequent proposal to train selected stokers to undertake this role and the first mechanics entered the fleet in 1906.⁵³³ The introduction of the mechanic rate was initially welcomed by stokers as it showed that amongst their ranks were men who had higher potential. It also offered a limited opportunity for a small number of selected stokers to aspire to warrant officer rank as the stoker branch was the only branch of service which did not enjoy that privilege. Selection for promotion to mechanic was available to leading stokers not over the age of thirty years who possessed technical aptitude and ability with the requisite seagoing experience. Men selected were required to sit the same educational examination as that undertaken by artificer entrants thereby setting a high bar for any aspiring applicant.⁵³⁴ Mechanic candidates undertook a two year training programme onboard the *Indus II* at Devonport which was the ancient hulk ex-*Temeraire* of 1876.

However, E.R.As were strongly opposed to the mechanic scheme on the grounds that the Admiralty had usurped them and replaced them with 'semi-skilled' stokers. E.R.As also voiced concern over the fact that in time a warrant mechanic could find himself in charge of chief artificers, men who saw themselves as being superior by virtue of their formal apprenticeships and training. This issue brought the internal 'class-war' between E.R.As and stokers out into the public domain. In 1911 the E.R.As' society forwarded a memorandum to members of parliament which argued that with regards to the mechanic scheme, the partially trained mechanic, 'if such he can be called,' is set in authority over the fully trained and specialised mechanic.⁵³⁵

E.R.As received support from the Member for Parliament George Barnes who, as a former mechanic, had completed a full apprenticeship followed by twenty-five years at his trade. Barnes argued that by the expenditure of public money the Navy was 'attempting to cram into those poor men's heads (stokers)

⁵³³ 'Statement of Admiralty Policy,' ed. Admiralty, 1906).

⁵³⁴ TNA, ADM 7/941, 'New Scheme of Training Officers and Men,' 22.

⁵³⁵ A Sympathiser, 'Stoker Ratings V. Engine Room Artificers: Their Claims and Counter Claims,' *The Fleet* (1912), 654.

knowledge which can be of no use to them or to anybody.⁵³⁶ Commenting on these charges in *The Fleet*, a supporter of the stokers using the nom de plume *Sympathiser* suggested, 'the E.R.A. is a very much overrated individual and that, so far from the stokers encroaching on the work and privileges of the E.R.A., the reverse is the case.'⁵³⁷ Moreover, the writer noted that from the beginning of the E.R.A. branch they had been allowed to do work which, 'by right, experience and custom belonged to the stokers and which his own trades union would have forbidden him to do in civil life.'⁵³⁸

Using the working practices of the railways as an example the correspondent pointed out that in the great locomotive yards the artisan never handled a locomotive engine until it came to rest in the shed. He argued that engine drivers attained their position through being slowly promoted through the ranks of engine-cleaner and fireman until after many years of experience they qualified as a driver. Turning the argument around, it was suggested that had a qualified coppersmith been asked to drive an engine in civil life he would undoubtedly have refused, whereupon his union would have backed his actions to the point of a strike.⁵³⁹ Indeed, Stoker Sidney Knock recalled that many excellent E.R.As had suffered punishment for refusing to undertake duties 'outside' of their respective trades.⁵⁴⁰

The *Sympathiser* summed up his feeling towards the E.R.As position on this issue by observing:

The whole objection of the engine-room artificers to the stoker ratings attaining to the ranks of mechanic is based on the assumption that the stokers as a class are of a lower order of intelligence than themselves. This the stokers indignantly repudiate!⁵⁴¹

The issue of mechanics versus E.R.As was re-visited in *The Fleet* the following year and, while the author was not acknowledged, the article closely followed the arguments put forward by the *Sympathiser*. This anonymous writer

⁵³⁶ Hansard, 'Navy Estimates for the Year 1910-11, with Explanation of Differences,' ed. Admiralty (House of Commons 1910), 897-9.

⁵³⁷ A. Sympathiser, *The Fleet*, 654.

⁵³⁸ Ibid.

⁵³⁹ Ibid, 655.

⁵⁴⁰ Sidney, Knock, *Clear Lower-Deck*. 24.

⁵⁴¹ 'A Sympathiser,' *The Fleet*, 655.

may well have been the paper's editor, Lionel Yexley, who despite his seaman background had long been a vocal supporter of stokers. Using language such as 'this sordid fight' and 'violent and too often scurrilous attacks on stokers', the article suggested that the argument within the fleet between these two groups had escalated to the extent that it was in danger of getting out of control. The author was in no doubt that the attacks on stokers were being made through the E.R.As society. This society was arguably the most powerful of the lower-deck societies and one which was very successful in publicising its issues and requests, which it did through its links to various engineering trade unions and sympathetic members of parliament.⁵⁴²

E.R.A. Harold Wright joined the Navy in 1909 as one of the early boy apprentices. He remembered that artificers 'kept to themselves and always kept apart from other branches.' Nonetheless, he recalled having 'very good relationships' with S.P.Os and Chief Stokers and always worked well with them on outside machinery.⁵⁴³ Wright remembered that there were 'problems and friction' when mechanics were introduced. He recalled when the first mechanics joined the *King George* and the feeling at the time was that neither E.R.As or the ship's engineers were keen on having them. Wright considered that mechanics were not given a fair chance in the *King George*. As an example, he claimed that mechanics were never given 'technical' jobs only the dirty jobs E.R.As were happy to dispense with such as working on boilers, valves, and engine room lifts.⁵⁴⁴

It is difficult to see why E.R.As were so determined to undermine the introduction of the mechanic rate. An examination of the following table (See Table 3: p. 200) reproduced from 1912 manning records suggests that mechanics were very much in the minority, therefore, complaints that E.R.As had been usurped hardly appear justified.

⁵⁴² 'The Engine Room Artificers Latest: Another Attack on the Stokers,' *The Fleet*, February 1913. 40-1.

⁵⁴³ H.S. Wright, *I.W.M. 9072*, (London, Imperial War Museum Sound Archive), Audio Tape, 3 Reels, Reel 2.

⁵⁴⁴ *Ibid.*

Table 12: E.R.A and Mechanician pay scales

<u>Rank</u>	<u>Numbers</u>	<u>Pay</u>
Warrant Mechanician	13	7s 6d-10s 6d
Mechanician (Chief Petty Officer)	483	4s 6d-6s 6d
Stoker Class (Petty Officers and men)	36,802	1s 8d-5s
Warrant Chief Artificer Engineer	109	11s 6d-13s 6d
Warrant Officer Artificer Engineer (C.P.O.)	479	8s 6d-10s 6d
Chief Engine Room Artificer	1073	7s-7s 6d
Engine Room Artificer (C.P.O.)	3267	5s 6d-6s 6d. ⁵⁴⁵

From analysis of the data shown above it can be determined that the two classes of E.R.A. warrant officers combined outnumbered warrant mechanics by 45:1, while C.E.R.As outnumbered chief mechanics by almost 9:1. These figures suggest that mechanics were very definitely in the minority compared to E.R.As and therefore could not at any time have been considered a real threat to their existence.

When compared to every other branch, the number of stokers qualifying for warrant officer rank showed a more depressing picture. The signals branch for example, had only 4,706 men but seventy-five warrant officers giving them a ratio of 63:1, while the even smaller writers' branch had a better ratio of writer to warrant officer of 22:1. By comparison, stokers who could only achieve limited access to warrant rank through the mechanician scheme faced a 2,868:1 chance of achieving warrant rank.⁵⁴⁶

When making comparisons by earnings, the salary of the warrant officer mechanician was set at the level of a C.E.R.A., a man who was a rank lower than him while the chief mechanician was paid one shilling less a day than the

⁵⁴⁵ 'A Sympathiser,' *The Fleet*, 655.

⁵⁴⁶ 'Return of Numbers Borne in H.M. Fleet,' ed. Admiralty (1918).

equivalent E.R.A. Therefore, it would appear that despite their protestations, the Admiralty had no intention of pitting the mechanician against the E.R.A. but was merely providing the means to relieve E.R.As from their watch-keeping duties in order to allow them to attend to their respective trades. Their qualified technical status as tradesmen was, after all, the reason why E.R.As demanded 'special' status within the Navy.

In 1945, some forty-three years after the introduction of the mechanician rating, a serving engineer officer observed:

What is the bait that persuades a man to become a stoker? I cannot believe that every stoker in the service did so purely from a love of mechanics. If he was looking for promotion, I can only assume that he had his eyes tight shut. It seems to me an admission that the warrant mechanician was introduced as a 'sop' to the stokers and not as a requirement for the service. I offer two suggestions. Firstly, that suitable stokers who pass their leading stoker's course sufficiently well should be allowed to turn over to the Artificer branch. Secondly, and more urgent: that the rank of warrant stoker is needed and should be introduced on an exactly similar basis to that of warrant officers from the Seamen branches. If there is a need for warrant cooks and stewards there must be one for warrant stokers.⁵⁴⁷

Special privileges

To improve their position, the artificers branch successfully lobbied the 1919 Jerram Naval Pay Committee for increased 'watch-keeping allowances.' The artificers society demanded additional payments for gaining the certificate of competency for taking a watch in the engine-room of a small ship and for taking charge of the engines. Both of these requests were granted and E.R.As received one shilling per day for taking charge of a watch and a further shilling for taking charge of an engine room. The committee upheld these requests on the basis that 'watch-keeping' was an additional qualification in addition to their trade qualification. However, the committee refused to make the same award to mechanicians on the grounds that watch-keeping was 'the main purpose for which the class was introduced.'⁵⁴⁸ E.R.A. Wright remembered that his mess

⁵⁴⁷ Nico, 'Warrant Stokers,' *The Naval Review* 33, no. 4 (1945). 306.

⁵⁴⁸ Martyn Jerram, 'Report of Naval Pay Committee: Recommendations in Regard to Pay Allowances and Pensions of Royal Navy and Royal Marines,' ed. Admiralty (His Majesty's Stationery Office, 1919). 6.

specifically selected an outspoken C.E.R.A. to represent them at the Jerram Committee and claimed that they had 'done very well out of it.'⁵⁴⁹

From their introduction in 1869, E.R.As were treated as a 'special case' on the lower-deck, receiving privileges that were not offered or available to any other rating regardless of their rate. A contemporary report noted that E.R.As had particular requirements:

E.R.As who have served their apprenticeship as fitters or boiler makers, and have thus placed themselves in a certain position of independence, join the Naval Service at an age of between 20 and 30, having already contracted the habits of their class on shore; they have been accustomed to regular limited hours of work and to pass their Sundays at home. On returning from their daily work they expect to find their meals ready, their house cleaned for them and themselves relieved from all supervision and work other than that of their trade.⁵⁵⁰

As a result, the report noted that E.R.As found themselves living amongst men who had, by virtue of their own upbringing, become used to a mode of living which E.R.As considered a real hardship. In particular, E.R.As disliked having to clean out their mess and prepare their own meals, while they also resented being subject to the control of the ship's Master at Arms with regards to obtaining leave to go on shore

In the Royal Navy all petty officers and chief petty officers traditionally messed together by rate, regardless of any differences in branch. In a typical chief petty officers' mess for example, the chief stoker would mess with the chief gunner, and cook etc. However, E.R.As demanded, and were given, permission to mess together, at once putting them in a privileged and superior position to other men. As E.R.A. William Bruty observed, 'the Navy was not a mixed society, E.R.As had their own society.'⁵⁵¹ In addition, E.R.As were accorded the privilege of having their own mess-man (usually a stoker) who cleaned and tidied the mess, brought their tot (rum ration) and food, and slung their hammocks. On the other hand, Bruty was prepared to admit that by becoming a segregated society E.R.As attracted a considerable amount of envy

⁵⁴⁹ H.S. Wright, *I.W.M.* 9072, Reel 2.

⁵⁵⁰ 'Re-Inventing the Wheel? Précis of Reports from Commissioners, Inspectors & Others 1877: Navy Engineers,' *Journal of Naval Engineering* 36, no. 1 (1995).137.

⁵⁵¹ W. G. Bruty, *I.W.M.* 759, 75.

from the rest of the lower-deck.⁵⁵² The 1912 Magna Charta (lower-deck petition) highlighted the different standards enjoyed by E.R.As and the envy this created amongst the lower-deck. Item number (11) requested:

That Mess Attendants be provided for Chief and Petty Officers by scale, under the definite authority of the King's Regulations, as is now allowed for Engine Room Artificers.⁵⁵³

Bruty's perception of the differences that existed between E.R.As and the rest of the lower-deck was that all sections of the lower-deck aspired to the same privileges as E.R.As. He observed, 'that was the catch phrase-same as the E.R.As.'⁵⁵⁴ Another privilege enjoyed by E.R.As included the ability to be able to 'come and go' as they pleased. Bruty recalled that while all other men would have to be inspected by the officer of the day before proceeding ashore and when returning onboard, E.R.As 'were relieved of that sort of thing, they didn't fall in on deck, they weren't marched or ordered.' To proceed ashore the E.R.A. paid his respect to the officer of the day by saluting and requesting permission to proceed and then he ticked his name off on a slate, a ritual which Bruty thought was 'very nice.'⁵⁵⁵

Relationships-Stokers and Seamen

From the earliest days of steam, seamen and marines were required to supplement stokers in the stokehole during times of prolonged and intensive steaming when there was a great demand on the stokers. They were used to supplement the coal-trimmers in coal bunkers and to transport coal from the bunkers to the furnaces, a duty for which they were entitled to the equivalent daily stoker rate of pay. While marines apparently relished this type of work and many seamen may have welcomed the opportunity to earn extra pay, the

⁵⁵² W. G. Bruty, *I.W.M.* 759, 75.

⁵⁵³ TNA, ADM 116/1661, 'Revised Rates of Pay, Allowances and Pensions for Naval Ratings and Royal Marines,' ed. Admiralty (Admiralty, 1912). Appendix, Naval Magna Charta for 1912, 17.

⁵⁵⁴ W. G. Bruty, *I.W.M.* 759, 74

⁵⁵⁵ *Ibid*, 75

demands of working in the stokehole together with the lower social status this attracted would have undoubtedly caused resentment to many seamen.

During the so called 'battle of the boilers,' when the new 'Bellville' boiler was tested alongside the standard naval boiler, a number of trials were conducted. In one long distance steam trial in 1903 the Bellville boiler fitted *Hyacinth* was pitted against the *Minerva* completed with the standard naval cylindrical boiler. The trials required both ships to steam at full speed from Portsmouth to Gibraltar and return. During the trial, coal and boiler feed water consumption was measured against indicated horse power. As this trial would have placed a great strain on the stokers of each ship they were supplemented with seamen, *Hyacinth* receiving twenty-two seamen and *Minerva* thirty-nine.⁵⁵⁶

While the trial was designed to measure the relative worth of two different technologies, the healthy competition that existed between ships no doubt made this a trial of strength and endurance which would have stretched the stokers, let alone the seamen bringing up the coals. However, the animosity which existed between the two largest branches of men on the lower-deck reached new heights when an initiative pushed forward by Admiral Fisher introduced a requirement for seamen to undertake a compulsory thirty-day course in mechanical tools and stokehole work prior to sitting the examination for able-rate. The rationale for this initiative was discussed earlier in chapter two. However, it appears from the syllabus (See Appendix 10), that the type of mechanical instruction given to ordinary seamen was far more detailed than that initially proposed by Fisher.

The syllabus prescribed fifteen days training in the use of mechanical tools including levers, jacks, the Spanish windlass, spanners and chisels etc. It also detailed the need for instruction in the working of watertight doors, sluices, fire-mains and ventilation systems. Instruction was to be under the tuition of a chief or leading stoker. Seamen were also required to participate in 'ordinary' stokehold day cleaning work including sweeping boiler tubes and backs. To

⁵⁵⁶ Navy (Health), '*Statistical Report of the Health of the Navy for the Year 1902*,' (London, 1903), 14-24.

complete their mechanical training seamen were required to carry out routine firing duties in the stokehole while undertaking regular watches under 'easy steaming conditions' either in harbour or at sea. While undertaking their training, seamen were to be considered 'in every respect, attached to the engine room department.'⁵⁵⁷

Seaman Edward Pullen qualified for able seaman while serving in the *Caesar* but had to pass a six week stokehole training course before he could be rated up. During action, Pullen's action station was in an upper-coal bunker with another seaman; their job was to pass coal down to the lower bunker.⁵⁵⁸

Seamen such as Pullen can have been under no illusions as to their status while working in the stokehole. *The Manual of Seamanship* specifically warned seamen:

Do not work any valve, wheel, lever or fitting connected with the machinery, boilers, or W.T. (watertight) doors, unless you understand what you are doing, and do not meddle with what does not concern you.⁵⁵⁹

The regulations requiring seamen to undertake 'stoking-duties' appear to have been a continuation of an earlier trial in which stokers were employed on the upper-deck. In 1890, the Chief Inspector of Machinery proposed that every ship commissioned into the Navy should have a supplementary party of stokers drafted to the ship. This 'extra watch' of stokers would then be used to relieve the watch below so that each watch in turn could be employed on deck and taught 'combatant duties.'⁵⁶⁰ A contemporary report described the proposal as being 'warmly welcomed' by the Admiralty. As a result, twenty-two stokers were drafted to the *Aurora* supplementary to her normal complement. With the addition of these extra stokers it was expected that the ship's stoker complement could be trained in the ordinary working of the ship without interfering with 'normal' day-to-day work down below. Unfortunately, there are no reports as to the success or otherwise of this trial. It is likely that it was

⁵⁵⁷ TNA, ADM 116/1680, 'Training of Young Seamen and Boys in Seagoing Ships.

⁵⁵⁸ Edward Pullen, *I.W.M. 692* (London, Imperial War Museum Sound Archive, 1975), Audio Tape 27 Reels, Reel 22.

⁵⁵⁹ Cecil H Fox, Lt RN, *Manual of Seamanship for Boys and Seamen of the Royal Navy 1904*, vol. 1 (London, Eyre and Spottiswoode, 1905).

⁵⁶⁰ 'Foreign Naval Notes,' *The New York Times*, 18 January 1891.

abandoned due to the additional expense of over-manning and the difficulties of recruiting and training sufficient stokers to provide normal complements in an already expanding fleet.

The Lower-deck reform movement

The subject of lower-deck welfare representation was a difficult concept within the Royal Navy because 'King's Regulations and Admiralty Instructions' which laid down the rules and regulations for officers and men on all matters that concerned the maintenance of good order and naval discipline, specifically forbade any complaint being made by 'combinations of persons.'

Article 11 of Kings Regulations and Admiralty Instructions (1913) stipulated:

Combinations: All combinations of persons belonging to the Fleet formed for the purpose of bringing about alterations in the existing Regulations or customs of His Majesty's Naval Service, whether affecting their interests individually or collectively, are prohibited as being contrary to the traditions and practice of the Service and injurious to its welfare and discipline. Every person is fully authorised individually to make known to his superior any proper cause of complaint, but individuals are not to combine either by the appointment of committees or in any other manner to obtain signatures to memorials, petitions or applications, nor are they collectively to sign any such documents.⁵⁶¹

Therefore, the idea of collective complaints, appeals or representations made by groups of men or branch committees was effectively prohibited on point of punishment under the naval discipline code. In addition, the regulations ensured that complaints from individuals were kept to a minimum through the act which stated that if a man made a complaint without reasonable grounds he was:

Liable to be considered as having made a frivolous or vexatious complaint, which is an act to the prejudice of good order and naval discipline.⁵⁶²

⁵⁶¹ 'The King's Regulations and Admiralty Instructions for the Government of His Majesty's Naval Service 1913,' ed. Admiralty, 2: vol. 1 (London, HMSO, 1913). Chapter 1, paragraph 11, 5.

⁵⁶² Ibid, Chapter 8, 5.

This meant that any man considered by his commanding officer to have made an unjustified complaint would have been liable to punishment. As a commanding officer's word was law, it would have taken a man with a particularly strong character to make a complaint about poor food and pay or the lack of leave. Therefore, service regulations effectively stifled any complaints from the lower-deck, while they also prevented men from bringing any matters with regards to their conditions of service to the notice of the Admiralty Board.

As a consequence, the only way of circumventing the regulations was through the submission of a petition to the Admiralty through a sympathetic civilian or M.P. However, as any joint complaint immediately contravened article eleven of K.R.s & A.I.s, this procedure could only be conducted through an anonymous written petition which, due to the nature of potential repercussions, was a measure usually only conducted by warrant officers or other senior ratings via their individual or collective branch societies.

Anthony Carew noted that the system of petitioning was deeply rooted in the Navy, beginning with a petition from the seamen of the fleet in 1654 together with further petitions in 1796 and 1858. However, after a petition by all the lieutenants of the Channel Fleet in 1860, the Admiralty put an end to petitioning by amending the naval discipline act to include article eleven which prohibited the making of representations by 'combinations' of men discussed earlier.⁵⁶³ It was from this amendment that lower-deck branch societies began to emerge from the earlier death benefit and mutual aid societies which had existed in the Navy for some time.

Death benefit and mutual aid societies

Death benefit and mutual aid societies were formed on the lower-deck in the late nineteenth and early twentieth centuries in response to the failure of the Admiralty to grant pensions to the dependants of married men who died in service, despite the fact that officers' dependants were granted service

⁵⁶³ A. Carew, *The Lower Deck of the Royal Navy 1900-39*, 2.

pensions if in need.⁵⁶⁴ Registered friendly societies allowed members to raise subscriptions to pay for sickness pay or to pay for the burial costs of deceased members, thereby alleviating the burden from the family of the deceased. David Neave described English Friendly Societies as the 'largest and most representative working-class organisation' in late nineteenth century Britain.⁵⁶⁵ It is surprising then that the naval lower-deck, bereft as it was from an official or collective voice, did not embrace these societies as a means to providing a platform from which it could lobby for improved service conditions.

The earliest of the naval friendly societies was the Naval Warrant Officers' Friendly Society originally formed in Devonport in 1792. Seamen petty officers later combined to form a unified branch society which had representatives in each of the three home ports and while it only attracted around 3,000 members, it spoke with one voice when it came to making class appeals. By comparison, the stokers' branch was anything other than unified. Three separate friendly societies for different rates of stokers were formed, with two societies established in Portsmouth and one in Devonport. Initially, there did not appear to have been any interest from the Chatham stokers in establishing a stokers' friendly society in that home port. The first to become registered was the 'Royal Naval Leading Stokers' Burial Society' which registered under the Friendly Societies Act 1875 on the 12th June 1885 with its office address given as the Nelson Tavern, Portsmouth. Under its constitution the aim of the society was to:

Raise a fund by entrance fees, subscriptions and interest on capital, for the mutual relief of members in time of sickness, and to provide a decent internment at the death of a member or a member's wife⁵⁶⁶

Members on the 'active' list contributed a monthly payment of 1s, while pensioned members contributed 1s 6d out of which 1d was taken for management of the society. Sick benefits were paid out at the rate of 12s for the

⁵⁶⁴ A. Carew, *The Lower Deck of the Royal Navy 1900-39*, 2.

⁵⁶⁵ David Neave, *The Friendly Societies in Great Britain*, in *Social Security Mutualism: The Comparative History of Mutual Benefit Societies*, ed. Marcel van der Linden (New York: Bern, 1996).

⁵⁶⁶ TNA, FS 15/218, 'Royal Naval Chief Stokers, Leading Stokers and Stokers Sick Benefit and Burial Society,' ed. Friendly Societies (1885).

first twenty-six weeks; a figure which was set at the national average for towns and cities outside London.⁵⁶⁷ For the following twenty-six weeks, sick pay was reduced to 6s and then to 3s for any time thereafter.

The rules of the society specified that any member in receipt of sick pay who was found to be:

frequenting public houses, or found gambling, fighting or doing anything likely to hinder his recovery such as refusing to see the surgeon, will be liable to forfeit his sick pay.⁵⁶⁸

The death benefit was set at £12 for members and £6 for their wives. In 1888 the society opened up to all rates within the stokers' branch including mechanics. Contributions to death benefits were reduced to 7d a month while an entrance fee was introduced according to age to take account of differences in earnings between members so that those who earned more, paid more.⁵⁶⁹ The second and largest of the stokers' benefit societies was registered in Portsmouth in 1887 and by 1911 had 2,000 registered members with a healthy benefit fund of £11,800. The last friendly society to be founded by stokers and the only one to be formed in Devonport registered in 1900. However, it struggled to attract members and by 1915 it only had 296 registered members with a mutual fund of £431.

Prior to the First World War the numbers of stokers registered as members of friendly societies began to decline. In 1914 there were 40,000 men serving in the stokers' branch including mechanics, but only 1,600 of them were registered as members of one of the three stokers' friendly societies.⁵⁷⁰ There are a number of reasons for this decline. Nicholas Broten argued that ageing memberships and declining popularity for mutual schemes with younger men forced insurers into financial distress and tacit support for state insurance

⁵⁶⁷ 'Friendly Societies, Workmens Compensation Schemes, Industrial and Provident Societies, and Trade Unions: Reports of the Chief Registrar of Friendly Societies,' (HMSO, 1911). 21.

⁵⁶⁸ TNA, FS 15/218, '*Royal Naval Chief Stokers, Leading Stokers, and Stokers Sick Benefit and Burial Society*'.

⁵⁶⁹ *Ibid.*

⁵⁷⁰ '*Navy Estimates with Explanation of Differences*,' 1914.

schemes.⁵⁷¹ The introduction of the National Insurance Act in 1911 by the Liberal government may also have swayed men to relinquish membership of their mutual society.

The Portsmouth Sick Benefit and Burial Society would appear to support Broten's argument with regards to an ageing membership. By December 1915, the society was reduced to 165 members. An examination of the Friendly Societies' annual return for the year reveals that out of the 165 members only twenty-two were still young enough to be on 'active service.' By default, the majority of members must have been 'retired' men, probably naval pensioners employed in the dockyard.

Then again, these results appear to fall into the national pattern for membership of friendly societies, whereby the twenty to fifty year age group showed a decrease of 3.4 per cent in national membership over the period 1905-1910.⁵⁷² It is to be expected that over a period of time members of naval friendly societies would retire from 'active' service and probably wish to remain as paid up members of the society, to be replaced by younger serving members. In point of fact, the regulations for one of the Portsmouth societies specifically stated that membership was restricted to an unlimited number of men 'actually serving on the active list.'⁵⁷³

In 1914, Lionel Yexley attended a meeting of the Portsmouth Sick Benefit and Burial Society where he was introduced as 'the champion of our cause.'⁵⁷⁴ In his address, Yexley announced that for the first time in naval history stokehole and engine room personnel had exceeded 40,000 men, outnumbering seamen by 1,265 men. While congratulating the assembly, Yexley issued a warning that this should be considered the 'high water mark' for

⁵⁷¹ Nicholas Broten, *From Sickness to Death: The Financial Viability of the English Friendly Societies and Coming of the Old Age Pensions Act, 1875-1908*, (London, London School of Economics, 2010), 1.

⁵⁷² *Friendly Societies, Workmen's Compensation Schemes, Industrial and Provident Societies, and Trade Unions*, 10.

⁵⁷³ TNA, Friendly Societies, *Royal Naval Chief Stokers, Leading Stokers and Stokers Sick Benefit and Burial Society*.

⁵⁷⁴ L. Yexley, 'Mechanician Chief & Stoker Petty Officer's Benefit Association Minutes of Monthly Meeting,' *The Fleet*, no. 105, vol. 10, (January 1914), 29.

the engine room branch. Yexley correctly predicted that as more oil-firing ships were introduced and the labour intensive coal-burners were withdrawn, the need for large numbers of stokers would reduce.

By 1919 Yexley's prediction had proved correct as the stokers' branch had reduced to 30,000 while the seamen branch had increased to 47,000. Nevertheless, Yexley suggested that oil-firing could work to the advantage of stokers by elevating them into work of a 'higher nature.' With this in mind, Yexley warned that it would be the task of the stokers' societies to monitor future developments in order to ensure that the stokers as a branch; 'reaped every advantage due to them from the higher nature of the work they would be called upon to do.'⁵⁷⁵

In his annual report, the Chief Registrar observed that it was a 'universally recognised fact' that sickness increases with age. As a consequence he suggested that for a friendly society to prosper and stay solvent while having the funds to meet its commitments to its members, it would need to store up reserves contributed by the youth of its membership.⁵⁷⁶

With dwindling membership, ageing members and a lack of new blood, stokers friendly societies slowly wound up. Young men at the beginning of their service would have surely been put off from joining a society in which the majority of its members were retired from active service as in the case of the Portsmouth society described above. This would have been further emphasised by a lack of more experienced men joining for the same reason, thereby leaving a vacuum which precluded a continuity of membership. Another reason for the demise of friendly societies can be attributed to the First World War. In 1931 a paper addressing the causes of the 'disturbances' at Invergordon, claimed that casualties amongst men of the lower-deck during the war, 'were so great that

⁵⁷⁵ L. Yexley, *The Fleet*, no. 105.

⁵⁷⁶ 'Friendly Societies, Workmen's Compensation Schemes, Industrial and Provident Societies, and Trade Unions,' 20.

there were insufficient funds in the respective friendly societies to cope with claims.⁵⁷⁷

Stoker Ernest Bullock served in the *Inflexible* at the Dardanelles and recalled that when the ship went into 'action' two watches closed up in every compartment down below.⁵⁷⁸ Moreover, when the ship went to 'abandon ship stations' only the second watch below were allowed to go to their abandon ship station, the original watch had to remain below until the very last minute. When the *Inflexible* struck two mines at the Dardanelles, Bullock recalled that he 'tossed a coin' with his opposite number to see who would go up top to prepare to abandon ship and he won, leaving his friend with a 'pang feeling that all, or none, should have to remain below.'⁵⁷⁹ Conditions in the Kaiser's Navy during action were exactly the same for German stokers. A post action report from an unnamed stoker who had served in the *Kaiser* during the Battle of Jutland also described how the stokers below were 'completely cut-off' from the rest of the ship during action as all the bulkheads were closed down.⁵⁸⁰

The Devonport based Royal Naval United Stokers' Sick Benefit and Burial Society was the last to be registered but the first to be dissolved on 2nd October 1916.⁵⁸¹ This was followed in October 1917 by the Portsmouth Sick Benefit and Burial Society. However, while ceasing to enjoy the privileges of a registered friendly society, the directors of the society re-registered it as a branch of the United Ancient Order of Druids Friendly Society under the name, 'The Royal Naval Lodge of Druids 1026.'⁵⁸² Former chief stoker James Dunn, recalled that in the inter-war years, Devonport was a 'Buffalo port', (Royal Antediluvian Order of Buffaloes), an international philanthropic and charitable society, while Rosyth was also known as a 'hot-spot for the Buffs.' Dunn

⁵⁷⁷ TNA, ADM 116/2867, '*Representation of Grievances by Men of the Royal Navy*,' ed. Admiralty (Admiralty, 1931), enclosure no.7 to Rear Admiral (S) No.004 of 15th December 1931. 2.

⁵⁷⁸ E.W. Bullock, '*Recollections of Naval Service*,' 13-4.

⁵⁷⁹ *Ibid.*

⁵⁸⁰ 'Stoker's Work in Battle: Toiling in Heat, He Learned Fight Progress by Bulletins,' *The New York Times*, June 12 1916.

⁵⁸¹ 'Friendly Societies Act 1896: Devonport Royal Naval United Stokers' Sick Benefit and Burial Society, Advertisement of Dissolution by Instrument,' *The London Gazette*, 10 October 1916.

⁵⁸² Friendly Societies Act 1896: '*Devonport Royal Naval United Stoker's Sick Benefit and Burial Society*.'

claimed that membership of this secretive society which conducted meetings behind closed doors; was essential in barracks if a man wished to change a duty, his job, or even to avoid a draft to an unwanted ship. On the other hand, membership of the order had no influence onboard a ship, 'there was no place for it.' Dunn recalled that during the pre-war years membership of the 'Bufs' was popular amongst the lower-deck although he stated that he was not aware of any great influence from Freemasonry.⁵⁸³ After the 1931 mutiny at Invergordon the Admiralty banned Buffalo Lodges from holding meetings onboard ships as naval intelligence warned the Admiralty that the mutiny had been planned in 'secret lodge meetings.'⁵⁸⁴

On the other hand, stokers were not unique in being unable to form a collective society. Anthony Carew noted that at its height, the lower-deck mustered some fourteen separate societies although not all of them were registered, while many were secretive with regards to their aims and membership. In addition, even when a single representative society formed, there was usually a dispute between branches in the separate home ports which divided the membership. For example, the Chief Petty Officers' Society attracted men from all three home ports and successfully lobbied for an increase in pension rates. However, once the objective was reached and without any other common aims, the society became divided and formed three separate splinter groups.⁵⁸⁵

The better educated men of the lower-deck were the most successful in organising branch societies and as a consequence reaped the benefits of their individual petitions. E.R.As and writers attracted one hundred per cent membership for their societies while men belonging to the sick berth, electrical artificers, shipwrights, and joiners' branches also enjoyed high rates of society membership. Stokers and marines had the lowest membership of any branch society with just thirty-three per cent of stokers and only thirteen per cent of marines belonging to a society.⁵⁸⁶

⁵⁸³ J. Dunn, *I.W.M.* 769, Reel 4-5.

⁵⁸⁴ A, Carew, *The Lower Deck of the Royal Navy 1900-1939*, 166.

⁵⁸⁵ *Ibid*, 10.

⁵⁸⁶ *Ibid*, 239.

There were many false starts during the last decade of the nineteenth century when attempts were made to bring the various branch societies together in order to seek improvements to service conditions. In 1893 spokesmen representing warrant officers, stokers, painters and chief petty officers met in Portsmouth to discuss the idea of bringing all of their branch societies together into one federation, although no decision was reached. However, a breakthrough in the means to publicise the plight of the lower-deck outside the service became available in 1898 when Lionel Yexley became editor of the new newspaper the *Bluejacket and Coastguard Gazette*. Yexley's aim from the start was to give maximum publicity to the serious grievances that existed on the lower-deck.

In 1904 a general petition entitled *The British Navy-Improvements Needed* was published purporting to be issued by lower-deck societies although it was actually the work of William Behenna a chief writer and secretary to the Chief Petty Officers' Society and vice-president of the influential Writers' Society. In order to protect individual men the petition was issued from Cardiff by a sympathetic civilian shipping clerk. After being published in the *Naval and Military Record*, an accompanying editorial dubbed the petition the '*Magna Charta*', a name which all subsequent appeals from the lower-deck were commonly termed. However, while arguing that the appeal was badly written and made little overall impact, Carew saw its significance as being the fact that it had been issued at all. Furthermore, by attempting to bridge the divisions between the various societies the appeal was considered to have been a landmark in the lower-deck reform movement.⁵⁸⁷

Lower-deck representation

One of the main requests included in the 1912 lower-deck Magna Charta was the right to petition the Admiralty through commanding officers, (See Appendix 11). With regard to the preparation of the Magna Charta, Yexley observed that from the first submission of the lower-deck loyal petition in 1904

⁵⁸⁷ A, Carew, *The Lower Deck of the Royal Navy 1900-1939*, 2.

until 1913 stokers 'had no voice in framing the Magna-Charta.'⁵⁸⁸ Yexley did not offer any reason for the exclusion of stokers from the framing of this important document but it can be assumed that as stokers were looked down upon by the rest of the lower-deck, their numbers alone were insufficient to enable their voice to be heard. Another distinguished commentator with experience and personal knowledge of the politics of the lower-deck also noted that in the seven years up to the First World War successive Magna Charta's successfully appealed for promotion to warrant rank for every branch of the lower-deck; 'except for the stoker's branch.'⁵⁸⁹ The stokers' loyal appeal for promotion to warrant rank was the only one ever rejected.

The Admiralty never officially acknowledged lower-deck petitions nor did it attempt to expose the authors. No doubt it was content to monitor lower-deck grievances in order to judge the level of militancy within the fleet; offering what it thought were minor concessions in the hope it would keep the men content. However, by not officially challenging petitions the Admiralty set a precedent which it seemed unable to revoke without the potential for causing serious unrest in the fleet. As a result, by 1906 the annual 'appeal' had effectively become a semi-official document written by a joint committee representing the various lower-deck benefit societies. Had the joint committee been more representative of the men it purported to serve they may have been able to wring more concessions and changes from the Admiralty. As it was their weakness lay in a system dominated by warrant, chief and petty officers and by the smaller, better organised branches, such as the writers' branch which tended to assume control of all meetings.

During the First World War petitioning was abandoned. However, after the Armistice the lower-deck resumed its fight for the reform it had asked for but had been consistently denied.⁵⁹⁰ The most pressing lower-deck grievance was that of low pay. Despite an increase in pay in 1917 naval pay still fell far short of

⁵⁸⁸ *The Fleet Annual and Naval Year Book*, ed. Lionel Yexley (London, Westminster Press 1913), 'Lower-deck Societies,' 47.

⁵⁸⁹ H Pursey, 'From Petitions to Reviews: The Presentation of Lower-Deck Grievance,' ed. H G Thursfield, *Brassey's Naval Annual 1937* (London, William Clowes, 1937).101.

⁵⁹⁰ A. Carew, *The Lower-Deck of the Royal Navy 1900-39*, 100.

equivalent civilian pay scales which had increased dramatically after the war in line with increases in the cost of living.

After the 1918 Metropolitan police strike in support of demands for a wage increase and union recognition, Yexley became fearful that the lower-deck would also attempt militant action. In his view this would have resulted in a crack-down by the Admiralty on lower-deck benefit societies which would have been a major set-back for the lower-deck. In order to avert this, Yexley submitted a memorandum to the Admiralty in which he listed a number of pressing outstanding grievances together with a warning regarding the urgency of the situation.

Despite initially rejecting Yexley's warning as the actions of an agitator, the Admiralty was forced to take the matter more seriously after intervention by the retired Admiral Fisher who lobbied both the Admiralty and the Prime Minister on Yexley's behalf. In October 1918 the Admiralty established the Naval Personnel Committee under Rear-Admiral Jerram to consult with the Admiralty on all matters relating to lower-deck pay and conditions. However, while looking into how it could simplify the existing structure of naval pay the committee became bogged down with the complexity of the system leaving the question of the general low level of pay unanswered.

After further agitation and intervention, the Admiralty finally agreed that an increase in the level of naval pay was needed in order to offset the cost of living increases which had left most men worse off in 1918 than they had been in 1914. As a result, the Admiralty reconstituted the Naval Personnel Committee in December 1918 and in an unprecedented move authorised twelve ratings to sit on the committee in an advisory capacity. The lower-deck advisory board attached to the Naval Personnel Committee comprised the following ratings; (See Table 13: below). The figures in brackets denote the total numbers of men serving in each respective branch on 15 June 1919.

Table 13: Composition of the Lower-Deck Advisory Board

<u>Portsmouth Command</u>	Sergeant Major Watts Royal Marines	(21,425)
	Petty Officer Telegraphist Atkins	(4,065)
	E.R.A. Hanbidge	(5,042)
	Sick Berth Steward Leach	(1,492)
<u>Chatham Command</u>	Leading Seaman Beaumont	(46,802)
	Chief Cooper Knight	(212)
	Chief Writer Kirby	(952)
	Officers Chief Steward Penney	(4598)
<u>Devonport Command</u>	Chief Petty Officer Seaman Lobb	(46,802)
	Mechanician Essery (stokers)	(30,477)
	Shipwright Figgins	(1332)
	Chief Petty Officer Cook Pedrick	(4598) ⁵⁹¹

The table above indicates that senior ratings were over represented on the advisory team with just two junior ratings selected out of the ten members to represent the interests of the junior members of the lower-deck. Moreover, with regards to equality of representation across individual branches, the composition of the lower-deck advisory committee left a lot to be desired. For example, cooks and stewards were counted together, but despite collectively comprising only a fifth of the total numbers of stokers they had two representatives between them. 30,000 stokers were left with no direct representation other than a single mechanician; the same representation as the miniscule and obsolete coopers branch which numbered a bare 200 men. (See Appendix 10 for the numbers of men serving in each branch). Furthermore, the single mechanician representing the interest of the stokers may have been pressurised by his peers into supporting the mechanicians' own agenda, rather than the interests of stokers.

The anomaly that resulted in stokers having virtually no representation on the welfare committee had not gone unnoticed and several letters on the subject were published in the officer's journal *The Naval Review*. One contributor calculated that the seamen and combined signal branches shared three representatives amongst 49,000 men which gave them a representative

⁵⁹¹ TNA, ADM 116/1893, 'Welfare Committee: Representation of Lower Deck,' ed. Admiralty (1919), 9.

ratio of 0.06 per thousand men, whereas the smaller, but more organised branches, such as the stores accountants and stewards had a representative ratio of 1.11 per thousand. On the other hand, while the seamen ratio was fairly low due to the size of the branch they were still better off than stokers whose ratio per thousand men was just 0.033. Reviewing these calculations the writer observed, 'is it surprising that the seamen and stoker branches do not think much of the Welfare Committee'?⁵⁹² This fact is borne out when the Port Admiral at Devonport noted in 1920 that only twenty stokers attended a meeting to elect a Welfare Committee representative for the mechanic and stoker branch.⁵⁹³

Then again, we do not know the extent of political infighting between the various branches over elections of welfare representatives and the submission of branch appeals. Carew highlighted the case of a chief mechanic who was drafted to a ship 'out of turn' in 1922 because he allegedly volunteered to represent the stokers' branch at a welfare conference. A letter was circulated in *The Fleet* purporting to be from one commissioned engineer to another which implied that the man had been drafted in order to prevent him from representing the stokers. Yexley's interpretation of the letter was that while it had the signature of an engineer it was probably concocted by an E.R.A. who was paying off a political score on the mechanic.⁵⁹⁴ It is difficult to determine whether it was the case that stokers were disinterested in participating in the work of these committees or whether their voice went unheeded for so long they lost the will to continue to fight against the tide of discrimination that kept them at the bottom of the lower-deck social ladder.

It was suggested that in order to remove the inequality of representation each branch representative should carry a number of votes in proportion to the number of ratings that were represented. Had this proposal been implemented, the seamen branch representatives would have had nine votes each and all other branches except the stokers one vote each. Stokers would have gained a

⁵⁹² 'Welfare Committee Representation,' *The Naval Review* 9 no. 1 (1921), 168-9.

⁵⁹³ TNA, ADM 116/1893, 'Welfare Committee: Representation of Lower Deck,' 3.

⁵⁹⁴ A. Carew, *The Lower-Deck of the Royal Navy 1900-1939*, 242.

major boost from this proposal as it would have given them twenty-five votes per representative which would have enabled them to influence decisions made by the Welfare Committee instead of being sidelined by the smaller, but more politically astute branches.⁵⁹⁵

In late 1918 Yexley warned the Admiralty that if it wanted to prevent a movement towards the amalgamation of lower-deck societies it should make some concession towards a permanent welfare department.⁵⁹⁶ Two years later, Admiral of the Fleet, Earl Beatty, acknowledged that the problem of welfare had 'become a matter of the first importance, which had increased from year to year.'⁵⁹⁷ He also observed that there was no naval division or department with responsibility for advising the Board of Admiralty on lower-deck issues within the naval service. During the war, a physical training branch was introduced in the northern ports to provide recreational activities for the fleet in order to boost flagging morale.⁵⁹⁸ The perceived success of the activities put on for the men led Beatty to make a proposal that the physical training branch should take on the lower-deck welfare role.⁵⁹⁹

Beatty also suggested that individual canteen committees consisting of officers and elected representatives of the men could be used to discuss questions of welfare which could then be brought to the notice of the captain. Despite his apparent willingness to allow the lower-deck some say in welfare conditions Beatty stuck rigidly to the first principle of Admiralty management of the lower-deck by insisting that all requests or complaints had to be made through each man's divisional officer and thence through the commanding officer, onwards and upwards, through the naval chain of command. The restrictions which this process placed upon the men ultimately thwarted their ambitions to make any type of collective representation and ensured that the Admiralty maintained the upper-hand at all times.

⁵⁹⁵ 'Welfare Committee Representation', *The Naval Review*, 9 no. 1 (1921), 169.

⁵⁹⁶ A. Carew, *The Lower Deck of the Royal Navy 1900-1939*, 105.

⁵⁹⁷ TNA, ADM 116/1893, 'Welfare Organization-Minute by Admiral of the Fleet Earl Beatty,' ed. Admiralty (1920), 1.

⁵⁹⁸ *Ibid.*, 3.

⁵⁹⁹ *Ibid.*, 4.

However, by 1920 Beatty appears to have had a change of mind with regards to lower-deck welfare representation. Upon reviewing a lower-deck welfare committee joint request submitted from the *Orion* to the Vice-Admiral 2nd Battle Squadron for certain concessions affecting pay and conditions of service; Beatty observed:

It is not clear whether the Committee were acting throughout with the knowledge and permission of the Commanding Officer, but assuming this was the case, the procedure was nevertheless contrary to the spirit of Article 11, King's Regulations, and should have been avoided, since it conveys the impression that Petty Officers and Men may be allowed to combine for the purpose of initiating joint requests.⁶⁰⁰

The *Orion's* joint request is a good example of the stokers' dilemma with regards to a lack of representation on welfare committees and joint requests of this type. Apart from general requests such as the request for an increase in pensions which would have benefited all men there was not one single request from the stokers of the *Orion*. Instead the following individual branch requests were made:

- (1) That promotion from Petty Officer (Seaman Class) to Chief Petty Officer be accelerated.
- (2) That promotion from Leading Signaller to Yeoman of Signals be accelerated.
- (3) That promotion from Yeoman of Signals to Chief Yeoman of Signals be accelerated.
- (4) That promotion in the Cooper branch be accelerated.
- (5) That promotion in Sick Bay Staff be accelerated.⁶⁰¹

The branches making these requests replicate the unequal composition of the lower-deck ratings advisory board presented earlier while the order in which they are presented are indicative of the social hierarchy which existed on the lower-deck. Moreover, while the seamen would have made up the largest group of men followed by the stoker complement, the signalmen, cooper and sick berth ratings of the *Orion* would collectively have made up just a small

⁶⁰⁰ TNA, ADM 116/1728, 'Pay, Allowances, Pensions Etc: Recommendations of the Jerram Committee,' ed. Admiralty (Admiralty, 1919), Commander-in-Chief Grand Fleet to Vice-Admiral Commanding Second Battle Squadron 4 November 1917.

⁶⁰¹ TNA, ADM 116/1728, Letter from Vice-Admiral Commanding Second Battle Squadron, 20 October 1917.

fraction of the total ship's company. As an example, the first class armoured cruiser *Lancaster* in which S.P.O. Reynolds served in the Mediterranean, had a complement of 661 officers and men which was only 150 men short of the larger *Orion's* ship's company. *Lancaster* had just seventeen signalmen, one cooper and three sick-berth ratings in her complement compared with 201 stokers and 224 seamen.⁶⁰² Taking into account her greater size, *Orion* might possibly have had a few more signalmen and one or two additional sick-berth ratings, however, with just 200 coopers in the whole Navy it is unlikely *Orion* would have had any more than the one allocated to the *Lancaster*. The fact that these branches, despite their small numbers, had the organisation and political persuasion to submit individual class requests is indicative of the lack of cohesion of the stokers' branch and its apparent reluctance to engage in self-promotion.

When Beatty made his proposal in 1920 for changes to the lower-deck welfare system he overlooked the fact that the Admiralty had already introduced a permanent system of welfare committees on similar lines to the successful 1918 Jerram Committee.⁶⁰³ Because this was an official service initiative the Admiralty had to circumvent Article 11 of King's Regulations which prohibited group meetings or representation. In order to overcome this hurdle the Admiralty arranged for Petty Officers and men to be 'ordered' to hold their elections, thereby ensuring that the relevant articles were not contravened.⁶⁰⁴

The early inter-war years began well for lower-deck benefit societies. Poor pay, the high cost of living and poor social conditions within the Navy saw the emergence of new societies and a resurgence in membership of those already established. However, class divisions continued to prevent the lower-deck challenging the Admiralty with one voice. The first inter-port welfare conference met at Portsmouth in October 1919 but because there was no system in place to collectively agree on the proposals to be put forward to the Admiralty, three hundred and seven general and class requests were submitted

⁶⁰² TNA, ONS 14/349731, 'Census of England and Wales: Enumeration Book for the Royal Navy: His Majesty's Ship Lancaster,' (London, 1911), 1-25.

⁶⁰³ TNA, ADM 116/1893, Memorandum by Secretary, 1-3.

⁶⁰⁴ *Ibid*, Minute-sheet no 2.

ranging from issues of great importance to petty requests that would interest only a small number of men.⁶⁰⁵

From the outset there was a fair amount of scepticism amongst the men with regards to the welfare committee scheme. Carew, suggests this scepticism was well placed as the Admiralty had no intention of recognising a role for lower-deck societies within the welfare system and its intention was to re-establish its grip on them once the tide of militancy which was sweeping the nation and Navy had died down.⁶⁰⁶ When the delegates met for the 1920 round of welfare conferences they found that the Admiralty had still not answered any of the requests submitted the previous year. With no reassurance that the Admiralty would make the welfare system any more effective a resolution of no confidence was passed and the representatives requested to dissolve their committees, a move which played straight into the Admiralty's hands.

The Stokers' Class Appeal

In 1914 a class appeal was issued by stokers suggesting that they had united sufficiently to consider their collective future. The class appeal was additional to the annual combined lower-deck 'Loyal Appeal' and was drawn up by stokers because they felt their grievances were being overlooked in favour of much smaller branches who were monopolising and dominating the lower-deck welfare system, (See Appendix 8). The Stokers' class appeal evidently incorporated the advice given by Lionel Yexley at the 1914 Portsmouth benefit society meeting where he suggested the stokers should 'reap every advantage due to them' from the introduction of oil-fuel. The appeal began by pointing out to the Admiralty that the branch had noticed 'with interest' how it had outnumbered the executive branch for the first time in its history. The appeal used the argument put forward by Yexley that modern machinery and 'appliances' found on board ships of war called for a 'higher class of work' and as a consequence required 'better men' than formerly. This argument was supported with a modest appeal for an improvement in pay for all ranks of

⁶⁰⁵ A, Carew, *The Lower Deck of the Royal Navy 1900-1939*, 115.

⁶⁰⁶ *Ibid*, 114-5.

stokers except the second class men upon entry, for which they wished no change.⁶⁰⁷

Another request was for the status and position of the leading stoker rate to be improved, a request that would become more prominent during the aftermath of the Invergordon 'disturbances' of 1931. In addition, it was requested that the rating of 'Chief' be granted to the mechanic rating and that opportunity be given for chief stokers to attain warrant officer status. In support of this request it was pointed out that a committee under the presidency of Rear Admiral E.E. Bradford had been set up to inquire into the need for a single stores officer to take charge of all items of stores onboard H.M. ships. With this process in mind, the class-appeal suggested that chief stokers would be 'eminently suitable' to fill the position of 'store officer' (with warrant rank) owing to their previous experience of accounting for stores and spare parts.

Furthermore, the appeal requested that a small remuneration be payable for stokers who were qualified in internal combustion engines, oil fuel, distilling plants, dynamos, air compressors, and refrigerating and hydraulic machinery on the principle that seamen who were qualified in torpedoes and gunnery received extra pay. Finally, the class appeal set out a tabulated statement listing the 1914 rates of pay for all stoker rates with the appropriate increases proposed by the branch committees that had contributed to issuing the class-appeal.⁶⁰⁸ It is unsurprising that given the status of stokers compared to other classes of men and with their previous treatment with regards to branch representation that none of these requests were granted.

In conclusion, the lower-deck had a clearly defined hierarchical system in which every branch and sub-branch was accorded a certain social status according to the perceived worth of the job or role they occupied onboard. The seaman branch was the largest single branch of service and formed of one body of men. In deference to the traditional and historical role of sailing and

⁶⁰⁷ 'R.N. Mechanics, Chief Stokers, Stoker Petty Officers, Leading Stokers and Stokers Class Appeal,' *The Fleet*, March 1914.

⁶⁰⁸ *Ibid.*

fighting the ship, seamen were deemed to represent the 'military arm' of the service and were accorded the title of the 'executive branch'; a title which granted them supervisory authority over all other branches.

However, the introduction of steam power usurped the seaman's traditional role of sailing the ship while the engine-room branch grew to become a close second to the seaman branch in terms of numbers of men. On the other hand, while seamen were able to form death benefit and mutual aid societies in all the Home Ports to represent their interests, the engine-room branch became divided through its own hierarchical system which sub-divided the branch into E.R.As, mechanics and stokers. In creating the mechanic sub-branch with opportunity to progress to warrant officer rank the Admiralty claimed that stokers had progression to warrant rank. However, this turned into an 'empty promise' as in practice only relatively small numbers of stokers became mechanics and from those even fewer achieved warrant rank. Despite the class-war that broke out between E.R.As and stokers over the introduction of the mechanic rate, relations between these two groups of men remained relatively harmonious with each branch respecting the value of the other. While the rest of the lower-deck harboured resentment at the special status and privileges accorded to E.R.As, stokers accepted their special status in return for the opportunity to learn from them which in turn allowed them to improve their own skills. The fact that this was recognised and accorded the term 'intellectual snobbery' by a seaman officer, was in itself something of a rare compliment for stokers.⁶⁰⁹

The evolution of coaling-ship was a necessary, but very disagreeable task involving everyone onboard. Coaling-ship also generated much extra work through the necessity to clean the ship from the inevitable accumulation of coal and coal dust which required the obligatory 'water-carnival.' As far as seamen were concerned, the need to coal-ship was attributable to the engine room branch as a whole and while a great chore it was recognised as a necessary evil. However, the resulting mess left behind after coaling ship was blamed directly at stokers. Because stokers were considered to be at the very bottom of

⁶⁰⁹ 'In Defence of Mechanical Training,' *The Naval Review* 20, no. 4 (1932). 695.

the naval social hierarchy, they received the full wrath of the seamen department every time their clean and tidy ship was covered in coal dust and filth. The common practice whereby seamen responsible for certain areas of a ship would arbitrarily rope off access to compartments and passageways in order to prevent stokers from leaving their hand or footprints behind was yet another source of deep resentment and antagonism between the two branches.

In order to re-establish their primacy, seamen continued to insist on being regarded as the 'executive' or 'military arm of the Navy' and used every opportunity to let the engine-room branch know who its masters were. Regardless of the long hours spent below in harbour cleaning boilers or undertaking maintenance or repairs, engine-room personnel could only be given time off provided it coincided with the routine worked by the seaman department. Engineering officers did not have the authority to command their own department while engine room senior ratings often had to obey orders given by seamen junior ratings. Moreover, the nature of the naval hierarchy gave rise to certain restrictive practices amongst certain branches which even dictated which branch could give orders to another.

The absence of any official provision by the Admiralty towards the welfare of the men or their next of kin should they be injured or die in service prompted the emergence of death benefit and friendly mutual aid societies which became a feature of lower-deck life during the late nineteenth and early twentieth centuries. These societies expanded their remit to lobby the Admiralty through 'class-appeals' in order to elicit improvements in service for their own members. Had these societies been more unified they would have had an opportunity to bring greater leverage to the Admiralty in order to make improvements to the common cause rather than to their individual members.

Despite the size of their branch, stokers failed to join friendly societies in any great numbers. Furthermore, they were denied their rightful representation on the Welfare Committee being usurped by the much smaller but more politically astute branches. Where other large branches such as the seamen branch joined forces, stokers proved unable to instigate a single society to

speak on their behalf. Instead, several individual societies were formed representing different classes of stokers in different Home Ports thereby leading to a dilution of the power that would have been available to them had they formed a more united front. As a result, when it came to presenting their own class appeal, stokers invariably lost out to much smaller branches. The perverse method of branch representation which gave the Coopers' branch with 212 men a single representative on the Naval Personnel Committee when 30,000 stokers had none is a good example of the way in which the Admiralty stifled the stokers' voice. The lack of direct representation ensured stokers remained firmly fixed to the bottom rung of the lower-deck hierarchical ladder.

Chapter Six

Emerging Technologies: oil fuel and submarines

If the introduction of the water-tube boiler could be considered to have been one of the most technical challenges that faced the late nineteenth century Navy, then the introduction of oil-fuel and the development of submarines would further challenge the Navy during the early decades of the twentieth century. Like all new innovations, these technologies entered service slowly and were not without their detractors. Oil fuel offered many advantages, although there were many in the Navy who looked on the demise of coal as a backward step in much the same way that the breech-loading gun and the introduction of steam propulsion had been similarly resisted. Nevertheless, the Admiralty began investigations into the possibilities of using oil-fuel from the late 1890s and continued with trials throughout the first decade of the twentieth century with increasing confidence and success with the new fuel. However, while oil-fuel was simply an advance on the technology that already existed, the advent of submarines was a completely new technology for which there was no prior knowledge or experience.

Each of these developments will be discussed in turn. The purpose of this chapter is not to give a comprehensive history of the introduction of oil-fuel and submarines but to analyse how these developments affected stokers in their everyday lives and to determine whether they made any material difference with regards to their position within the lower-deck hierarchy or their relationships with seamen. Throughout the coal-firing era the coal-dust and filth which was an unfortunate by-product arising from coaling ship together with the residues left by the soot that was ejected from the funnels was a constant source of irritation to the seamen who had to clean it up. While illogical, seamen and others appeared to have vented their anger towards stokers for this mess, as after all, it was the stokers who actually used the coal. In addition, the routines that became established whereby seamen would 'help-out' stokers in the coal-bunkers when they were hard pushed to cope together with the procedure which required seamen to undertake a qualification in working in the

stokehole as a precursor to achieving promotion to leading seaman; also added to the animosity between the two branches.

The introduction of oil-fuel should have radically improved the quality of life for all those onboard. In particular, it should have improved the working conditions for stokers and done much to repair the broken relationships that existed between seamen and stokers. However, while oil-firing brought some improvements for stokers it also disadvantaged them to an extent while it appears to have done little to elevate their lowly position within the lower-deck social hierarchy.

Oil Fuel

When Churchill became First Lord of the Admiralty in 1911, coal was still the primary source of power for naval vessels, although the mixed-firing method of spraying oil on coal in order to increase combustion was routine for most navies by the early 1900s. In the Royal Navy, Admiral Fisher boasted that he was regarded as an 'oil maniac' by some of his contemporaries through his campaign to introduce oil into the fleet from as early as 1885.⁶¹⁰ However, while Fisher and Churchill were instrumental in pushing through the change from coal to oil, Fisher appeared to be more interested in adopting the heavy oil internal combustion engine for propulsion, than he was for oil-firing steam boilers.

The noted naval constructor and historian D. K. Brown suggested that up to the late 1890s the Admiralty carried out a few experiments with oil fuel but appeared content to monitor developments elsewhere.⁶¹¹ This was unsurprising as the Navy had access to Welsh steam coal which was regarded as the best steam coal in the world, together with well established strategic coaling stations to supply all of its needs. In addition, Britain did not at that time have access to a guaranteed supply of oil. Therefore there did not appear to be any economic or strategic reason to immediately abandon coal for oil.

⁶¹⁰ John A. Fisher, "Lord Fisher on the Navy: Oilers or Coaling Stations," *The Times* 1919.

⁶¹¹ D.K. Brown, "The Introduction of Oil Fuel," *Journal of Naval Engineering* 37, no. 2 (1997). 1.

The destroyer *Surly* was converted to oil fuel and trials were conducted in 1898-99 although they were disappointing. One of the benefits of oil was its higher calorific value, however this gain could not be realised in the *Surly* due to incomplete evaporation of the oil which caused large amounts of smoke. In order to overcome this problem the Navy utilised several experimental ships and shore-side plants to trial different methods of atomising oil in order to gain a higher evaporation rate including the use of steam and compressed air. Better mixing of air in an oil spray was achieved through use of a slotted cone nozzle which gave higher rates of combustion together with excellent economy and an absence of black smoke. By 1903, the training of engineer officers and ratings was extended to cover oil burning.⁶¹² The oil used in the Royal Navy was furnace fuel oil (F.F.O.) which was the consistency of treacle; and required pre-heating through steam heaters in order to reduce its viscosity before it was admitted to the sprayers.⁶¹³ Alan Ereira incorrectly stated that the Navy of 1931 ran on diesel oil, whereas F.F.O. was still in use in the late 1960s until the last few ships were converted to burn diesel oil.⁶¹⁴

The most obvious benefit of an oil-fired ship was the fact that it could maintain a constant high speed until the oil ran out. An often overlooked aspect of the coal-fired era was that regardless of a ship's laid down design speed, the maximum speed it could achieve was entirely dependent on the strength, skill and stamina of its stokers, together with the quality and amount of coal in its bunkers. Moreover, for a coal-fired ship to sustain a high speed for any appreciable length of time, the stokers firing the boilers would require to be relieved at regular intervals while seamen had to be drafted in from the upper-deck in order to supplement the stokers trimming the coal-bunkers.

This was why chapter one alluded to the dubious practice of using specially selected stokers and hand-picked, best quality coal, for initial full power trials in order to ensure that the ship met its design requirements. While

⁶¹² D. Brown, 'The Introduction of Oil Fuel', *Journal of Naval Engineering*, 37, no. 2 (1997), 2.

⁶¹³ Royal Commission on the Ancient and Historical Monuments of Scotland, *Inchindown; Invergordon Oil Fuel Storage Tanks* (2011 [cited 27 February 2012]); cited in <http://canmore.rcahms.gov.uk/en/event/588220/>.

⁶¹⁴ A. Ereira, *The Invergordon Mutiny: A Narrative History of the Last Great Mutiny in the Royal Navy and How It Forced Britain Off the Gold Standard in 1931*, 16.

satisfying the Admiralty and the shipyard, this practice would have given a completely false indication of the normal steaming ability of the ship. When using an average complement of stokers working under stress or tropical heat and with poor quality coal, the ship would not have been able to replicate or attain for any length of time, the speed reached during its initial full power trials.

From the Admiralty's perspective, one of the greatest savings through the introduction of oil fuel was the cost saving in personnel. As an example, the *Lion*, a 70,000 shaft horsepower, coal-fired battle-cruiser, fitted with forty-two Yarrow boilers, required 608 engine room personnel. By comparison, the oil fired *Hood* was able to produce 144,000 s.h.p. in twenty-four boilers with only 306 engine room personnel.⁶¹⁵ In addition, more oil than coal could be carried in a given space, while a ship burning oil fuel could steam a good knot and a half faster than one fuelled by coal due to its higher calorific value.

The introduction of the Queen Elizabeth class battleships in 1913 which were designed from the outset to burn oil fuel finally signalled the Royal Navy's intention to switch from coal to oil-fuel with all the attendant benefits that oil had over coal. However, the changeover was not without its critics, for a decade after 1920 a debate raged within the Navy over the decision to abandon coal firing.

While accepting that oil had major operational benefits over coal, it was suggested that when it came to fuelling-ship, 'coaling provided healthy exercise for the individual' and was a 'first class drill' for the ship's company as a whole.⁶¹⁶ The reference to the supposed benefits of 'coaling ship', were a recurring theme in letters to the editor of the *Naval Review* during the 1930's. Another correspondent remarked that the training derived from coaling ship both in seamanship and hardship, 'was a worthy successor to the old training in sail.' Furthermore, this writer suggested that the handling and stoking of coal

⁶¹⁵ P. Rippon, *The Evolution of Engineering in the Royal Navy*, vol. 1. (1988), 83.

⁶¹⁶ S.D.S., "The Fuel of the Future?," *Naval Review* 23, no. 2 (1935).

was rapidly becoming 'a lost art, an art for which the opening of a few taps and valves was a poor and sorry substitute.'⁶¹⁷

From the rather blasé manner in which the real hardships of coaling ship were downplayed it could be assumed that these particular officers were either so senior that they had forgotten the deprivations involved or they were relatively new to the service and therefore had little real experience. Be that as it may, the concerted effort from a small number of backward looking officers to return the Navy to coal-firing was doomed to failure in the face of progress in much the same way that those who opposed the introduction of the breech loading gun and the steam engine also failed.

With the introduction of the new fuel, the Admiralty foresaw the requirement for a new type of stoker. This resulted in the idea that the Admiralty wished to recruit 'stokers with brains'.⁶¹⁸ As a result recruiting officers were instructed to be careful that no man who appeared 'dull-witted or unintelligent' was entered for service.⁶¹⁹

The benefits which arose from the change to oil firing were immediate and extremely favourable for stokers serving in oil fuelled ships. Stoker Richard Rose served most of his service in coal burners and had been very nearly crushed to death in a coal-bunker on the *Irresistible* while coaling ship. Rose noted the contrast between coal and oil by observing, 'you could go down the stokehole in an oil fired ship in your Sunday best clothes and wouldn't get dirty.'

On the other hand, there were still some dirty tasks reserved for stokers. One of these was cleaning out oil fuel tanks. Rose recalled that whenever he was tasked with this chore he had to strip off his clothes and put on a thin 'mackintosh, all in one suit', but he was not allowed to wear any shoes or boots. The job entailed cleaning the sediment and sludge out of the bottom of the tank and passing it up in buckets to be disposed of ashore. After a couple of days

⁶¹⁷ Poseidon, "In Bondage to Oil," *Naval Review* 16, no. 4 (1928).

⁶¹⁸ "British Navy Seeks Stokers with Brains," *The New York Times*, August 24 1929.

⁶¹⁹ *Ibid.*

standing barefoot in oily sludge he remembered that his feet would feel, 'wonderful-just like a ballet dancers.'⁶²⁰

This experience was shared by stoker Ken Clarke who served in the *Hood* prior to the Second World War. Clarke was a member of the ship's 'double-bottom' party responsible for cleaning all *Hood*'s tanks and bilges for which he earned an extra sixpence per day. When cleaning the oil tanks the men were issued with a rubber suit and clogs. However, because the suits 'always leaked', Clarke and the rest of the double-bottom party preferred to dispense with them altogether and clean the tanks completely naked.⁶²¹

With the advent of oil-firing the term 'stokehole' gradually gave way to 'boiler-room.' As a fourth class E.R.A. William Bruty was in charge of the machinery in one of the boiler rooms of the *Argus*, the world's first flush-decked aircraft carrier. *Argus* had originally been laid down as the Italian liner *Conte Rosso* but was purchased by the Admiralty and converted while still on the stocks, which probably accounts for her being designed from the outset to burn only oil-fuel of which she carried 2,000 tons. While Bruty looked after the maintenance of the boiler-room machinery, a S.P.O. and several stokers under the charge of a chief stoker were responsible for steaming the boilers.

The speed ordered by a ship's telegraphs determined how many sprayers needed to be in operation for each boiler. If a ship was steady steaming there was little to do for the boiler room crew other than monitor the boiler water levels and maintain the required steam pressure and temperature; this allowed time for other jobs such as cleaning or maintenance. However, if a ship was manoeuvring, particularly on entering or leaving harbour, the boiler room would become a veritable hive of activity. In the oil-fired *Hood*, steam pressure was maintained by a chief stoker who controlled steam to the boiler room fans with one hand while the other controlled the steam supply to the oil fuel pumps that served the sprayers. At the same time, a close watch had to be

⁶²⁰ R.F. Rose, *I.W.M.* 754, 51.

⁶²¹ K. Clark, HMS Hood Association Archives in Bruce Taylor, *The Battlecruiser H.M.S. Hood: An Illustrated Biography 1916-1941* (London, Chatham 2004).

kept through a periscope on the ship's funnels, in order to check that the boilers were not making any smoke.

In order to inform the boiler front stokers which sprayers were required, the chief stoker needed to be able to communicate with them. However, the noise and pressure of the fans supplying air for combustion made normal conversation in any boiler-room impossible. Therefore, a crude boiler room sign language was required. Engineer Lieutenant Le Bailly remembered that on the *Hood*, one particular chief stoker used to gain the attention of the boiler front stokers by banging an empty shell case with a spanner. Having gained their attention, the chief stoker then became a sort of 'orchestral conductor', waving his hands and using his fingers to indicate which sprayers he wished putting on or taking off.⁶²²

Because the early type of oil from Venezuela or Trinidad was often contaminated with sand and other sediments it regularly blocked the fine cone nozzles. E.R.A. Bruty remembered that cleaning sprayer nozzles was a 'constant task' during the First World War, however this could be described as 'light work' compared to the coal era.⁶²³

Having joined the Navy in 1910, James Dunn served in coal-burners until 1916, thereafter he only served in oil fuelled ships. He recalled periods of concern for his safety during the First World War when he was serving in the destroyer leader *Gabriel* where he had charge of two boilers with thirteen sprayers on each. The young stoker who was 'sprayer-punching' for him was straight out of a factory in Bristol and therefore very new to the service and also very frightened while down below. At full power the stoker had to use a short ladder to reach the top-most sprayers on the boiler and Dunn remembered that with all thirteen sprayers on each boiler, the air in the boiler room literally 'roared'; while they both waited to be 'blown sky high' at any minute.⁶²⁴

⁶²² L. Le Bailly, *The Man Around The Engine*, (1990), 44.

⁶²³ W. Bruty, *I.W.M.* 759, 67.

⁶²⁴ J. Dunn, *I.W.M.* 769, Reel 5.

In 1926 Dunn found himself for the second time in his career serving in the *Hood*. As one of *Hood's* eleven chief stokers, Dunn was given responsibility for all aspects of the ship's fuel system including fuelling the ship and cleaning and painting the ship's double-bottom spaces. He recalled one particular fuelling evolution when taking on fuel from a tanker alongside just prior to proceeding to sea. This was to have been a 'top-up' fuelling which only required Dunn to take in 'a few tons' to ensure every tank in the ship was fully topped-up. Unfortunately, his team of stokers were not quick enough in changing over tanks, and with the tanker's pumps delivering 500 tons an hour, a tank was overfilled causing it to gush oil out of the vent pipe all over *Hood's* sparkling wooden decks, in full view of the bridge.⁶²⁵ For this misdemeanour, Dunn received a caution from the captain. Stoker Frederick Groves recalled a similar incident on a destroyer when a tank was overfilled flooding the stokers' mess with 'thick oil the consistency of treacle', which required several days to clean up.⁶²⁶

However, not all stokers immediately benefited from the changeover to oil firing. Stoker Sydney Greenwood joined the Navy in early 1935 at a time when just about every ship in the fleet had been built or converted to burn oil-fuel. Prior to joining the Navy Greenwood had worked for a number of years in a steam laundry and thought he was 'cut out for a stoker's life.' By this period, the Navy had abandoned coal training for new stokers and Greenwood was trained solely in oil firing procedures and fully expected to join an oil-fired ship. Unfortunately, on completing his training Greenwood was drafted to one of the last remaining coal burners in the Navy, the small coastal survey ship *Flinders*. By his own estimation, Greenwood was a small, undernourished and physically weak individual on entering the service. On entry he was just five feet six inches tall, although he remembered that the recruiter entered his height on his service papers as being five feet seven.⁶²⁷

⁶²⁵ J. Dunn, *I.W.M. 769*, Reel 3.

⁶²⁶ F. Groves, *Audio-CD of Memoirs*, (1978).

⁶²⁷ Sydney Greenwood, *Stoker Greenwood's Navy* (Tunbridge Wells Kent, Midas 1983). 17.

Greenwood's first watch in the *Flinders* was spent as a trimmer dragging coal out of the bunker for the stokers who were firing. However, it quickly became apparent that he lacked the physical strength to undertake stokehole duties. Greenwood was unable to lift the ninety pound slice, let alone use it to break up the clinker in the furnace. At his first unsuccessful attempt at cleaning the fire the leading stoker picked the slice up one handed and did the job himself.⁶²⁸ After a few watches Greenwood was taken out of the watch-bill and put on 'day-work' duties which involved cleaning the 'stand-by' boiler and getting the ashes up from the stokehole and ditching them over the ship's side. Then again, even this relatively light task was almost beyond him, reflecting in his memoirs that he struggled with the bucket of ashes which weighed nearly a hundredweight.

Nevertheless, despite having failed to make the grade in the stokehole, Greenwood passed the examination for stoker first class and was rated up after completing nine months service. However, after only eleven months serving in the *Flinders* and with no appreciable improvement in his physical stature or ability to undertake a stoker's duties in the stokehole, Greenwood was returned to barracks as being 'unsuitable for a coal-fired ship.' Unfortunately, this meant he was reverted back to stoker second class, leaving Greenwood to claim that he was the only stoker in the Navy to have been reduced in rank from the lowly position of first class stoker to second class stoker.⁶²⁹

While the change to oil firing dramatically improved working conditions for stokers by eliminating the hated coal dust, toil and filth, it actually exacerbated the heat in the boiler and engine rooms because oil-fired boilers allowed much higher steam operating pressures and temperatures. Moreover, as Le Bailly noted, Royal Navy steam pipe lagging techniques, heat removal practices, and steam pipe jointing materials had not kept pace, therefore, steam leaks were frequent which raised the heat below to intolerable levels. Le Bailly, observed that in the oil-fired *Hood* the heat and humidity generated below which

⁶²⁸ S. Greenwood, *Stoker Greenwood's Navy*, 28-9.

⁶²⁹ *Ibid*, 29.

had always been bad during coal firing had worsened, 'so that heat stroke and exhaustion were common.'⁶³⁰

The Red Sea, long the scourge of stokers during the heyday of coal-firing, continued to claim victims to heat exhaustion towards the end of the Second World War in oil-fired ships. In 1944, Le Bailly then a lieutenant commander (E) was serving in the battleship *Duke of York*, a ship not quite four years old. During her passage through the Red Sea in order to join the American Pacific Fleet, Le Bailly commented that the *Duke of York's* young stokers 'dropped like flies' in the machinery spaces through excessive heat. Apart from the myriads of steam leaks and the poor ventilation and heat removal systems, the most serious problem previously alluded to in chapter two, was that of salt deficiency through excessive sweating. Le Bailly noted that despite being sent to the Pacific theatre, the ship's surgeon commander was unable to procure any salt tablets for the engineering department before sailing from England or from Malta during the ship's brief stop-over.⁶³¹

The heat situation became so dire that Le Bailly had to organise a party of older stokers, led by a 'burly S.P.O.' to extricate the victims of heat stroke out of the boiler rooms and into the air locks where they could be revived until they were able to return to duty or carried to the sick bay or their mess-decks to recover. Due to a general shortage of manpower in the Navy at the time, the ship had sailed from England with an under complement of stokers, moreover, the majority were inexperienced through being either 'hostilities only' or very young and straight out of training. Nonetheless, the sudden loss of so many stokers to heat stroke caused serious manning problems. Le Bailly described how he found himself on watch in one particular boiler room with only the chief stoker and a S.P.O. water tender, all the stokers of the watch having collapsed and been evacuated with no spare hands available to relieve them.

Using his knowledge and experience from earlier days on coal-fired ships, Le Bailly overcame his manning problem by implementing the paragraph in

⁶³⁰ L. Le Bailly, *The Man Around the Engine*, (1990), 32.

⁶³¹ *Ibid.* 119.

K.R.s & A.I.s which allowed marines to be employed and paid as stokers, noting in his memoirs that 'Royal Marines and stokers had always got on well together.' With approval from the Marine Major, the marines, being older and vastly more experienced than *Duke of York's* young stoker complement, took to the job with relish and soon became proficient at 'sprayer punching.' By the time the ship reached Colombo the stokers had mostly recovered with Le Bailly noting that the marines 'fairly gloated over their inflated pay packets.'⁶³²

Despite the fact that *Duke of York* and her sisters in the class were relatively new ships they lacked the contemporary design, build and modern machinery of the American ships in the Pacific fleet; particularly with regards to insulation, the jointing of steam piping and the provision of air conditioning in working and living spaces. Le Bailly recounted the feelings of a United States Navy engineer from the *Missouri* who swapped duties with an engineer from the *King George V*. The American engineer was said to have described his time on the British ship as 'the nearest thing to hell' he had experienced, noting with horror that 'the steam seemed to be mostly outside the pipes.'⁶³³ Due to the number and severity of the steam leaks which plagued *Duke of York*, replacing lost boiler feed water was a continuous problem. This was compounded by salt-water contamination from leaking condensers which meant that steam that had been used in the turbines and condensed back into feed water could not be re-circulated back to the boilers.

These two problems meant that water for drinking and washing purposes was always severely rationed onboard *Duke of York* because the first priority for water distilled by the ship's evaporators (which also suffered from salt water contamination) was to replace boiler feed water. The imposition of water rationing only added to the discomfort and ill-health of the ship's company who suffered from 'prickly heat' in poorly ventilated compartments and mess-decks devoid of any kind of air-conditioning.⁶³⁴ The poor ventilation in this relatively modern ship caused Le Bailly to remark that British pre-war warship ventilation

⁶³² L. Le Bailly, *The Man Around the Engine*, (1990), 119.

⁶³³ *Ibid*, 132.

⁶³⁴ *Ibid*, 133.

was 'disgracefully primitive', and 'a blot on the naval constructors and civilian engineers' in the respective naval design departments at Bath.⁶³⁵

In conclusion, the change from coal to oil firing had obvious benefits to every member of a ship's company. The hated and physically demanding task of coaling ship together with its associated filth and the collective effort required to clean it out from every corner of the ship was gone forever. The interval between refuelling and the higher calorific value of oil over coal gave ships extra speed and extended time at sea while it only took a handful of stokers and a chief stoker a few hours to fill up the fuel tanks instead of involving the whole ship's company in a full days labour. Down below, there was no longer any requirement for stokers to risk their lives in the dangerous atmosphere of unventilated coal bunkers while the physical effort of moving over two tons of coal each watch was also removed at a stroke. In its place came the relatively easy job of 'sprayer punching', a job that required little physical effort and none of the skill that was required in firing a coal-fired boiler.

However, there was one aspect of life for stokers working in the new 'boiler-rooms' as the old stokehole was termed which did not improve with oil firing. As Lee Bailey argued, the higher steam temperatures and pressures available with oil firing increased the already high temperatures in the machinery spaces causing more incidents of heat related illnesses amongst men working in them than were probably caused through coal firing. The rise in temperature was exacerbated by poor design and construction of British steam systems and fittings which saw the Royal Navy lag far behind the United States Navy in this respect. These issues would come to a head late in the Second World War when the new British Pacific Fleet struggled to undertake its duties in a theatre of operations which required ships to steam vast distances and maintain operational capability for several months without shore based support.

Even when the numbers of stokers in the Navy exceeded those of the seamen branch for a brief period of time in 1914, stokers were never able to compete with the seaman branch nor were they able improve their standing

⁶³⁵ L. Le Bailly, *The Man Around the Engine*, 118.

within the Navy. Oil fired ships required far less stokers than those fired by coal, therefore, as their numbers began to dwindle so did any hope of stokers ever competing with seamen on an even footing. Moreover, whatever officers or other men of the lower-deck thought privately about the character of stokers it could not be denied that during the coal firing era their fortitude and endurance in steaming a ship purely by their own personal skill and strength was a much admired trait. However, the advent of oil-firing appeared to remove much of the aura that had surrounded the man at the furnace front thereby further diminishing the standing of stokers in the Navy. From this point onwards, stokers were regarded as mere unskilled 'mechanics' rather than the skilled firemen of the coal-firing days.

The Submarine Service

The launching of Holland 'boat number one' at Barrow in Furness in 1901 was something more than the introduction of new technology. Submarines were an entirely new concept in naval warfare and in the beginning the Admiralty, not unnaturally, had virtually no knowledge or experience with regards to the strategic value that submarines would offer later on in their development. This second half of the chapter will examine the part stokers played in the fledgling submarine service noting the differences in the terms and conditions of service between the submarine service and the surface fleet which hereafter will be termed general service (G.S.). The chapter will show that despite its best attempts, the Admiralty failed to prevent submarines from becoming an autonomous service within its own right. Had it succeeded, the Admiralty would undoubtedly have operated submarines under the same social and service conditions that existed in G.S. However, from the beginning, submariners recognised that the new service demanded different regimes from those imposed in G.S., therefore, they started from a 'clean-sheet' and developed new routines to suit their particular type of work. There was no social hierarchy in the submarine service, every officer and man shared the same discomforts, deprivations and danger. Therefore, the old animosities that existed in G.S. that portrayed the stoker as the 'lowest of the low' were left behind and stokers became fully accepted into the service.

While water rationing was an occasional problem in G.S. it was an accepted fact of life in the submarine service. S.P.O. Ridley served in *H32* one of the 'H' class submarines which he regarded as 'by far the most popular class among submarine crews.'⁶³⁶ The 'H' class served with the submarine service between 1915 and 1945 making them the longest serving type of submarine in the history of the Navy. Nonetheless, it is difficult to see why they were so popular considering the very basic comforts available for their crews. Ridley, noted the complete absence of any living accommodation for the men in *H32*, although officers shared a very small wardroom.

H32 had only two bunks onboard, one was reserved for the Captain and one for the [Coxn] (Coxswain, the senior Chief Petty Officer seaman). However, Ridley stated that neither bunk was ever used for sleeping 'on principle.' Instead they became general stowage areas for oilskins and other 'junk.'⁶³⁷ The chief and petty officers (including three E.R.As) messed at a temporary table in the 'fore-ends' (the forward compartment of the boat) which would be rigged between the torpedo racks. Interestingly, and in comparison to life in the surface fleet, Ridley observed that this was 'the only time in the history of the Navy when E.R.As did not have their own mess.'

The sleeping arrangements on *H32* were equally as crude. Ridley noted that when men were 'off watch' and required sleep the 'fore-ends' table was unrigged and they slept on the deck, 'wearing their overcoats and 'lying like puppy dogs in a pile to keep warm.' Ridley, however, preferred the warmth of the engine room and always slept fully clothed on the deck plates behind the main engines on a bed of cotton waste.⁶³⁸ Cooking was conducted in the motor room where the electric motor was sited. However, the only item of cooking equipment he identified was a two gallon electric urn which supplied hot water for making tea and for heating up tins of soup. It is probable that the men lived off tinned rations and very unlikely that any real cooking was completed while the boat was at sea.

⁶³⁶ RL Ridley, "*Life in a 'H' Boat Fifty Years Ago*," (Gosport: A1983/007, Royal Navy Submarine Museum, 1983). 1.

⁶³⁷ Ibid.

⁶³⁸ Ibid.

Harry Masters was born in East Ham, London in 1909, eldest of eight children. His father worked as a stoker on the boilers of the local gas works. Their home was a two-up-two-down privately rented house until they were bombed out by a German Zeppelin during the First World War. Masters was obviously a bright boy; he left school in standard seven at the age of fourteen having been awarded a scholarship to a grammar school. However, there was insufficient money to allow him to continue his schooling and he was forced to find a job. Masters obtained work as a plumber and painter and decorator but became bored and with work scarce, he decided to join the Navy.⁶³⁹

After arriving at Chatham barracks Masters began military drill straight away in his civilian clothes until he was issued with his kit two weeks later. From the outset Masters wanted to be trained as a stoker, not a seaman. His first ship was a minesweeper followed by a destroyer; however, Masters did not appreciate the strict discipline he found in general service so he volunteered to join submarines. While the less formal routine and more relaxed discipline of submarines was the initial attraction, the extra submarine pay was also a consideration in his decision to volunteer. Masters quickly found that while there was less evidence of formal discipline within the submarine service, it was replaced with a greater emphasis on self-discipline.⁶⁴⁰

Masters first boat was the *Phoenix* which he joined in 1930. There were a small number of bunks onboard although Masters preferred to sleep in a hammock. Food at sea was 'iron rations' but the men bought their own food from the Navy, Army, and Air Force Institute (NAAFI) onboard the submarine depot ship prior to going to sea. Masters acted as the caterer for twenty-two men. He recalled that he wore nothing else but overalls while at sea and, because water was constantly rationed there was no means of 'dhobying' his clothes, therefore he never bothered to take his overalls off, even when sleeping.⁶⁴¹

⁶³⁹ Harry Masters, *I.W.M. 26543, Audio Recording of Memoirs of Service as a Stoker in the Royal Navy* (London, Imperial War Museum, 2003), Audio Tape 7 Reels. Reel 1.

⁶⁴⁰ *Ibid*, Reel 2.

⁶⁴¹ *Ibid*, Reel 3.

In the beginning, the fledgling submarine service was not such an attractive proposition. The Admiralty's first call for volunteers in 1901 met with a disappointing response from the lower-deck. Only sufficient men to crew the first three of the five 'Holland' boats came forward, forcing the Admiralty to compulsory draft men from the battleship *Jupiter* in order to man boat number four and five for their respective sea trials in 1902.⁶⁴² All Royal Navy submarines are traditionally referred to as 'boats' after the first submarine was launched as 'His Majesty's Submarine Boat Number One' at Barrow in Furness in October 1901. Boat Number One was the first of a class of five Holland boats which were American designed but British built.

In order to make service in submarines appear more attractive a decision was taken in the early days of the service to foster a less formal working environment on board both submarines and depot ships where discipline and dress codes were relaxed to a point that would never have been tolerated in general service.⁶⁴³ Another inducement was the introduction in 1903 of 'hard lying' pay for service in submarines. Extra pay had previously been granted to crews of torpedo boat destroyers (T.B.D.s) in the 1880s. In the beginning, T.B.D.s like submarines, were considered experimental, dangerous, and had virtually no living accommodation or facilities for the crews hence the term 'hard-lying.' However, once the novelty of torpedo boats wore off, service in them was regarded as no more onerous than serving in any other ship and the Admiralty withdrew the extra 'hard lying' pay.⁶⁴⁴

Submarine pay effectively doubled a man's pay. The basic pay for a stoker in 1906 was 2 shillings a day; in addition as a submariner he received a further two shillings submarine pay, taking his earnings to four shillings a day. A stoker serving in general service earned two shillings four pence and a halfpenny while an able seaman earned one shilling eleven pence and a halfpenny. Therefore, a stoker drawing submarine pay would have been very well off compared to his contemporaries in general service. Lambert argued that

⁶⁴² Nicholas A. Lambert, *The Submarine Service, 1900-1918*, Publications of the Navy Records Society Vol. 142 (Aldershot: Ashgate for Navy Records Society, 2001). xviii.

⁶⁴³ *Ibid.*, xx.

⁶⁴⁴ *Ibid.* xix.

the Admiralty never intended for submarine pay to become a permanent feature of the service and expected that once the novelty of submarines was over it would be able to withdraw it as it had done with T.B.D. 'hard lying' pay.⁶⁴⁵ However, as Lambert noted, numbers of volunteers for submarines among the lower-deck failed to come forward in sufficient quantities, while there was a real fear that removal of 'hard lying' pay would lead to an exodus of the most experienced and best trained men from the new service. Therefore, the Admiralty was forced to accept that the extra payment for service in submarines would become a permanent feature of the service.

Submarine conditions of service

While submarine pay was an obvious attraction for some men, the attrition rate had a negative effect on others. Tom Clayton noted in *Sea Wolves*, that in light of the losses of submarines 'requesting a transfer to submarines was an odd decision to make.'⁶⁴⁶ Between 1901 and 1945 Britain lost twenty-four boats during peacetime and 142 during the two world wars. Another reason why men were reluctant to volunteer for submarines was the limitation on the length of time a man could spend in the submarine service before being compulsorily returned to G.S. Article 98 of the Naval Drafting Regulations limited this time to five years after which time a man had to be returned to G.S. for a minimum period of two years in order to qualify for promotion.⁶⁴⁷ On completion of the two years hiatus a man could request to return to the submarine service for his final three years service after which time he was no longer able to serve in submarines. This restriction was a ploy by the Admiralty designed to prevent submarines from becoming a specialised and autonomous service in its own right. The Admiralty also proposed that the term 'service in submarines' should be used rather than 'submarine service' which it thought

⁶⁴⁵ N. A. Lambert, *The Submarine Service, 1900-1918*, xix.

⁶⁴⁶ Tim Clayton, *Sea Wolves: The Extraordinary Story of Britain's W.W.2 Submarines* (London, Little, Brown, 2011). 40.

⁶⁴⁷ Rear Admiral (S), 1920, in TNA, ADM 116/2339, 'Submarine Service: Question of Manning and Need for Revision of Conditions,' ed. (Admiralty, 1920).

'might convey the erroneous impression that submarines formed a separate service.'⁶⁴⁸

The Admiralty's strategy to prevent submarines from becoming a separate service failed for a number of reasons. In the first place, submariners required highly specialised training together with the ability and skill to undertake a wide range of duties outside their main branch specialisation. For example, stokers were expected to take a turn on the helm or diving planes and in later boats would form part of a submarine's surfaced gun crew. Similarly, seamen were trained to operate electrical switchboards and expected to have a working knowledge of a submarine's diving arrangements and air and hydraulic systems. While these individual attributes undoubtedly existed within the fleet, there was no 'cross-training' among branches such as existed in submarines. In G.S. service men operated strictly within the confines of their own branch with clear lines of demarcation that could not be crossed.

In addition, volunteers for submarines had to be prepared to endure the not inconsiderable physical hardships such as those vividly described by Stoker Ridley in *H32*. While lower-deck living conditions in the fleet were basic in the extreme they could be described as somewhat luxurious when compared to those that existed in submarines. Finally, the close confines of a submarine forced officers and men to share the work, discomforts, and danger equally. This shared lifestyle generated mutual trust and respect and allowed relationships to develop between officers, senior ratings and men that would not have been possible in G.S. In the fleet, branch rivalry, class differences and the hierarchical social division that divided every part of the service ensured that officers and men remained separate at all levels forming barriers between them that could not be breached.

The Admiralty's plan to restrict the amount of time a man could serve in submarines eventually backfired, exposing a flaw in the regulations that had not been considered when the maximum term of service was originally set. When the reserve fleet was mobilised for the 1920 summer fleet exercises there was a

⁶⁴⁸ Rear Admiral (S), 1920, in TNA, ADM 116/2339.

requirement for reservists to man submarines. However, many of the reservists called up for submarine service were men who had completed their five years in the submarine service and had then been compulsorily drafted back to G.S. Rear Admiral (S) (submarines) informed the Admiralty that 'nearly all ex-submarine ratings called up from G.S. stated that they were no longer volunteers to serve further periods in submarines.'⁶⁴⁹ These men refused further service in submarines claiming (rightly) that they had completed their submarine liability and were no longer 'volunteers.' The Admiralty reluctantly accepted the status quo and ordered all men who refused further service in submarines to be drafted to various ships in the reserve fleet.⁶⁵⁰

The Admiralty informed Rear Admiral (S) that only volunteers were to be re-entered into the submarine service in view of:

- (a) The great development of the Submarine Service
- (b) Its present requirements
- (c) Its increased safety
- (d) The fact that reserves for the Submarine Service were now required, and
- (e) The uncertainty of optional service⁶⁵¹

Nonetheless, the Admiralty planned to modify the optional (voluntary) nature of service in submarines until such service became 'as much a normal part of naval duties as service in destroyers.' As part of this strategy it planned to withdraw the optional element of service in submarines once an officer or man had volunteered and entered the service, leaving the arrangements for a return to G.S. on similar lines to those already existing.⁶⁵² In response to this proposal Admiral (S) accepted that any officer or man serving in a capital ship should have been capable, at any moment, of undertaking any duty in a destroyer, even though he may not have previously served in one. However, he argued the same could not be said of a submarine while he also thought it unlikely that this would ever change.⁶⁵³

⁶⁴⁹ TNA, ADM 116/2339, '*Submarine Service: Question of Manning and Need for Revision of Conditions.*

⁶⁵⁰ Ibid.

⁶⁵¹ Ibid, Letter from Secretary of the Admiralty to Rear Admiral (S).

⁶⁵² Ibid, Letter from Rear Admiral (S) to Secretary of the Admiralty.

⁶⁵³ Ibid.

It was also pointed out to the Admiralty that in the voluntary submarine service the worst punishment a man could receive was to be sent back to G.S. consequently a very high standard of morale existed within submarines. On this basis, it was felt that any form of compulsory service in submarines would ultimately interfere with the efficiency of the service.⁶⁵⁴

Lambert noted that the rapid expansion of the submarine service between 1906 and 1910 helped to foster the spirit of an exclusive service. Because of the need for additional crews to man the increased numbers of boats being built there was a need to retain experienced personnel within the service. This meant that officers and men got to know each other extremely well as they often worked side by side for many years, whereas it was the custom in G.S. to change at least twenty percent of a ship's company each year.⁶⁵⁵

In order to foster team spirit, submariners were encouraged to use the football pitches that had been laid out for them close by the depot ships on shore which, as Lambert observed, had the dual purpose of also improving the mens' health. Leave was normally granted at four o'clock in the afternoon and, because the first boats were based in Portsmouth the crews were drawn from that home port, therefore they benefited by being able to go home most nights.⁶⁵⁶ Lambert speculated that submarine pay attracted married men to the service, particularly those of the higher specialisations, although equally the extra pay may have encouraged submariners to marry earlier than they would have contemplated had they been serving in G.S.

The fact that the early submarines were based in Portsmouth obviously attracted many Portsmouth ratings to join the submarine service; however, the same could not be said for Devonport men. A 1924 Admiralty minute noted that 'the unwillingness of Devonport men to serve in submarines had always existed.' The minute suggested that it was 'notorious' that west country men were very loathe to leave the west, reasoning that as the Devonport division was so

⁶⁵⁴ Admiralty Board Minutes 29 September 1924.

⁶⁵⁵ N. A. Lambert, *The Submarine Service 1900-1918*, xx.

⁶⁵⁶ *Ibid.*

remote from other ports, men for domestic reasons would not join a service which involved a continued absence from the west country.⁶⁵⁷ The reluctance of Devonport men to man Portsmouth based submarines replicates the manning pattern of the Chatham based ship *Lancaster* discussed earlier in chapter two which had a large number of men from the south-east regions but very few men from Portsmouth or Devonport.

One man who had contemplated marriage was Leading Stoker John Steel. Steel had served in the armoured cruise *Minotaur* during the Battle of Jutland after which he volunteered for service in submarines in the autumn of 1916. However, on joining the submarine service in December 1916, Steel was forced to relinquish his leading stoker rate which he had held for six years and revert back to stoker first class. This was a submarine practice designed to ensure that all men on entering the submarine service learned from the 'bottom up.' Steel noted in his memoirs that, 'this was the normal procedure in those days.'⁶⁵⁸ However, by reverting to stoker first class, Steel found himself six pence per day worse off in his daily pay which dropped from two shillings and ten pence per day to two shillings and four pence a day (1912 pay scales), although his submarine pay still effectively doubled his money.

The regulation which stripped Steel of his leading stoker's rate was abolished in 1927 when it became clear that too many submarine leading stokers were leaving the service to undertake the mechanical training course which qualified them for mechanician training. In order to replace these men the Admiralty decided that the submarine service would accept a number of confirmed leading stokers direct from G.S. giving precedence to those who had already completed their first period in submarines. In order to ensure that these men were fully capable of integrating into the service they were given an extended and more intensive submarine training course to prepare them for

⁶⁵⁷ Commander-in-Chief Plymouth Station, 1925. in TNA, ADM 116/2339, 'Submarine Service: question of Manning and Need for Revision of Conditions,' ed. (Admiralty, 1920).

⁶⁵⁸ Leading Stoker J Steel, "*K1: Her Last Dive*," (Gosport: A1984/57 Royal Navy Submarine Museum, 1917). 1.

their duties; as a result they were not required to revert to stoker first class.⁶⁵⁹ After initial submarine training at Fort Blockhouse Portsmouth, Steel was drafted to the newly built boat *K-1* then fitting out in Portsmouth dockyard. He noted that unlike previous classes of boats, the 'K'-Class were 'self contained' and the crew were expected to live onboard permanently.⁶⁶⁰

The oil burning 'K' Class submarines

The 'K' class submarine was designed to operate with the Grand Fleet in the role of a 'fleet-submarine', to which end the class was fitted with two oil-fuelled boilers and a twin set of steam turbines. This novel design enabled the class to achieve twenty-four knots surface speed in order to keep up with the fleet, while a diesel-generator arrangement could re-charge the battery or drive the electric motor on the surface in an emergency. When dived, the class had a limited under-water endurance of one hour at full speed on the battery. Because of their exceptional size and much improved habitability, 'K' boats were the first submarines where the crews were expected to live permanently onboard. Unusually, while the boats had two large electric cookers, one situated in the officers bunk space aft of the torpedo room and one in the motor room for the men, they also had a coal-fired range located in the after part of the conning tower with an adjacent coal store which held two-tonnes of coal.

While the design of the 'K' class was innovative and they achieved their surfaced design speed, the operational concept of integrating large submarines with the fleet in a traditional naval line-ahead formation was blatantly flawed. Unfortunately, this was proven during the ill-fated Grand Fleet exercise EC1 in January 1918 when five 'K' boats of the 13th Submarine Flotilla sailed from Rosyth in line-ahead formation sandwiched between battlecruisers and other elements of the Grand Fleet.⁶⁶¹

⁶⁵⁹ TNA, ADM 116/2339, '*Submarine Service: Question of Manning and Need for Revision of Conditions*,' ed. (Admiralty, 1920).

⁶⁶⁰ L.S.J. Steel, "*K-1 Her Last Dive*," 2.

⁶⁶¹ N. S. Nash, *K Boat Catastrophe: Eight Ships and Five Collisions, the Full Story of the 'Battle' of the Isle of May* (Barnsley: Pen and Sword, 2009). 54.

As the fleet was passing the Isle of May in the middle of the Firth of Forth at twenty one knots, a series of five separate collisions occurred resulting in the loss of two 'K' boats and 104 officers and men. The events of this exercise have become known by the unfortunate title of the 'Battle of May Island' and forever condemned the 'K' class as dangerous or 'unlucky' boats.

The noted submarine expert, Richard Compton-Hall *Submarines at War 1914-1918*, titled his chapter on K-class submarines, 'K for catastrophe' while referring to the boats as the 'calamitous K class.'⁶⁶² In addition, Compton-Hall observed that the boats were universally disliked and that officers and men who served in them were known collectively as the 'suicide club.'⁶⁶³ Yet, despite the poor reputation of these boats, both in contemporary service and in the view of historians such as Compton-Hall *et-al*, the K-class remained popular in the memory of many of their crews.

Stoker William Millett joined the Navy in 1914 just prior to the outbreak of hostilities and was trained in both coal and oil. After serving in the *Royalist* at Jutland, Millett volunteered for submarines and joined *K-2* and, later on in his service, *K-5*. Millett considered the comradeship between K-boats' crews and their officers 'magnificent', although he remembered that the K-class were considered 'very dangerous' leading to the need for crews to work closely together as they all knew they had to be 'very careful with them.'⁶⁶⁴

Stoker Christopher Reid started his working life as a pit pony driver in Seaham Colliery site of two infamous mining disasters in the late 19th century. Reid was serving onboard the *Irresistible* when an explosion blew apart the *Bulwark* lying at the next buoy taking his younger brother down with it. After service in the Dardanelles onboard *Irresistible*, Reid answered the call for volunteers and joined submarines in 1916 being immediately drafted to K-boats. In his memoirs Reid described the boilers in *K-4* as 'lovely steamers' which

⁶⁶² Richard Compton-Hall, *Submarines at War, 1914-18* (Penzance: Periscope Pub., 2004). 288.

⁶⁶³ *Ibid.* 290.

⁶⁶⁴ W.T Millett, Stoker, "R.N.M.N. (Rec) 121, Transcript of Interview," in *Liddle Collection*, ed. Peter H Liddle (Leeds, University of Leeds, 1978).

allowed the boat to 'easily attain twenty-six knots.'⁶⁶⁵ Another man who had fond memories of the K-class was leading torpedo operator (L.T.O.) Jack Nicholas. Nicholas left a sympathetic account of his service onboard *K-26* which he joined in 1929, affectionately referring to his boat as 'my steam-sweetheart.'⁶⁶⁶

Submarine victualling

Nicholas left a detailed description of the unique 'K-class' coal-fired galley range which was situated in the base of the conning tower. The galley was contained within a 'free-flood' space, a compartment which sat outside the pressure hull open to sea when the boat dived. The cook, who was a 'specially selected seaman', was paid sixpence per day and was referred to as 'chef' or 'cookie' by the more junior ratings; however, those with more service often resorted to the more derogatory term 'slushie.' The equipment in the galley consisted of a 'standard coal range' with associated coal bunker, a hand pump to draw up fresh water, a table and a large copper boiler for providing hot water.⁶⁶⁷

Adjacent to the galley was a small recess which contained the butcher's block, 'tied down to prevent it floating off.' The coal used in the galley, referred to by Nicholas as 'culinary coal' was said to have been good quality which 'lit easily and burned well' enabling the cook to boil, fry, bake, stew and roast. Should the galley have been in use prior to the boat being ordered to 'open up for diving', which was the preliminary order to prepare the boat for 'diving stations', the cook would drain the copper, pull out the fire, close the coal-bunker door and tie down his pots and pans before going below taking with him his portable electric lead which provided the only illumination in that dark space.⁶⁶⁸

⁶⁶⁵ Christopher Reid, Stoker, "R.N.M.N. (Rec) 090a, Transcript of Interview," in *Liddle Collection*, ed. Peter H Liddle (Leeds, University of Leeds, 1977).

⁶⁶⁶ Leading Torpedoman Jack Phillip Nicholas, "*Some Sort of Description of Submarine K26*," (Gosport: A1985/041, Royal Navy Submarine Museum).1.

⁶⁶⁷ *Ibid*, 7.

⁶⁶⁸ *Ibid*.

This routine may have seemed like a dangerous and drawn out procedure as most submarines of the day would normally only take around sixty seconds to dive. However, it was not unknown for the captain of a K-boat to press the diving klaxon and to then take a leisurely walk around the casing to check all was well. In particular, it was imperative on the K-class to check that the electrically operated funnel hatches and the hydraulically sealed boiler room vents were properly shut before going below and shutting the conning tower upper-lid (hatch). Four minutes was considered to be a good diving time for a K-boat, although five minutes was more the norm.⁶⁶⁹

K-26 was victualled on the 'canteen messing' system exactly the same as G.S. However, Nicholas observed with some irony, that the boat did not have a canteen, neither did the crew have much opportunity of using the canteen of a big ship; therefore, he was somewhat bemused by the title.⁶⁷⁰ While the boat was in Malta he recalled that the petty officers' mess had an arrangement with the 'Olympia bar' to supply their mess victuals under a written contract, while the artificers, seaman and stokers messes had similar arrangements with other suppliers.⁶⁷¹ Despite not having an onboard canteen the men of *K-26* ate similar food to those in G.S. although, with their extra pay and increased ration allowance they appear to have been able to have had a more varied diet. Breakfast dishes on the surface comprised kippers, eggs boiled and fried, sausages, bacon, porridge, bloaters and haddock, all rather more appetising than the slice of dry bread Stoker Cooper had for breakfast on the *Exmouth*. Lunch would consist of the usual sailor's fare of baked, boiled, roasted and fried meats, pies and 'ooshes', while a typical supper menu on *K-26* would include liver and onions, fried kippers, fried steak, toasted cheese, fried fish or curry. Cheese oosh was a submarine delicacy loosely related to a cheese soufflé but made heavy and flat like a Yorkshire pudding from cheese, eggs and milk.⁶⁷²

⁶⁶⁹ R. Compton-Hall, *Submarines at War, 1914-1918*, 2004, 293-4.

⁶⁷⁰ *Ibid*, 16.

⁶⁷¹ J. P. Nicholas, "Some Sort of Description of Submarine *K-26*", 16.

⁶⁷² John. Winton, *The Submariners: Life in British Submarines 1901-1999: An Anthology of Personal Experience* (London, Constable, 1999). 126.

The extra funds available to submariners enabled them to procure what men such as Stoker Thomas Cooper, whose menu was described in chapter two would have considered to have been 'luxury goods.' Nicholas listed *K-26's* fare as having included 'grapes, the better sorts of cheeses' and 'out of the ordinary fruits, when they could be procured.'⁶⁷³ While submerged, highly flavoured foods were considered 'taboo' with cabbage, onions and curries in particular, being considered 'fresh air only dishes.'⁶⁷⁴ On the other side of the coin, submarines had little stowage for food items while cold rooms were not fitted during this period; therefore, the type, amount and quality of food carried at sea varied considerably. During the First World War, submarine crews were issued with 'War Emergency Comforts' which included tinned items such as bacon, sardines, sausages and vegetables together with bottled fruit and cocoa essence. However, since submarines rarely surfaced during daylight hours and spent long periods of time at sea, even with their improved rations submarine crews still suffered from a deficiency of vitamin D.⁶⁷⁵

As described earlier in this chapter, a majority of submariners were married and were allowed more freedom with regards to night shore leave by their officers in comparison to the more strict routines of G.S. This fact was highlighted by Nicholas who observed that in harbour 'a fair number of the boat's crew would eat ashore every night with their wives and sweethearts.'⁶⁷⁶

Submarine working relationships

Serving alongside Nicholas in *K-26*, was a first class stoker passed for leading stoker by the name of Tonks. Tonks was a married man of around thirty years of age with three medals from the 'first war' and two good conduct badges, denoting eight years-service with good conduct. However, while Tonks was said to have been thoroughly capable in all aspects of watch-keeping onboard the boat, he was unable to be promoted to leading stoker because he could not

⁶⁷³ J. P. Nicholas, *Some Sort of Description of Submarine K-26*, 9.

⁶⁷⁴ Ibid.

⁶⁷⁵ Richard. Mackay, *A Precarious Existence: British Submariners in World War One* (Penzance, Periscope, 2003). 82.

⁶⁷⁶ J. P. Nicholas, *Some Sort of Description of Submarine K-26*, 17.

swim. Nicholas, recalled that he recruited another seaman and together they taught Tonks to swim in the warm waters of the Mediterranean. Eventually, after Tonks was able to demonstrate that he could swim the required fifty yards and tread water for two-minutes he was duly rated up to leading stoker. Tonks never forgot the friendship and assistance shown to him by Nicholas and his accomplice calling them his 'special mates - 'my two sand-scratchers.'⁶⁷⁷

The term 'sand-scratcher' was unique to submarines being a nickname given by stokers to seamen. It was a good natured jibe and referred back to the time when seamen scrubbed ships' wooden decks on their hands and knees using a sandstone block called a 'holystone' and sand. This is a good example of the different relationships that existed between men in G.S. and submarines. On surface ships, men were divided by departments and forced to live in separate messes. Moreover, on some of stoker Lilley's ships even the upper-deck was segregated with seamen and stokers being allocated separate areas for them to congregate in.⁶⁷⁸ This type of segregation caused resentment and distrust to build up leading to open hostility particularly between seamen and stokers. Whereas, in the close confines of a submarine, even one as large as a K-boat, relationships amongst the different branches were harmonious leading to a camaraderie that was based on professional trust and mutual respect.

In order to build upon this professional relationship, seaman submarine officers were required to have a far higher level of technical proficiency than their G.S. counterparts. The successful First World War submariner Lieutenant-Commander Nasmith of *E-11*, the first boat to penetrate the Dardanelles, had a comprehensive knowledge of his boat's torpedoes, engines and electrical systems. In addition, Nasmith insisted that every man onboard should be able to do any job; therefore on *E-11* the stokers took turns at the ship's wheel, E.R.As operated the hydroplane controls while seamen were trained to manage the electrical switchboard.⁶⁷⁹ On all submarines of this period the engineering officer would keep his watches in the control room where he would be

⁶⁷⁷ J. P. Nicholas, "Some Sort of Description of Submarine K-26," 14.

⁶⁷⁸ A. E. Lilley, *I.W.M. 750*, Reel 4.

⁶⁷⁹ R. Mackay, *A Precarious Existence: British Submarines in World War One*, 45.

responsible for maintaining the boat's trim. He would delegate the operation and maintenance of the engines and all associated machinery to his senior E.R.A.

Nicholas observed that if the 'tiffies' (E.R.As) were taken out of a submarine, 'it might go-but not for long.'⁶⁸⁰ *K-26*, had five engine-room artificers and one electrical artificer with the chief E.R.A. reporting directly to the Engineering Officer who held the rank of lieutenant. Nicholas noted that relationships between the stokers, artificers and officers were 'very good' and that sport, particularly cricket, football, water-polo and rowing were what welded the ship's company together. With only sixty-three officers and men in the boat, the choice of sportsmen was not wide; however, Nicholas reported with pride that *K-26* became the Mediterranean Squadron water-polo champions in 1930 beating battleships, 'who had over one thousand men to choose their teams from.'⁶⁸¹

K-Class boilers

To the rear of the control room on *K-26* was a watertight bulkhead with a door leading to a passage giving access to the two separate boiler rooms, the after boiler room having an escape hatch which led back into the passage. The boiler rooms were accessed through air locks, required because the boiler rooms were under pressure from fans which forced air into the boiler furnaces to increase combustion of the oil. Aft of the rearmost boiler room was the turbine room. As an L.T.O. Nicholas recalled that he was 'none too keen on entering the boiler room, at sea at any rate.' He remembered that on entering the boiler room his ears would pop with the pressure and the moving air flapped at his overalls 'seemingly designed to throw you through a small aperture into a blazing mass of oil.' Nicholas used to 'shudder' at the thought of all that 'hot water, steam and flame.' As for the stokers, he described them at work as looking like 'devils in hell', while tending their boilers.⁶⁸²

⁶⁸⁰ J. P. Nicholas, "*Some Sort of Description of Submarine K-26*, 22.

⁶⁸¹ *Ibid.*

⁶⁸² *Ibid.*

Writing in *The Naval Review* in 1919 a submarine officer defended the concept of the 'fleet submarine' against its many detractors. The K-class was credited with being able to maintain a speed of nineteen to twenty knots in an emergency 'in weather that would have forced a destroyer to reduce its speed to fifteen knots', albeit it was admitted that some damage to the bridge and superstructure was to be expected.⁶⁸³ In describing these conditions, some sympathy was offered towards K-class boiler room stokers who were said to suffer 'severe discomfort' in bad weather when water cascaded down the air intakes and funnels. As a result, stokers were forced to wear 'oilskins, sou'westers and sea boots while on watch.'⁶⁸⁴

Leading Stoker Steel, described his first boat, *K-1*, as 'the best steaming and diving boat of the lot.' On her trials *K-1* had achieved twenty three knots, but on patrol in the North Sea in 1917 while scouting for the German High Seas Fleet the boat made twenty-five knots for extended periods. Steel recounted that as *K-1* was the 'first of class' she had flush bows and short, squat funnels, a design that caused water to break over the funnels and down through the 'mushroom tops' (boiler room vents). Apart from putting out the fires, the water also stopped the boiler room fans which would have made conditions inside the boiler rooms intolerable with the build up of latent heat. When a K-class boat went to diving stations the conditions for the stokers who manned the boiler rooms was said to have been something of a 'nightmarish' ordeal with the heat, the roaring of the induction fans and pumps and the smell of hot fuel and oil which turned the boiler room into a miniature inferno. At the sound of the diving klaxon, the stokers would rush to shut off the fuel and stop the fans and pumps. As the noise died down the heat would rise; finally one man would climb to the top of the boiler to shut off the main-steam valves before staggering, in a state of near collapse with the heat, into the air lock which led into the engine room.⁶⁸⁵

⁶⁸³ H. M. Fardell, "The "K" Submarines," *The Naval Review* VII, No 2 (1919). 234.

⁶⁸⁴ Ibid.

⁶⁸⁵ D. Everitt, *K Boats: Steam-Powered Submarines in World War One*, (1999), 69.

William Piggott was advised to join the submarine service in 1917 by the commander of the *Royal Oak* after losing both his parents during the war. The commander had told the young seaman wireless operator that he would be 'financially better off in submarines.'⁶⁸⁶ After submarine training, Piggott joined *K-5*, although he commented that he was far from impressed with the organisation of the boat. The captain was known as 'mad Hutchins' and Piggott claimed that he was universally disliked as he was prone to verbally abuse the crew. Piggott recalled that Hutchins had the fuses removed from the two electric galley stoves as he considered the battery to be sacrosanct and therefore it was required to be kept fully charged at all times in case of an emergency. As a result, Piggott recalled that while he served in *K-5* no hot food was ever cooked on the electric ranges while the boat was at sea. Piggott did not mention whether the coal-fired range was ever used.⁶⁸⁷

Piggott recalled that on 31st July 1918 he was in the conning tower of *K-5* struggling to raise the aftermost of the two hydraulically operated telescopic wireless masts. Hutchins, the Commanding Officer (C.O.), saw Piggott and, concerned for his safety, ordered the Chief Stoker and a stoker to relieve him with the comment that the boat would be lost if the wireless operator fell overboard, but wouldn't, 'if they only lost a couple of stokers.'⁶⁸⁸ This comment alluded to the fact that while there were several stokers amongst the crew of the boat there was only one signaller who the captain could ill afford to lose, nonetheless, the comment had tragic consequences. Shortly afterwards a wave washed Chief Stoker George Booker aged forty-one and First Class Stoker Michael Jordan aged twenty-six overboard. Despite a lengthy search neither man was recovered.⁶⁸⁹ The C.O. declared the cause of death of both men as, 'washed overboard and drowned.'⁶⁹⁰ Piggott was later 'lent' to *K-4* and very nearly lost his own life during the 'Battle' of May Island when *K-4* went down but managed to stay afloat long enough to be rescued.⁶⁹¹

⁶⁸⁶ William Piggott, *I.W.M. 12235* (London, Imperial War Museum Sound Archive, 1991), Audio Tape 15 Reels, Reel 6.

⁶⁸⁷ *Ibid*, Reel 7.

⁶⁸⁸ W. Piggott, *I.W.M. 12235*, Reel 7.

⁶⁸⁹ TNA, ADM 173-6134, *Log of Submarine K-5*, ed. Admiralty (London, Admiralty, 1918).

⁶⁹⁰ *Ibid*, Form S, 544 Return of Deaths on Board H.M. Submarine "K-5".

⁶⁹¹ W. Piggott, *I.W.M. 12235*, Reel 8.

While the loss of these two stokers was a tragic and unusual accident, stokers would go on to earn a reputation in the submarine service for becoming masters of the art of submarine escape in extreme circumstances. S.P.O. William Brown survived an unusual double submarine tragedy during a submarine exercise conducted on 15th August 1916. Three 'E- Class' boats set out from Harwich for an exercise to practice attacking a surfaced submarine while remaining dived. During a dived attack on the surfaced *E-41* something went wrong and *E-4* struck *E-41* causing both boats to immediately sink. *E-4* was lost with all hands while only thirteen out of thirty men initially survived from *E-41*. Remarkably, one and a half hours after the last of the survivors had been pulled out of the water S.P.O. Brown was spotted 'bobbing' out of the water like a cork.

Chief Stoker Oliver added to the list of single handed submarine escapes by stokers when he became the sole survivor from the elderly *H-49* after she was attacked by German anti-submarine trawlers off Texel, Holland in October 1940. After a succession of depth charge attacks Davis Submerged Escape Apparatus sets (D.S.E.A.) were distributed amongst the crew, however there were not enough sets to go round so Oliver courageously volunteered to go without. After a final failed attempt to regain the surface the boat began to sink at which point Oliver became aware of a circular light above him in the engine room. During the depth charge attack the engine room hatch had lifted and Oliver by now only semi-conscious found himself drawn to it and onwards to the surface where he was picked up by one of the vessels which had attacked his boat.⁶⁹²

A similar miraculous escape was made from the *Perseus* after she struck a mine in the Mediterranean in 1941. Stoker John Capes was a passenger onboard the *Perseus* on his way to re-join his own boat *Thrasher* lying at Alexandria. Capes was asleep in the stoker's mess in the after-ends (stern of the boat) when a devastating explosion sent *Perseus* to the sea-bed. On

⁶⁹² J. Parker, *The Silent Service: The Inside Story of the Royal Navy's Submarine Heroes*, (London, 2001), 96. DSEA consisted of a mouthpiece connected by a flexible tube to a rubber bag which had an attached canister of oxygen enabling the wearer to breathe under water during escape.

investigation, Capes found the boat completely flooded forward of the engine room indicating to him that everyone in the forward section of the boat had perished. Retracing his way back aft Capes found all the electricians had been electrocuted in the motor room probably through falling on the live switch-gear. Apart from himself there were only three other survivors who Capes found badly injured in the engine-room.

After an epic struggle Capes managed to flood the engine room and equalise the pressure in the compartment with the outside sea pressure. He dressed the three other survivors in D.S.E.A gear and after giving each man a tot of rum from his own bottle Capes pushed each man out of the boat being the last to leave. On gaining the surface Capes found that he was the sole survivor, the injured men having failed to reach the surface. After another trial of strength Capes swam six miles to shore where he was found and looked after by sympathetic Greek villagers until he was picked up by British agents in 1943 and returned to Britain via Turkey.

At the time, and for many years after the war, Cape's story was thought to have been so far-fetched that many disbelieved he had ever been in the boat. However, in 1996 the *Perseus* was found by a Greek diver in exactly the state and position Capes had described. Divers subsequently verified that the aft escape hatch was still open and even found his rum bottle lying at the foot of the ladder where he had dropped it. As the son of a Diplomat and a former public school boy (Dulwich College), Capes was something of an enigma as he had the education to join the Navy as an officer but instead chose to serve as a stoker. For his wartime exploits Capes was awarded the British Empire Medal, he retired from the submarine service as a Chief Stoker in the 1950s.⁶⁹³

'Up spirits' submarine rum issue

One aspect of daily submarine life that differed greatly to the routine employed in G.S. was the tradition of 'up-spirits' at noon each day which signalled the issue of the daily 'tot' of rum to the lower-deck. The official ration

⁶⁹³ J. Winton, *The Submariners: Life in British Submarines 1901-1999*, 137-43.

was an eighth of a pint of rum per man each day which was issued neat to G.S. senior ratings (petty officers and above) but diluted with two-parts water for junior ratings. However, because water was such a scarce commodity in submarines, both junior and senior ratings received their rum ration neat. Submarines traditionally remained dived during daylight hours, therefore the traditional routine of midday 'up-spirits' was impracticable. While a boat remained dived the crew were expected to display a high level of alertness and, even when a man was 'off-watch' and resting, he could be expected to be called upon at any minute to go to his action or emergency stations or to repair an important piece of machinery or equipment. At the same time, dependent on how long the boat had been submerged, the atmosphere inside the boat would have been subjected to increasing levels of carbon dioxide. In addition, while the boat remained dived the galley remained out of action leaving the men with empty stomachs. Issuing rum to men under these conditions would have been dangerous in the extreme; therefore, rum was only issued to submariners at the commanding officer's discretion and then usually only during the hours of darkness when the submarine was on the surface charging batteries and after the men had had their hot meal.

Because submariners' received their rum neat, a widespread, but illegal practice developed whereby men would save their 'tot' by storing it in a bottle to be drunk when convenient or used to barter for 'favours' in the dockyard. Rum could also be smuggled ashore at the owner's peril to be given as a present or shared with friends. In submarines a 'blind eye' was adopted towards this illegal practice and provided nothing untoward occurred the men were left to their own devices as far as their rum was concerned particularly when it might be used for the benefit of the boat. Signaller Piggott recalled that he traded his bottle of 'neaters' (neat rum) in the dockyard for a submarine wireless generator when the generator on *K-5* became flooded.⁶⁹⁴

Eustace Godden tried to join the Navy as a boy artificer at the age of fifteen and three quarters before the First World War, however his parents refused to sign his papers so he obtained a job as a butcher's boy. With the

⁶⁹⁴ W. Piggott, *I.W.M. 12235*, Reel 9.

outbreak of war Godden applied to join the Navy again but, being still under eighteen years of age he was classed as a boy and was refused entry. Undeterred, Godden travelled from his home in Colchester to London where he made another application at the Admiralty. Third time lucky, Godden was finally offered entry as a stoker with no questions asked about his age. After initial training Godden was drafted to the *Chatham* a four funnelled light-cruiser operating from Bombay. However, before his troop ship arrived at Bombay the *Chatham* had been ordered to the Dardanelles. Godden eventually joined his ship and remained in the Dardanelles until the evacuation in 1916. While he was in the Dardanelles Godden admitted that he was 'stirred' by the exploits of the British submarines which were operating in the sea of Marmora and particularly remembered *E11* returning from her successful first patrol.⁶⁹⁵

After further service on a small destroyer, Godden volunteered to join the submarine service claiming to have been 'heartily sick of breathing in coal-dust.' On completion of submarine training Godden was drafted to Harwich where he joined *E-42* as permanent crew. Godden remembered that it was 'superstitiously fatal' to ask to leave a boat which was the reason why submarine crews stayed with a boat for as long as they could.⁶⁹⁶ On *E-42* none of the crew consumed their rum ration, Godden remembered that they just had a 'teaspoonful every now and then,' the rest being stored in a gallon jar. However, on Armistice morning when the Cox'n issued rum Godden stated that everyone got 'blind drunk' and it took a long time the following day to get everyone back on-board and sobered up. After a 'stiff lecture' from the First Lieutenant the boat sailed to patrol the Dogger Bank, although because of the armistice the captain was under orders not to attack any targets.⁶⁹⁷

In conclusion, this chapter has shown that despite the best efforts of the Admiralty its fledgling collection of submarines quickly became a specialised and separate arm of the naval service adopting its own unique operational ethos and language. In hindsight the Admiralty's attempt to restrict the amount

⁶⁹⁵ Eustace F. M. Godden, November 16th 1984. 1, Letter from Godden to Gus Britton, Curator Royal Naval Submarine Museum, 8-9.

⁶⁹⁶ Ibid.

⁶⁹⁷ Ibid, 10.

of time a man could serve in submarines in order to prevent this happening would never have succeeded as submarines are specialised vessels requiring men with the right temperament, skills and technical ability. In the early years of submarine development there was a distinct lack of volunteers despite the lure of extra pay therefore, every fully trained submariner was needed in order to train others and to provide continuity of service. Submariners then, and now, became much more attached to their boats than men in general service did to a ship. Submariners often spent several years in the same boat to the extent that it was thought 'unlucky' to move from one to another.

In the early days submarines lacked any of the basic amenities that were taken for granted in even the smallest ships of the Navy such as hammocks, heads, and cooking apparatus. That men, willingly volunteered to serve, and indeed seemingly enjoyed serving in these dangerous, uncomfortable and unpredictable vessels is even more remarkable despite the attraction of increased pay. Submarines were inherently dangerous and many were lost in the first half of the twentieth century, nonetheless the service remained essentially a volunteer service and even men who were compulsorily drafted into submarines grew to accept the life. For stokers and E.R.As already used to the dangers of a working life deep in the bowels of ships surrounded by steam, hot oil, coal dust and fire, the additional hazards of service in submarines did not materially add to their concerns. They were more occupied with getting to grips with the new technical challenges that submarines offered and learning new skills such as manning the hydroplane controls that kept the boat on depth, acting as lookouts and steering the boat; the type of jobs that in G.S. were exclusively confined to seamen.

Because of the poor living conditions that existed in submarines, submariners were often derided by officers and men from G.S. for their apparent slovenly appearance and lack of conformity towards naval traditions and procedures. However, these attacks only served to strengthen the bonds that existed between officers and men and between the various branches that made up a submarine's crew. This unique bond ensured that stokers in submarines, unlike their counterparts in the Fleet, were firmly on an equal and

equitable social footing. There was no class distinction in a submarine, everyone faced the same danger and therefore each man was equal to the next. The irony of the development of submarines from a stoker's point of view was that stokers (and E.R.As) successfully managed the change from the manual labour of coal fired steam to the new cleaner, but more dangerous petrol powered internal combustion engine. This was followed by the safer and more reliable diesel engine until the wheel turned full circle and submarine stokers found themselves once again in front of oil-fired furnaces. However, in 'K-class' submarines stokers had to swap their fearnought trousers, wooden clogs and sweat rags for 'sea boots and full oil skins.' From the demise of the steam driven K-Class submarine in the early 1920s it would take another forty-five years and one more turn of the wheel before stokers once again found themselves in steam driven submarines, this time in the aptly named nuclear powered boat *Dreadnought*.

Chapter 7

Stokers – the weakest link?

One common theme which this thesis has set out to challenge is the enduring contemporary and modern historical assumption that stokers lacked the traditions of the service and were ill-disciplined compared to seamen and others. One reason for this assumption lies in the fact that stokers joined the service as men at the age of eighteen years of age and after completing basic training went to sea to learn 'on the job' as relatively 'green hands.' Whereas, seamen by contrast, were recruited as boys or youths and 'grew-up' in the service inheriting the traditions that stokers were thought not to have had time to assimilate. However, it has already been shown in chapter two that stokers were more likely than seamen to re-engage for further service after completing their first engagement or to re-join the service within twelve months of leaving. Furthermore, from the evidence presented stokers were also less likely to have been discharged as undesirable or to have deserted; surely an indication that they had embraced the traditions and culture of the service?

With regards to their lack of discipline, Stoker George Wells who served in the *Good Hope* provided evidence that half of the stokers in his ship had previously served in the Army and had been awarded the Army General Service medal indicating that they had completed active service in a military campaign. While it is not possible to quantify the number of former military men who joined the stoker ranks, there is sufficient anecdotal evidence to suggest that this was a relatively common occurrence. Therefore, the stoker ranks must have had more military experience than they were given credit for. It is inconceivable that men who had prior military experience would have been as ill-disciplined as we are led to believe. Finally, stokers had arguably the most physically demanding and dangerous occupation than any man onboard. They worked in claustrophobic coal-bunkers devoid of breathable air or in front of roaring furnaces deep in the bowels of the ship where escape in time of emergency was almost impossible. These were not jobs for the faint hearted and must have

taken enormous courage together with the highest levels of self and collective discipline.

Stokers' discipline

Writing from his flagship *Orion* in 1921, the C-in-C Portsmouth made the following observation:

Having twice been concerned with insubordinate stokers at Portsmouth in 1906 as Flag Captain to C-in-C and in 1921 as Vice Admiral Commanding the Reserve Fleet I submit the following for consideration. In 1906 a mutiny occurred among the stokers in Portsmouth naval barracks. In 1921 the stokers of number 2 battalion (Portsmouth) Reserve Fleet outnumbered seamen and a considerable higher proportion of the former had been insubordinate. So, evidently fifteen years after 1906, the stoker's are still the weakest link in the chain of naval discipline.⁶⁹⁸

While this rather damning accusation was made in 1922, it perfectly reflects the point made by Christopher McKee in 2002 when he observed that the negative stereotype had stuck to stokers with all the adhesive excellence of 'Tar Baby.' Therefore, in order to determine the actual disciplinary record of stokers, this chapter will need to delve beneath the negative stereotype and concentrate on the facts.

Between 1861 and 1937, fifty-nine mutinies or incidents of collective indiscipline occurred in the Royal Navy. These incidents include the Portsmouth Barracks and R.F.R. Battalion mutinies referred to above, together with the infamous Invergordon mutiny which involved upwards of 12,000 sailors and marines. Contrary to the statement that accused stokers of being the 'weak-link' in the chain of naval discipline, Admiralty records show that forty-eight mutinies were staged by seamen, eight by stokers, two by seamen and stokers combined and one by the 6th Battalion Royal Marines.⁶⁹⁹

⁶⁹⁸ TNA, ADM 1/8627/118, "Training of New Entries: Report on the Training and Discipline of Stokers," ed. Admiralty (Admiralty, 1922).

⁶⁹⁹ Admiralty, *Mutiny in the Royal Navy: 1691-1937*, ed. Tactical and Staff Duties Division, 2: vol. 1 & 2 (London, 1933).

The suggestion that stokers were ill-disciplined is clearly incorrect as seamen participated in mutiny at a ratio of 6:1 compared to stokers.⁷⁰⁰ One reason why stokers were invariably singled out for censure was their poor status within the Navy in general, and on the lower-deck in particular. In a debate on discipline and punishment in the Navy a naval officer contributed the following observation:

Punishment must also vary according to the degree of responsibility held by the offender. For example, a young stoker who breaks his leave 36 hours is liable to a fine of 12 days' pay, and in addition, to have 12 days' leave stopped. When this punishment is completed it is done with, and will not affect his future career. An officer, on the other hand, who fails in a similar manner is liable to be tried by court-martial, the results of which he may never recover from professionally. The reason for this is obvious; the stoker has very little status, and no responsibility; his absence will not materially affect the ship.⁷⁰¹

The earliest record of a stokers' mutiny was that which occurred in the *Porpoise* on the Australian station in 1898. The ship's captain was unhappy with the rate of steaming and ordered the stokers into two watches as a punishment which meant they would only receive four hours off between each watch instead of eight. As a result, four men refused to go on watch. In order to regain discipline the captain sentenced the four offenders to ninety days hard labour and then mustered the stokers and threatened to flog them should there be any further disobedience. The captain and his C-in-C were both later censured by the Admiralty for threatening to flog the men after it was pointed out that the power to award flogging had been removed from ships' captains in 1881.⁷⁰²

Stoker Richard Rose remembered that while he was undergoing training at *Victory* barracks Portsmouth in 1912 he had to cross the parade ground at the 'run' as Portsmouth was considered to be still under punishment after the 'Collard mutiny' that had occurred there in 1906. Rose considered the discipline at Portsmouth was the strictest of all the depots, describing the other depots as being 'free, of that kind of thing.'⁷⁰³

⁷⁰⁰ Admiralty, *Mutiny in the Royal Navy: 1691-1937*.

⁷⁰¹ "A Few Lectures on Naval Discipline," *Naval Review* 7, no. 4 (1919).

⁷⁰² TNA, ADM 156/157, Cases of Mutiny in the Royal Navy: H.M.S. *Porpoise* 1898.

⁷⁰³ R.F. Rose *I.W.M. 754*, (London, Imperial War Museum), 18.

In her description of the disturbances at Portsmouth, Mary Conley incorrectly attributed them to discontentment by the stokers over 'work, pay and discipline,'⁷⁰⁴ an allegation that has also been made elsewhere.⁷⁰⁵ However, the incidents that occurred in the barracks over the 4th and 5th of November 1906 had a much simpler cause and stemmed from a single order used improperly by an over-zealous Gunnery Lieutenant to a duty-watch of newly entered, second class stokers.

During evening quarters on the 4th November the duty watch made some noise while being mustered after it began to rain. The stokers' were adjudged to have been to blame and the officer in charge Lieutenant Collard ordered them to go 'on the knee' so that he could reprimand them. This obscure and little used gunnery order was seen as a humiliation by the stokers who initially refused to obey until Collard persisted and they eventually went on the knee.

Later that evening in the barracks canteen the stokers, who were no doubt aggrieved, were provoked after someone shouted at them, 'on the knee.' A large group of stokers rushed towards the wardroom officers' mess on the opposite side of the road in the vain hope of obtaining an apology from Collard, however the duty watch managed to shut the barracks gate confining the stokers to the barracks. After a noisy protest on the parade ground the Commodore spoke to the stokers who eventually calmed down and retired to their respective messes. As a precautionary measure the barracks gate was locked that night and again the following night although this had an unforeseen consequence.

The following evening, men returning from leave found they were unable to gain access to the barracks and congregated outside the main gate. They were joined by a large crowd of civilians at which point the crowd turned violent and stones were thrown at the wardroom windows. The stokers in their mess-decks heard the commotion and attempted to leave their barrack blocks but the

⁷⁰⁴ Mary, A. Conley, *From Jack Tar to Union Jack*, 45.

⁷⁰⁵ D.J. Dwyer, *A History of the Naval Barracks Portsmouth*, (Portsmouth, Gale and Polden, 1961), 28.

guard had been called out and prevented them from leaving. Being unable to go anywhere, the stokers were alleged to have begun tearing their quarters apart while 'furnishings of all descriptions' were said to have been hurled out of the windows onto the parade ground below.⁷⁰⁶ Then again, as the photograph presented as illustration 7, p. 131 graphically illustrates, there were no furnishings of any description in the men's quarters, indeed they had precious little to destroy other than a mess table, some benches and pots and pans. After several hours, the crowd outside the barracks was dispersed after being repeatedly charged by city police and Royal Marines.

Eleven stokers were subsequently arrested, charged and tried by courts-martial for inciting or participating in mutinous conduct out of the 458 stokers who were in barracks over the two nights of the disturbances. Despite the fact that no violence was used, and only relatively minor damage caused, the eleven stokers identified as ring-leaders were sentenced to periods of imprisonment ranging from six weeks to five years. Inevitably, the incident allowed the popular press to depict the disturbances as much more serious than they actually were (See Illustration 11, p. 268). It also brought forth a backlash from the press and members of the general public who offered strong criticism towards the value and worth of stokers as the following example shows:

It is we think an altogether new thing to bring together in any barracks such a large number of recruits, particularly when it is remembered that the stokers are not drawn from a very promising class of society, and are likely to chafe under the unusual restraints of naval life. The occurrence, in fact, cannot altogether be admitted or accepted as belonging to the Navy since these men, or the majority of them, had never been to sea and knew next to nothing of the conditions obtaining on board a man-o-war. It is obvious also that the measures and methods of preserving discipline on board ship may not necessarily be suitable or sufficient for the maintenance of order among such a large number of newly-raised men on shore. It is conceivable, too, that among such a large number of men raised as these have been without, it would seem, any very high qualifying standard of character, or any strict inquiry of antecedents, there would exist, almost necessarily, some elements tending to disorder and rebellion.⁷⁰⁷

⁷⁰⁶ D.J. Dwyer, *A History of the Naval Barracks Portsmouth*, 26.

⁷⁰⁷ "The Trouble at Portsmouth," *The Army and Navy Gazette* (1906), 1068.



Illustration: 11 Newspaper image of the Portsmouth Barracks Disturbances

Source: *The Daily Graphic* 8th November 1906.

This image describes the stokers as acting 'as madmen'. No stokers broke out of barracks or into barracks on the second night of disturbances. The crowd outside the barracks numbered several hundred and was composed of sailors locked out of barracks and civilians. The stokers inside barracks were all confined inside their mess-decks under armed guard and took no part in the disturbances outside on the highway.

The author of the official history of Portsmouth barracks claimed in 1961 that the story of this incident was still of importance because critics claimed at the time that the riots occurred through the policy of keeping large numbers of men in barracks for long periods of time.⁷⁰⁸ However, records indicate that there were only 390 stokers in barracks on the night of 4th November 1906 and 458 on 5th November, compared to over 1,000 seamen on each of the two nights that the disturbances occurred. Therefore, while the stokers were undeniably to blame for creating the disturbances, they were in the minority compared to seamen.⁷⁰⁹

The large number of ratings absent from barracks on each night (approximately half of all seamen and two thirds of marines and stokers), further suggest that these men exercised their option to stay on shore at their own expense, as described by Stoker Leary in chapter four, rather than suffer the discomforts of barrack routine. After a short enquiry the Admiralty concluded that the disturbances stemmed from the following causes:

1. A feeling of resentment on the part of the stokers caused by the misuse of the drill order 'on the knee.'
2. The retention of the stokers on parade on the Sunday afternoon during rain, and the subsequent want of judgement shown in dealing with them.
3. The want of proper supervision and control in the canteen.⁷¹⁰

By singling the stokers out and exaggerating the cause of the disturbances at Portsmouth, Mary Conley *et al* resorted to the negative stereotype and made it stick like the proverbial 'Tar Baby,' In her discussion of the 'stokers' mutiny' Conley ignored the fact that seamen had committed eleven out of the fourteen mutinies up to 1914 (stokers having committed three). There may well have been widespread discontent amongst stokers, particularly with regards to their being denied the right to promotion to Warrant Officer, a right enjoyed by every other branch in the service. However, this had absolutely no bearing on the disturbances. Despite the allegations made with regards to the

⁷⁰⁸ D.J Dwyer, *A History of the Royal Naval Barracks Portsmouth*, 1961), 24.

⁷⁰⁹ "Seamen, Marines and Stokers in the Royal Naval Barracks on 4th and 5th November," ed. House Of Commons (London, Hansard, 1906).

⁷¹⁰ "The Disturbances at Portsmouth-Admiralty Minute," (London, Hansard, 1906).

stokers mutinying over 'work, pay and discipline,' their protest was far more fundamental and involved a simple perceived injustice.⁷¹¹

Commodore Stopford, the Commanding Officer of Portsmouth naval barracks harboured his own views on the cause of the disturbances. In a private letter to the Second Sea Lord he admitted that the naval depot had been 'like a volcano' for the twelve months preceding the disturbances. In his opinion, the immediate blame for the events was attributable to 'Army deserters, (a further reference to ex-military men re-joining the service as stokers), socialist vagabonds, and the other riff-raff we have as stokers.'⁷¹² Stopford obviously shared the fear that was common among many senior officers during the early years of the twentieth century that socialist propaganda was being promoted on the lower-deck. This led to suspicion that men were being influenced to join secret communist cells which would eventually lead to sedition and mutiny. In 1924 the Admiralty Intelligence Division became so alarmed over the perceived spread of communism throughout the fleet that it prompted the Admiralty to issue a secret notice to all Commanders-in-Chief warning them that newspaper boys were spreading communist propaganda under cover of delivering newspapers to ships and establishments.⁷¹³ Furthermore, Stopford's assessment that the barracks had been 'like a volcano' implies that the men were simmering with discontent. This is unsurprising bearing in mind the almost 'prison like regime' forced upon the men by the barracks 'Red Book' regulations referred to earlier in chapter four.

Lt Collard was tried by court-martial on two charges, the first accused him of giving Stoker Albert Acton an unauthorised punishment on 24th November 1905 (twelve months prior to the Portsmouth disturbances), and using abusive language towards him by ordering him 'on the knee-you dog.'⁷¹⁴ There were unsubstantiated rumours that Collard had paid stoker Acton a sum of money to keep him from making an official complaint in 1905. Collard was

⁷¹¹ 'Mutiny in the Royal Navy,' (Admiralty, 1933), 2: vol.1. 171-2.

⁷¹² A, Carew, *The Lower Deck of the Royal Navy 1900-1939*, 65.

⁷¹³ TNA, ADM 1/8657/48, Communist attempts at introducing propaganda into H.M. Ships by means of newspaper boys delivering newspapers on board ships in harbour, (Admiralty, 1924).

⁷¹⁴ TNA, ADM 1/7895, "Court Martial Lieutenant B St G Collard," ed. Admiralty (Admiralty, 1906).

found guilty of ordering stoker Acton 'on the knee' but the charge of using abusive language was not proven. He was also acquitted on the second charge of committing an act to the prejudice of good order and naval discipline by making improper use of the order 'on the knee' that caused the stokers to make their public protest. Collard was ordered to be reprimanded.⁷¹⁵

In *The Great Naval Game*, Jan Rüger examined the importance of the mass market on the 'naval theatre' and the way in which it was expressed in the discourses and practices concerned with the role of the 'crowd' and 'the masses.'⁷¹⁶ Rüger observed that while the naval authorities attempted to utilise the 'naval stage' for their own interests in order to educate the public, the forces of mass culture also had a strong grip on this arena through the power of the press. The following illustrations (See Illustration 12 and 13, p. 272) illustrate the 'strong grip' of mass culture on the 'naval stage.'

⁷¹⁵ TNA, ADM 1/7895, "Court Martial Lieutenant B St G Collard."

⁷¹⁶ Jan Ruger, *The Great Naval Game*, 87-91.

Illustration 12:



Illustration 13:



Illustration: 12 and 13, Contemporary images of the Portsmouth Barracks disturbances 1906.
 Source: © National Museum of the Royal Navy (Portsmouth)

Beneath the humour, the two illustrations presented above suggest that the manner in which the stokers had been treated was at odds with the popular mood of the country despite some negative press in certain quarters. By 1906 Britain was engrossed with the 'cult of navalism,' as a result, the Navy and its sailors were held in high regard by many sections of society who depended upon them to defend the nation and Empire. Illustration 12 above, uses British 'bulldogs' to represent the stokers being ordered 'on the knee.' The choice of 'bulldogs' would appear to be symbolic and deliberate, as the breed has long been associated with the 'British bulldog spirit.'⁷¹⁷ Therefore, the choice of this particular breed strongly suggests that despite their involvement with the 'disturbances,' and their subsequent treatment by the naval authorities, stokers were regarded by some as displaying the same strong, national bulldog spirit that the Navy represented in its defence of the nation and Empire. Moreover, by substituting the officer with a small and insignificant monkey in contrast to the strong dogs, would imply that naval authority had been small minded, weak and out of touch with the mood of the country, compared to the strength and determination of the stokers.

Interestingly, while illustration 13 above, also used a dog to represent the stokers, it had a completely different symbolic meaning. The English nation has long been considered to be a nation of 'dog-lovers.' Equally, the dog is often used as a metaphor to describe a negative situation with the use of such terms as 'to lead a dog's life,' to be 'beaten like a dog,' or to be in 'the dog house.' Therefore this illustration implied that the Navy had treated its stokers as mere 'dogs' and not as the strong and patriotic sailors that existed in the popular consciousness. Indeed, even though Lt Collard had not used the term when giving the order 'on the knee,' in 1906 it was alleged by the editor and naval advocate Stephen Reynolds that the order 'down on the knee you dogs' caused a 'blaze of excitement throughout the Navy;' not on account of the order alone, 'but because men felt that in general they were looked upon as 'dogs' by their officers.'⁷¹⁸

⁷¹⁷ George, C Nasmith, *Canada's Sons and Great Britain in the World War*, (J.C. Winston, 1919), Digitised by the University of California, 2010, 72. 'It was the unconscious expression of the British bulldog spirit and it carried the British Empire through to Victory.'

⁷¹⁸ Stephen Reynolds, "Navy Discontents," *English Review* 9 (1911). 522.

The order given to the stokers to go 'on the knee,' harked back to an earlier time when sailors were considered to lack responsibility and where they attracted the demeaning image of 'Jolly Jack Tar.' However, as Mary Conley pointed out, by the early 1900s the Navy had achieved a cult-like status while the heightened profile of the Navy within society encouraged naval men to begin to assert their own manhood as educated, responsible professionals.⁷¹⁹ The irony of the Portsmouth Barracks affair was that it occurred the month after H.M.S. *Dreadnought* put to sea to begin her trials. Therefore, instead of basking in the glare of its technical prowess, the Admiralty appears to have compromised its standing in the public arena by demonstrating that it remained locked in tradition with an out-dated attitude towards the lower-deck. This was aptly summed up by Stephen Reynolds who commented that reform in the Navy was unlikely since the Admiralty was, 'notoriously clever at moving without progressing.....at altering things without changing them.'⁷²⁰

Eleven stokers were convicted of participating in the trouble at Portsmouth. Stoker Edward Moody was identified as the ring-leader and was convicted of two charges of inciting stokers to join a mutinous assembly for which he received the longest sentence of five years penal servitude. However, shortly after the judge advocate confirmed the sentence, it was reduced by the Admiralty to three years.⁷²¹ Although Collard's reprimand did not impede his naval career he was involved in a highly publicised scandal while serving as junior Rear-Admiral of the First Battle Squadron in the *Royal Oak* at Malta in 1927. As a result of Collard's bullying manner towards his junior officers two were court-martialled and while Collard himself was not charged he was immediately placed on the retired list after just three months as a flag-officer.⁷²² This incident gives rise to speculation that Collard was prone to treating his subordinates badly, something that had already been demonstrated during his previous court-martial at Portsmouth in 1906.

⁷¹⁹ Mary A Conley, *From Jack Tar to Union Jack*, 123.

⁷²⁰ Stephen Reynolds, *The Lower Deck, the Navy and the Nation*, (London, J.M. Dent, 1912), 99, in Mary Conley, *From Jack Tar to Union Jack*, 54.

⁷²¹ The Disturbances at Portsmouth, Admiralty Minute, (London, Hansard).

⁷²² Leslie Gardiner, *The Royal Oak Courts Martial* (London, Blackwood, 1965). 223-4.

Although the fictional character 'John Bull' had existed since the early eighteenth century, by the turn of the nineteenth century the figure had become popularly regarded as a representation of the heroic, archetypal Englishman, or as Mary Conley noted; the 'Imperial Father' figure.⁷²³ As such, John Bull became a popular feature in mass advertising of the period while he also appeared in British editorial cartoons and in political satire. John Bull was often portrayed with a bulldog at his side, therefore, it is unsurprising that his figure was used to question the validity of Stoker Moody's five year sentence as depicted in the following illustration, (See Illustration 14, p. 276.)

Inevitably, there was a backlash in certain sections of the press towards the stokers' disturbances, but equally there was a measure of support from unlikely quarters. In offering a defence for their actions, one S.P.O. writing to *The Fleet* indignantly observed:

From the tone of the press throughout the country of late anyone would think naval stokers were the scum of the country, refuse of the gutter. One writer claimed them to be "recruited from the lowest social scale". The trouble at Portsmouth was entirely blamed on the stokers which has blackened their character while they have been accused of every social evil making the stoker a kind of social leper whose presence in the Navy is only tolerated as a kind of necessary evil.⁷²⁴

The indignant S.P.O. would have been gratified to read the following extract of a letter to *The Times* which offered some support for the plight of the stokers. The correspondent pointed out that at the time of the disturbances there were over two hundred of the *Nelson's* stokers resident in the barracks and not one of them became involved. Moreover, it was reported:

The captain of His Majesty's ship *Nelson* has, I am informed, lodged a protest with the Commander-in-Chief at Portsmouth against the unfounded slur cast by erroneous rumour upon these young stokers, and the public will, I believe, gladly assist to dispel the prejudice and the disfavour that has so unjustly fallen upon them. Further, the immediate cause of the incident shows that there should be a readjustment of the relationship between bluejackets and stokers, with a view to a nearer approach to amalgamation.⁷²⁵

⁷²³ Mary A Conley, *From Jack Tar to Union Jack*, 125.

⁷²⁴ "Correspondence: Stokers," *The Fleet* 3, no. 21 (1907).

⁷²⁵ Rollo Appleyard, "The Trouble at Portsmouth," *The Times*, 12 November 1906.

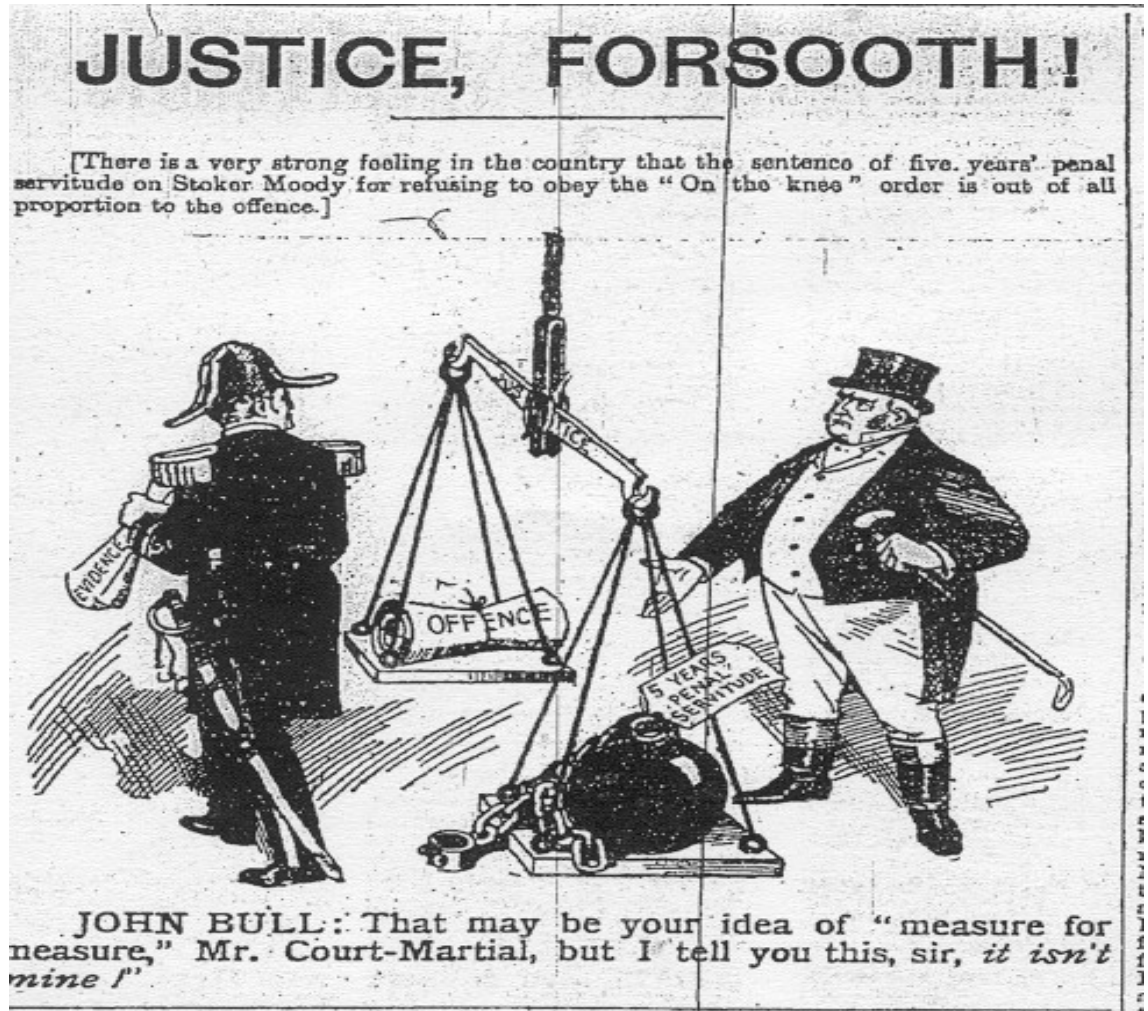


Illustration: 14 John Bull cartoon

Source : *Reynolds News* 2nd December 1906

The comment above suggests that despite there being several hundred stokers in the barracks during the disturbances, only a small number actually became actively involved. Moreover, because of the nature of the order given to the stokers it can be assumed that they reacted in the way they did because they were recent recruits, whereas the experienced men belonging to the *Nelson* did not become involved. In addition, the commentator correctly identified that there were serious underlying issues with relationships and working practices between 'bluejackets' and stokers.

The stokers' mutiny which occurred in the King Edward VII class battleship *Zealandia* in February 1914 offers another example of a lower-deck mutiny caused through excessive discipline and poor treatment from senior officers. The mutiny and the results of the ensuing courts-martial led Carew to suggest that the *Zealandia* affair 'was potentially the most serious mutiny afloat before the Great War.'⁷²⁶ The *Zealandia* had commissioned in May 1912 and by the end of 1913 had settled down to what was described as a 'very reasonably and happy ship.'⁷²⁷ However the announcement that the captain and commander were to be replaced by Captain Walter Cowan and Commander Halton Lecky caused a 'wave of despondency' to course through the ship, suggesting that these two officers may have had a reputation for strong discipline.⁷²⁸

A midshipman serving in the *Zealandia* at the time described the mutiny as having been made 'virtually inevitable by the sadistic paranoia of the ship's commander.' On taking over as commander of the *Zealandia*, Lecky introduced a raft of petty restrictions including limiting the times and places where officers and men could smoke while also changing established ship's routines, stations and drills. The new routines were practiced on make and mend days so as not to interfere with normal ship's routine thereby denying the men any time off. The happy ship was alleged to have quickly become an unhappy ship, without any apparent change in the standard of discipline.⁷²⁹

⁷²⁶ A, Carew, *The Lower Deck of the Royal Navy 1900-1939*, 70.

⁷²⁷ H.B.C, "Naval Mutiny in 1914," *The Naval Review* LX, no. 3 (1972). 250.

⁷²⁸ Ibid.

⁷²⁹ Ibid.

While most of the changes introduced by Lecky affected all of the ship's company, some particularly disadvantaged stokers. When not on watch, stokers had to clean the ship's upper-deck bright work (brass and other metal fittings), coal the ship's steam-boats and then attend morning divisions.⁷³⁰ The subsequent court of inquiry noted that these jobs were carried out entirely by seamen in every class of ship in the squadron other than the *Zealandia*.⁷³¹ These orders were clearly designed to make life difficult for the stokers in some way as apart from the short lived requirement for seamen to qualify in the stokehole for promotion, seamen were never required to undertake cleaning duties in the stokehole.

On 4th March 1914 the *Zealandia* coaled ship off Arosa Bay. It was described as a cold and wet day while the collier was small and poorly equipped for coaling which made the evolution difficult and unpleasant for all. Coaling was completed by four o' clock in the afternoon and the men expected to be sent to tea, however before they could partake of any refreshment they had to complete Lecky's special 'clean ship routine.' The men were given thirty minutes to clean down funnels and casings, all upper-deck paintwork and the upper-deck itself. Twenty minutes were allotted for cleaning internal mess decks, flats and passageways and an additional twenty minutes for the men to scrub their coaling suits. On completion, the hands were ordered to 'divisions with coaling suits for inspection.'⁷³²

All of the ship's company mustered as ordered except the stokers. The stokers were still busy below decks trimming bunkers and stowing coaling gear. When they completed their work below at seven o' clock that evening they washed and changed into clean clothing and were then ordered to fall in on the quarterdeck where Lecky challenged the stokers over their failure to obey his orders. Not being satisfied with their excuses Lecky charged all 168 stokers individually with failing to scrub coaling suits and failing to muster when ordered. The court of inquiry into the mutiny described this as an 'unnecessary and

⁷³⁰ TNA, ADM 156/157, "Court of Enquiry into Mutinous Conduct Amongst H.M.S. *Zealandia's* Stokers," ed. Admiralty (Admiralty, 1914).

⁷³¹ Admiralty, *Mutiny in the Royal Navy 1691-1937*, vol 1, 136.

⁷³² H.B.C. 'Naval Mutiny in 1914', 250.

impossible order' for the stokers to obey, as it recognised that stokers would be required to trim coal-bunkers long after coaling had ceased and their work would probably have continued into the following day. In addition, the court noted that twenty stokers had been ordered to remain on the upper-deck to polish bright work in the rain, from the moment coaling ceased therefore, these men were given no possible opportunity to wash their suits.⁷³³ The Admiral commanding the squadron noted:

The Commander is to blame for the very foolish order given to the stokers to clean bright work.⁷³⁴

During Lecky's lengthy investigation into the reasons why the stokers failed to obey his orders, he chose six of the senior stokers at random and had them placed under arrest. The remaining stokers were eventually allowed to go below at half past ten that night, having been made to stand on the upper-deck for three and a half hours after having coaled ship all day with no food or refreshment of any kind. The following morning none of the stokers reported for work and the warrant engineer reported to the Officer of the Watch that they could not be found in their mess deck or anywhere on the upper deck.

Unusually, the entire complement of stokers had mustered in the cell flat where men served their punishment and placed themselves 'under arrest.' The Master at Arms (ship's policeman) was sent to bring them up onto the quarter deck but they refused to move until their comrades were released. Lecky then ordered the Captain of Marines to bring the stokers to the quarter deck 'using violence if necessary.' However, at this point the stokers quietly mustered on the quarter deck.

The *Zealandia's* commanding officer, Captain Cowan, had been ashore the previous evening and was seemingly unaware of any problems onboard his ship. When informed of the incident of collective indiscipline he took no action other than ordering the stokers to return to work which they did with great

⁷³³ TNA, ADM 156/157, "Court of Enquiry into Mutinous Conduct Amongst H.M.S. *Zealandia's* Stokers."

⁷³⁴ H.B.C. 'Naval Mutiny in 1914', 4.

reluctance. Later that morning a note was dropped through a skylight into the Captain's cabin, which stated that the stokers would not raise steam the following day until the six men were released from cells and, that if anyone was to be punished it had to be a collective punishment. Cowan mustered all the stokers including the prisoners and informed them that they would all have their leave stopped for the remainder of the Spring cruise and would complete two hours of military drills every day until further notice. Cowan also reaffirmed that the stokers would continue to undertake work normally done by seamen.⁷³⁵

On receiving a report of the incident the C-in-C considered the disobedience to have been more serious and requiring stiffer punishment than that meted out. As a result, eight representative first class and four leading stokers were charged with mutinous assembly and wilful disobedience. The eight first class stokers were tried by courts-martial onboard the *Africa* on 18th March 1914 and sentenced to two years hard labour and dismissal from the service. The four leading stokers were tried the following day but acquitted through lack of evidence.⁷³⁶

During the courts-martial Lecky was asked whether he was aware of any lack of discipline or service routines by the stokers of his ship. In reply, he stated that his only complaint was that the stokers 'had a habit of singing songs when cleaning the ship's funnels.'⁷³⁷ After the incident *Zealandia* was ordered to be run on the same lines as the other ships of the squadron, thereby implying that the ship's routines, which were designed to purposely disadvantage stokers, had a great bearing on the mutiny. Furthermore, the absence of any intervention by the *Zealandia's* engineering officers was noted by the court of inquiry which censured the Engineering Commander for failing to make representations to the captain direct, an action which it was suggested may have averted the trouble.⁷³⁸ However, this suggestion overlooked the fact that like stokers on the lower-deck, engineers had no say in the running of the ship,

⁷³⁵ H.B.C. 'Naval Mutiny in 1914,' 4.

⁷³⁶ Ibid, 5.

⁷³⁷ TNA, ADM, 156/157, "Court of Enquiry into Mutinous Conduct amongst H.M.S. *Zealandia's* Stokers."

⁷³⁸ Ibid.

therefore it was improbable that an engineer would risk his career by criticising his captain's orders.

The court of inquiry noted with regards to the actions of Commander Lecky and Captain Cowan:

That subsequent to the appointment of Commander Lecky on 1st February 1914 and of Captain Cowan on 7th February 1914, considerable and, in some cases, unusual and, in the opinion of the court, unwise changes were introduced into the routine and treatment of the stokers after *Zealandia* had been nearly two years in commission. These orders appear to be the outcome of representations made by Commander Lecky. The court considers that orders for a steaming watch to attend divisions daily in harbour, to coal steam-boats and clean upper-deck bright work were unusual and injudicious.⁷³⁹

Lecky was identified as being 'chiefly to blame' for the mutiny and ordered to be immediately superseded in his position, placed on half pay and in the opinion of the Second Sea Lord, Sir John Jellicoe; 'should not be further employed.'⁷⁴⁰

The convicted stokers made a plea to the court that, because they were selected to represent the stoker complement for punishment, their individual culpability was no better or worse than any of the other men. They also pleaded that as they had already been punished for the offences they should not be made to suffer additional punishment. The court rejected the first plea, which was commented on later by the Admiralty who made the point that 'selecting men to face charges of mutiny by representation was an accepted custom.'⁷⁴¹ The court also rejected the second plea, however the First Sea Lord was of the opinion that the sentences awarded were 'out of all proportion to the offences committed and out of relation to the circumstances.' At a preliminary conference it was agreed in principle to reduce six of the sentences from two years hard labour to nine months detention, and two to six months detention.

⁷³⁹ TNA, ADM 156/157.

⁷⁴⁰ John Jellicoe, "Board Minutes on Court of Inquiry," in *TNA, ADM 156/157 Court of Inquiry into Mutinous Conduct Amongst H.M.S. Zealandia's Stokers* (London, Admiralty, 1914).

⁷⁴¹ *Ibid.*

At this conference the F.S.L. advocated 'the utmost urgency in having the Judge Advocate General (J.A.G) determine the validity of the proceedings.'⁷⁴²

The J.A.G. subsequently decided that 'a serious and substantial irregularity' had occurred during the courts-martial which had deprived the men of an effective defence.⁷⁴³ Therefore, the J.A.G. annulled all the sentences on the grounds that the court had not proved whether the prisoners had already been punished for the offences they were charged with, (the stoppage of leave and extra drill awarded by the Captain prior to the courts-martial).⁷⁴⁴

Around the same time as the *Zealandia* mutiny broke out, five stokers were charged and sentenced to short periods in detention for insubordination onboard the *Newcastle*. Remarkably, just as in the Portsmouth barracks and *Zealandia* incidents, this was also a case where the stokers had been ill-treated by the ship's executive officer. The C-in-C China deemed the *Newcastle*'s First Lieutenant 'was to blame for his treatment of the stokers as a whole' and he was summarily dismissed his ship.⁷⁴⁵ By comparison, after sixty seamen had mutinied onboard the minelayer *Amphitrite* in 1917, the captain ordered the marines to muster and munitions to be served out and then detailed off a number of 'older-stokers' to guard the prisoners as they were escorted out of their mess. This act demonstrated that in the *Amphitrite* at least, stokers appeared to have been more trusted by the ship's officers than seamen.⁷⁴⁶

The stokers' mutiny which occurred onboard the *Leviathan* in 1918 while the country was still at war could be termed 'the mutiny that never was.' Any mutiny which occurred during hostilities had the potential to seriously compromise the Admiralty and jeopardise the war effort while equally offering the prospect of dire punishment to those convicted. Yet this particular mutiny was allowed to quietly die down without the normal immediate repercussions

⁷⁴² John Jellicoe, "Board Minutes on Court of Inquiry."

⁷⁴² Ibid.

⁷⁴³ Ibid.

⁷⁴⁴ Ibid.

⁷⁴⁵ Hansard, "Insubordination among Crews," in *House of Commons Debate* (1914).

⁷⁴⁶ TNA. ADM 156/157, "Mutiny in the Royal Navy: H.M.S. *Amphitrite*," ed. Admiralty (Admiralty, 1917).

and punishments that inevitably followed such incidents. As with the *Zealandia* mutiny, the blame for the outbreak on the *Leviathan* was laid squarely at the feet of the ship's captain and commander who were both censured for their failings and poor management skills.⁷⁴⁷ The *Leviathan* was an old Drake-class armoured cruiser undertaking troop convoy duties between New York and Liverpool. The ship was dirty, overcrowded and through hard steaming had to take in 2,500 tons of coal at each port, a task that would typically take three to four days work from 6 am to 10 pm each day. This work seriously overworked the men, giving little time for leave or proper rest or to allow them to keep the ship and themselves clean.⁷⁴⁸

After one eleven day troop convoy from New York to Liverpool the *Leviathan* went to Birkenhead to coal ship. While the ship's company were engaged in coaling ship the captain announced that no leave would be given as a number of men had not returned onboard from the previous day and he could no longer trust them.⁷⁴⁹ In retaliation, 150 men still in their working rig walked off the ship in protest at the perceived slight on their characters and at the excessive amount of work they were undertaking. Many of these men returned to the ship later that day by using 'unauthorised gangways' and remarkably managed to go ashore again having had their tea and changed into uniform without anyone apprehending them. Despite mounting a guard on the dockyard gates to prevent further men illegally leaving the ship, a number of men forced their way ashore the following day.⁷⁵⁰

It quickly became apparent to the men that they could virtually come and go as they pleased as the ship's officers had lost control of the situation and did not appear to know how to bring the protest to a conclusion. After two days the protest ended but through incompetence on the part of the captain and commander, no man who had absented himself from the ship had been properly identified or charged.

⁷⁴⁷ TNA, ADM 156/89, "H.M.S. *Leviathan*: Outbreak Amongst Men at Birkenhead," ed. Admiralty (Admiralty, 1918).

⁷⁴⁸ *Ibid.*

⁷⁴⁹ *Ibid.*

⁷⁵⁰ *Ibid.*

After conducting a court of enquiry the Senior Naval Officer for Liverpool reported to the Admiralty that the cause of the trouble was a tactless remark made by the captain that had left a large number of young stokers feeling aggrieved, and in a state of agitation they had walked off the ship.⁷⁵¹ Subsequently, the enquiry found that sixty-two stokers and thirty-three seamen had gone absent without leave over the two days. When questioned by the court of inquiry to explain his actions, Stoker Jobb, who was a hostilities only rating, complained that prior to walking off the ship he had been coaling ship for two consecutive days and nights and claimed that he had not seen his hammock for the previous four nights.⁷⁵² In evidence the captain admitted that seven of his marines 'all of good character' with some awaiting promotion had also joined in the protest and had walked off the ship. However, when questioned, the marines claimed that they had not joined in with the main body of leave breakers, but had walked off the ship in order to find somewhere to bathe as they were 'fed up being dirty.'⁷⁵³ The *Leviathan* as with other ships of that era only had one bathroom which was reserved for stokers, the rest of the ship's company had to make do with buckets.⁷⁵⁴

While taking a dim view of the proceedings the Admiralty appeared at a loss as to the best way to handle this outbreak of insubordination. One senior officer recommended paying the ship off and dismissing the captain as being 'unfitted to command one of H.M. ships', however, this action was rejected on the grounds that the ship's company would be seen to have 'scored off the captain.' Another senior officer recommended that the term 'mutiny' should not be used in this case as no action was taken to restrain the men when the outbreak broke out or to apprehend them when they returned onboard.⁷⁵⁵

The *Leviathan* was allowed to complete coaling and return to her trooping duties with no action being taken against any of the officers or men of the ship, other than the captain and the commander incurring 'their Lordships

⁷⁵¹ TNA, ADM 156/89, "H.M.S. Leviathan".

⁷⁵² Ibid.

⁷⁵³ Ibid.

⁷⁵⁴ Ibid.

⁷⁵⁵ Ibid.

severe displeasure,' thus ending a most remarkable episode in the history of naval mutinies. Because no man had been charged there were no punishments forthcoming, equally the Admiralty, while being anxious to dismiss the captain and commander, were conscious of not giving the men any satisfaction in seeing their officers dismissed, therefore their hands appeared tied. By taking the line of least resistance, the Admiralty undoubtedly prevented poor publicity bringing the service into disrepute, while keeping the incident from the rest of the fleet thereby limiting any copy-cat walk outs.

The 2nd Battalion (Portsmouth) Royal Fleet Reserve mutiny, referred to at the beginning of this chapter, could be considered to have been a mirror image of the Portsmouth barracks disturbances. The battalion comprised approximately 1,000 men with just over half being stokers. It was called up to aid the civil power during the coal strike of 1921 and sent to Newport. From the beginning there appeared to be an underlying sense of grievance amongst the men. Many of them were trade union members and most were unwilling to contribute towards breaking the strike. In addition, the men had had to give up their normal jobs and as a result were suffering financial hardship while their complaints with regards to poor food and unsanitary living conditions were ignored.⁷⁵⁶

Despite an official inquiry, the ring leaders could not be identified. As a result, the Admiralty discharged 440 reservists including thirteen leading seamen, 128 able seamen, four signalmen, fifty-seven leading stokers and 238 stokers. The observation made at the beginning of this chapter by the C-in-C Portsmouth that a higher proportion of the stokers had been insubordinate, is therefore both questionable and misleading. The battalion contained a higher proportion of stokers than seamen, as a consequence, stokers suffered a higher percentage of discharges (295 stokers to 145 seamen).

Clearly stokers were not independently to blame for this particular mutiny. Indeed, the court of inquiry found that an unnamed able seaman who was

⁷⁵⁶ TNA. ADM 156/157, "Disaffection in Number 2 Portsmouth Battalion," ed. Admiralty (Admiralty, 1921). 2-8.

suspected to have been a trade union leader; 'was influential and able to control the bulk of the battalion to the extent necessary to get a hearing.'⁷⁵⁷

Subsequently, the captain of the battalion was court-martialled and reprimanded while other officers were censured.⁷⁵⁸

In an otherwise excellent biography of HMS *Hood*, Bruce Taylor repeated an unsubstantiated rumour made in a diary kept by Boy Seaman Crawford, that the *Hood's* stokers came close to mutiny in early 1940 on hearing that no Christmas leave would be given that year. From his assessment of Crawford's diary Taylor observed:

It may be that Boy Crawford's entries do the stokers living on the adjoining mess decks a grave injustice. But if conditions in the *Hood's* engine spaces were as they had been a year earlier it is not beyond the bounds of possibility that the stokers, traditionally less inclined to discipline than their seamen colleagues, could have collectively reached the end of their tether.'⁷⁵⁹

Taylor's suggestion that stokers were 'traditionally less inclined to discipline than seamen' was made in 2004, eighty-three years after the same comment was aired by the C-in-C Portsmouth in 1921. The accusation that stokers lacked discipline was a widely held belief in the wardrooms and mess-decks of the twentieth century Navy. Yet, despite the longevity of the accusation, which now appears to have become part of naval folklore, it is a falsehood.

Before he began his career as a journalist and lower-deck campaigner, Lionel Yexley was an experienced former petty officer seaman who had first-hand knowledge of the main causes of discontent on the lower-deck. Yexley campaigned vigorously against naval injustice even when it brought him into direct conflict with his former seaman colleagues. Yexley's campaign against the Navy's punitive and excessive regime of discipline had shown him that the uninformed in the Navy viewed stokers as 'the undisciplined element of the

⁷⁵⁷ Admiralty, *Mutiny in the Royal Navy: 1691-1919*, vol. 2, 6.

⁷⁵⁸ David. Divine, *Mutiny at Invergordon* (London, Macdonald, 1970). 50.

⁷⁵⁹ B. Taylor, "*The Battlecruiser H.M.S. Hood: An Illustrated Biography 1916-1941*", (London, 2004), 195.

lower-deck'. In order to re-dress the balance, Yexley used punishment returns to challenge this common misconception.⁷⁶⁰

Yexley's analysis of the punishment returns for the first seven years of the twentieth century showed that the total number of punishments awarded exceeded the number of men in service in every year. In 1905 for example, 112,000 men accumulated 127,000 punishments, indicating to Yexley that far too many men were being punished for trivial misdemeanours. More importantly, the fact that stokers regularly received substantially fewer summary punishments than seamen, highlighted to Yexley that 'stokers were far more disciplined than they were given credit for.'⁷⁶¹

Following on from Yexley's work, the following table (Table: 14) provides data for a twenty-five year period (1888-1912). This data, which covers an extended period prior to, and after that analysed by Yexley, also suggests that stokers were awarded substantially less summary punishments than seamen in every year shown. This evidence clearly contradicts the contemporary service and modern historical assumption that stokers were less-disciplined than seamen and also provides evidence that Yexley's figures had not been chosen in isolation in order to show stokers in a good light.⁷⁶²

⁷⁶⁰ " *The Fleet Annual & Naval Year Book*," ed. L. Yexley, (London, 1909), 36-7.

⁷⁶¹ Ibid.

⁷⁶² 'Returns of the Number of Courts-Martial Held and Summary Punishments Inflicted on Seamen of the Royal Navy, &C., During the Years 1888-1912,' (London, Admiralty), HOC Parliamentary Papers Online.

Table 14: Numbers of Summary Punishments Inflicted 1888-1912

Year	Seamen	Non Seamen	Marines Afloat	Marines Ashore
1888	28,914	8,739	10,371	2,212
1889	26,348	9,234	10,312	2,602
1890	27,158	9,926	9,672	2,505
1891	23,713	10,819	8,761	2,711
1892	21,429	11,914	9,353	2,775
1893	22,113	12,802	8,833	2,899
1894	25,509	15,995	12,272	3,681
1895	31,024	20,313	13,541	3,157
1896	35,289	22,547	12,999	2,542
1897	40,827	24,806	14,998	2,883
1898	47,882	28,708	16,006	2,658
1899	44,926	27,339	14,583	2,848
1900	50,946	29,610	17,995	2,618
1901	50,726	26,931	16,218	2,280
1902	54,225	27,625	16,946	2,509
1903	60,561	32,025	17,115	2,221
1904	64,874	33,855	17,968	1,842
1905	69,479	34,761	16,216	2,221
1906	64,998	35,957	14,713	1,461
1907	62,562	39,175	13,057	1,426
1908	59,755	40,259	13,246	1,706
1909	56,940	40,178	12,520	1,113
1910	54,899	43,139	11,793	898
1911	54,859	44,818	10,851	873
1912	50,802	47,214	9,337	1,024 ⁷⁶³

⁷⁶³ 'Returns of the Number of Courts-Martial Held and Summary Punishments Inflicted on Seamen of the Royal Navy, &C., During the Years 1888 -1912,' (London), HOC Parliamentary Papers Online.

While stokers shared the title of 'non-seamen' with other ratings, their overall numbers were small compared to the seamen branch prior to the late nineteenth century. This has been previously explained in chapter one whereby the relatively slow development of steam machinery and the reluctance to use it unless absolutely necessary kept the overall numbers of stokers required to a minimum. However, the rapid rise in the introduction of the water-tube boiler in the latter part of the nineteenth century accelerated the recruitment of stokers particularly after 1898. Despite this rise, Table 5: indicates that while the number of punishments awarded to non-seamen increased annually the increase was modest compared to that of seamen. Furthermore, while the data tables eventually converge, the gap did not begin to narrow until 1912 the last year that these returns were published. Unfortunately, it is impossible to separate the totals out to each respective branch.

The reason why stokers were less likely to be disciplined than their seamen counterparts lay in the different working routines of the lower-deck. Yexley, observed that because men of the 'non-seamen' class were at work during the day in their respective departments, they were free from the 'harassing attentions' of the ship's police. Therefore, by the nature and place of their work, stokers were unable to commit the crimes (or be caught committing them) that seamen were regularly punished for. Yexley described these 'crimes' as being as trivial as leaning on paintwork or being improperly dressed; 'together with the hundred and one other petty restrictions that were introduced for no other reason than to irritate the men to the limit of their endurance.'⁷⁶⁴

Although Yexley did not take it into consideration, one other important point to note with regard to stokers' discipline was the fact that engineering officers did not have the power to punish. This power belonged exclusively to the executive branch; therefore stokers were even less likely to attract punishment while at work than seamen.

During the *Zealandia* affair, the ship's marine detachment was ordered to use violence if necessary in order to bring the stokers to order, despite the fact

⁷⁶⁴ *The Fleet Annual and Naval Year Book*, ed. L. Yexley, (London, 1909), 37.

that none of the stokers threatened violence themselves.⁷⁶⁵ The matter might have ended there but for the intervention of Yexley. Yexley forwarded a letter to the Admiralty written on behalf of the *Zealandia's* stokers in which they outlined their grievances including the threat of force. The Admiralty was informed by Yexley that this information had passed around the fleet and that he had personally received assurances that no seaman, stoker or marine in any ship would assist their officers in similar situations.⁷⁶⁶ Having read this report, Winston Churchill then serving as First Lord observed, 'this discloses a dangerous state of things.'⁷⁶⁷

One striking difference between the discipline displayed between seamen and that shown by stokers was the way in which they conducted themselves during incidents of mutiny or acts of collective disobedience. In fourteen out of the sixteen mutinies which occurred prior to 1910, seamen committed acts of sabotage by throwing gun sights and gun parts overboard, thereby impairing the fighting efficiency of their ship. By contrast, the only recorded instance of stokers deliberately sabotaging their ship occurred onboard the *Vindictive* in 1919 when two stokers were charged with damaging the fan engines which supplied forced air to the stokehole furnaces, during the lower-deck Baltic service protest.⁷⁶⁸

Stokers and Marines - an unlikely alliance?

We will never know whether the marines would have actually used force against the *Zealandia's* stokers. As it transpired they were not required to do so, which was just as well as it may have irreparably ruined the only real inter-branch friendship that existed on the lower-deck. Seamen ruled the waves and despite the fact that stokers were the second largest branch of the lower-deck, they were unable to challenge the hierarchy that kept them at the bottom of the social ladder. Similarly, because the traditional shipboard role of marines was to

⁷⁶⁵ TNA. ADM 156/157, "Court of Enquiry into Mutinous Conduct Amongst H.M.S. Zealandia's Stokers."

⁷⁶⁶ TNA, ADM, 156/157, L. Yexley to Admiralty, 1914.

⁷⁶⁷ Ibid.

⁷⁶⁸ A, Carew, *The Lower Deck of the Royal Navy 1900-1939*, 212.

serve and protect officers, they were also looked down upon by seamen. The complex nature of the lower-deck social hierarchy contributed towards a most unlikely relationship which formed between stokers and marines. These two very disparate bodies of men should have had little in common. On the one hand, stokers were commonly regarded as the 'lowest of the low' because of their dirty jobs and the perception that they lacked education and any sense of naval tradition or discipline. On the other, were Royal Marines, who, unlike men of the Royal Navy, were all sworn men who epitomised the military art through their smartness, military bearing and discipline.

Baynham *et al* alluded to the fact that stokers and marines formed close relationships because, unlike seamen, they were both recruited as men rather than boys, while the lure of higher wages attracted many serving and ex-marines and former Army personnel to join as stokers.⁷⁶⁹ Stoker William Stephenson was a typical cross-service volunteer. Stephenson was a former Royal Marine and officers servant, who later became the senior stoker on Sir Ernest Shackleton's 1914 Trans-Antarctic Expedition.⁷⁷⁰

However, there is another reason why these two very different types of men should form relationships which has not been examined in any depth. While on shore, marines followed a well-disciplined but relatively easy lifestyle, free from the petty restrictions that plagued the lives of the average sailor. Chapter four highlighted the better conditions of service enjoyed by marines who were accorded the maximum personal freedom, respect and privileges from their officers with regard to their rank, with even the lowest marine receiving privileges not accorded to a chief petty officer in the Royal Navy.

However, when marines moved from their shore barracks to sea service they became subject to naval discipline. As a result, the well-disciplined shore marine suddenly found himself in direct conflict with naval authority. For example, in 1907 10,966 marines serving at sea accumulated 13,057

⁷⁶⁹ H, Baynham, *Men from the Dreadnoughts*, 164.

⁷⁷⁰ Nova-online, *Shackleton's Voyage of Endurance* (2002 [cited 15 August 2012]); cited in <http://www.pbs.org/wgbh/nova/shackleton/1914/team.html>.

punishments between them. By contrast, 7,062 marines serving ashore during the same period only attracted 1,046 punishments, thereby suggesting that sea-going marines were disproportionately punished while at sea.⁷⁷¹

Yet despite the evidence presented above, the naval hierarchy used the example of the well disciplined marine to contrast the perceived poor discipline of stokers. In 1921 the C-in-C Portsmouth observed:

Royal Marines and Stokers are recruited from about the same class and at about the same age, why is there such a marked difference in their discipline?⁷⁷²

In answer to his own question, the C-in-C suggested that marines were better disciplined than stokers because of the nature and extent of their initial military training on first entering service. However, the C-in-C argued that it was not the difference in time taken to train a marine or a stoker (thirty six weeks and sixteen weeks respectively) but the Admiralty's insistence 'in turning out a stoker first, and a disciplined man second.'⁷⁷³ In order to address this issue it was suggested that stokers should be sent to the marine barracks at Deal for sixteen weeks initial military training before they undertook their specialised engineering training; although this proposal was never implemented.

Contrary to the claim made by the C-in-C Portsmouth that marines were better disciplined than stokers, it has been shown that well disciplined shore marines were more likely to incur naval punishments at sea, as they were largely unaccustomed to the particular petty discipline code of the Royal Navy. Moreover, from the sentiments expressed by the C-in-C Portsmouth it would appear that this fact had passed unnoticed because despite their obvious disciplinary problems marines were still held in high regard by officers. After all, marines were largely onboard to protect them from any uprising by the men. It is also important to note that many marines elected to act as officers' stewards or servants, another reason perhaps why marines were resented by seamen.

⁷⁷¹ *The Fleet Annual and Naval Year Book 1909*, ed. L. Yexley, (London, 1909), 37.

⁷⁷² TNA. ADM 1/8627/118, "Training of New Entries: Report on the Training and Discipline of Stokers."

⁷⁷³ *Ibid.*

Marine Richard Ley served as a marine in the *Adventure* during the Invergordon mutiny. While reminiscing about lower-deck relationships Ley recalled 'marines weren't liked you know aboard a lot of ships in those days.'⁷⁷⁴ Ley stated that the only men marines seemed to get on with was the stokers, 'because stokers didn't seem to have any antipathy towards us.'⁷⁷⁵ Therefore, it could be argued that because marines and stokers were regarded as lower-deck social outcasts, it brought the two very different groups of men together.

Low pay

During the First World War the grievances felt by the lower-deck with regards to their pay and general conditions of service became muted as war service took priority. Even Yexley's publication, *The Fleet Annual and Naval Year Book* which pre-war had kept up a critical attack on Admiralty policy and indifference to the poor conditions of the lower-deck, adopted a supportive role towards the Admiralty's progression of the war. At the end of the Great War membership of lower-deck societies began to increase and for the first time they became popular with the younger men of the service who were said to have 'flocked' to join.⁷⁷⁶ The rise in membership of lower-deck societies and the general increase in militancy amongst men of the lower-deck can be explained by comparison with the growing interest in trade unionism ashore where membership of unions were also double pre-war levels.⁷⁷⁷

Despite cost of living increases and a corresponding increase in civilian wages by 1912 pay in the Royal Navy had remained unchanged at 1s 8d per day for over fifty years, having remained unaltered since 1862.⁷⁷⁸ Moreover, there had been expensive increases in living conditions onboard, particularly with regard to the cost of messing, the purchase of mess-gear and clothing and the increased cost of canteen items. The low rate of pay in the service forced

⁷⁷⁴ Richard Percival Ley, *I.W.M. 5810* (London, Imperial War Museum Sound Archive, 1980).Tape 1.

⁷⁷⁵ R. P. Ley, *I.W.M. 5810*, Tape 1.

⁷⁷⁶ A. Carew, *The Lower Deck of the Royal Navy 1900-1939*, 106.

⁷⁷⁷ *Ibid.*

⁷⁷⁸ H, Pursey, in *Brassey's Naval Annual* (1937), 103.

married men to maintain a relatively low standard of living in their homes.⁷⁷⁹ In December 1912 the Admiralty approved an increase of 3d a day but only for men with over six years-service. The 1914 Magna Charta was the last to be submitted before the Great War commenced and continued the appeal for a 'reasonable wage for all.'⁷⁸⁰ However, by 1917 the general cost of living together with their low wages brought about great unrest in the service.⁷⁸¹

After the police strike of 1918, Yexley set out the lower-deck's main grievances in a confidential memorandum to the Admiralty with a warning that grave political unrest existed on the lower-deck which if left ignored could 'burst into flame.'⁷⁸² Thirty-eight per cent of the men on the lower-deck were married and in the existing economic climate their wives could not cope, therefore, low pay once again became the main complaint and thrust of lower-deck societies.⁷⁸³ The captain of the *Orion* in supporting his ship's welfare committee request to the Admiralty stated:

The governing factor appears to be increase of pay throughout and this is brought about by the large wages earned by people outside and the high cost of living. The men state their wives are in the same class and district in many cases as dockyard workmen and they have to compete with the wives of men earning £5 to £6 a week in buying provisions etc, and that despite the separation allowance, the family of an able seaman who is married, are living in real poverty from the above causes.⁷⁸⁴

In October 1918 the Admiralty appointed Rear-Admiral Jerram as chairman of the Naval Personnel Committee. The committee was instigated firstly so that the Admiralty could monitor lower-deck societies and secondly in order to provide a forum where the Admiralty could be consulted on matters relating to pay and conditions. The first task of the committee was to look into the question of simplifying the existing structure of naval pay and allowances.

⁷⁷⁹ J.F. Somerville, "The Lower Deck, Past and Present," *Royal Uniformed Services Institute* 81, no. 522 (1936). 306.

⁷⁸⁰ H, Pursey in *Brassey's Naval Annual* (1937), 104.

⁷⁸¹ *Ibid.*

⁷⁸² A. Carew, *The Lower Deck of the Royal Navy 1900-1939*, 91.

⁷⁸³ *Ibid.*, 89.

⁷⁸⁴ TNA. ADM 116/1728, "Pay, Allowances, Pensions Etc: Recommendations of the Jerram Committee." Letter from the Commanding Officer *Orion* to Vice Admiral Commanding Second Battle Squadron.

By 1918 there were 120 different allowances for ratings leading one senior officer to describe the basic rate of naval pay as ‘illogical.’⁷⁸⁵ These allowances had been granted to certain ratings in different branches because of perceived advantages by other branches. The personnel committee was unable to resolve the question of pay because it became bogged down with the complexities of these allowances, instead of tackling the root cause of dissatisfaction within the lower-deck which was the general ‘low level of pay.’ After the intervention of both Fisher and Yexley, who had publicly supported a rise in naval pay citing the threat of ‘trouble’ within the fleet unless pay levels were increased, the Admiralty reconstituted the Naval Personnel Committee in December 1918 with a new brief to inquire into lower-deck pay⁷⁸⁶.

After only two days of hearings in the home ports, the committee recommended the payment of an immediate interim bonus of 1s 6d in recognition of the fact that naval pay had fallen far behind civilian wage levels.⁷⁸⁷ By 1918 the Treasury estimated the cost of living for an average semi-skilled family, such as a first class stoker with a wife and three children had increased by seventy-four per cent from 1914 levels.⁷⁸⁸ As part of this general increase the average food bill had nearly doubled from 23s 5d to 46s 3d, an average increase of ninety per cent, while the average cost of all semi-skilled household expenses had increased from 41s 8d to 73s a week.⁷⁸⁹

In 1914 a first class stoker with six years-service earned 2s 6d a day or 17s 6d a week, therefore his pre-war income would have been considerably less than the minimum required to feed a family, let alone pay for rent, clothing, heat and light. Even with the 1919 Jerram pay award stokers’ pay had only increased to 5s a day or 35s per week, less than half of the figure required to

⁷⁸⁵ TNA, ADM 116/1728

⁷⁸⁶ A. Carew, *The Lower Deck of the Royal Navy 1900-39*, 101.

⁷⁸⁷ *Ibid*, 104-5.

⁷⁸⁸ John Andrew Baron Sumner Hamilton, "Working Classes Cost of Living Committee, 1918. Report of the Committee Appointed to Enquire into and Report Upon (I) the Actual Increase since June, 1914, in the Cost of Living to the Working Classes and (ii) Any Counterbalancing Factors (Apart from Increases of Wages) Which May Have Arisen under War Conditions," (London, House of Commons, 1918). 7.

⁷⁸⁹ J A B S. Hamilton, "Working Classes Cost of Living Committee," 1918.

maintain an average family's household expenses.⁷⁹⁰ By contrast, a civilian gas work's stoker, arguably a less-skilled man than a Navy stoker, earned around 41s a week prior to 1914 and received regular cost of living increases.⁷⁹¹ The low level of naval wages explains why so many married men were forced to live frugally onboard ship while earning extra money by operating lower-deck firms in order to support their families as previously described in chapter four.

While the Navy took absolutely no responsibility for the families of its serving sailors, Royal Marines and soldiers' families were exceedingly well provided for. Without the marriage allowances and married quarters provided for Army and Marines personnel, sailors and their families were reduced to living in damp, overcrowded and unsanitary rented rooms in the home ports. In Devonport for example, there was considerable overcrowding with the average rental for a single room typically costing from 11s to 15s a week which would have left a married stoker's family living on bare subsistence levels.⁷⁹²

The various Grand Fleet committees which offered evidence to the Jerram committee had asked for a flat-rate rise of 1s 6d a day across the board, however, this was rejected as the committee considered that a flat-rate rise would give the lower-deck a far greater proportionate increase 'than was considered necessary or desirable.'⁷⁹³ Despite the previous acknowledgment that there were too many different scales of pay between different branches of men, the pay committee accepted requests from the seaman branch for a multitude of increases in non-substantive pay for various seaman specialisations which were all approved. In addition, extra allowances were granted to writers acting as senior officers clerks and victualling ratings employed in victualling office duties.⁷⁹⁴ However, the request made by stokers for non-substantive pay for auxiliary watch-keeping was refused on the grounds

⁷⁹⁰ J A B S. Hamilton, "Working Classes Cost of Living Committee," 1918.

⁷⁹¹ "Report on Standard Time Rates of Wages and Hours of Labour in the United Kingdom on October, 1913 ", ed. Board of Trade (House of Commons, Cd. 7194, 1914). 107.

⁷⁹² A, Carew, *The Lower Deck of the Royal Navy 1900-1939*, 151.

⁷⁹³ TNA, ADM 116/1728, Letter from Vice-Admiral Commanding Second Battle Squadron, 20 October 1917.

⁷⁹⁴ TNA, ADM, 116/1728, 'Pay Allowances, Pensions Etc: Recommendations of the Jerram Committee,' ed. Admiralty, 1919.

that watch-keeping was considered to be 'an ordinary part of their duty.'⁷⁹⁵ Had this principle been equally applied to the seaman and non-seaman branch requests as given above, stokers would have had no choice other than to accept the rejection of their request on the basis that all men had been treated equally. As it transpired, it must have been plainly obvious to stokers that they were looked upon as a separate entity to all other men on the lower-deck, and as a result they were denied equal rights and opportunities.

Jerram's pay award was finally accepted by the Admiralty in its entirety and was implemented by the government in May 1919, the increases being backdated to the previous February. An able seaman with six years service saw his pay increase from 2s 1d to 4s 6d a day and a first class stoker from 2s 6d per day to 5s. However, with an additional one shilling a day non-substantive pay, a seaman qualified as gunner's mate could equal a stoker's pay, thereby removing the pay differential which had previously given stokers a higher daily rate than seamen to compensate them for the hardship and nature of their work.

Invergordon 1931

The events which took place at Invergordon on 11 September 1931 have been variously described as a mutiny, disturbances, and a strike, although the Admiralty preferred the term 'insubordination.'⁷⁹⁶ Despite having serious repercussions for the Navy and government no one was ever charged over the insubordination although scores of men were dismissed the service and many senior officers lost their commands in the aftermath. The insubordination was in effect a lower-deck strike over a proposed pay cut which had its beginnings in the pay rise of 1919. Despite the Admiralty promise that the 1919 pay rates would be permanent, men recruited after October 1925 were placed on a lower rate of pay after cuts of fifteen to sixteen per cent were demanded by the returning Conservative government. The idea of two different rates of pay for men doing the same job were bound to cause upset and resentment on the

⁷⁹⁵ TNA, ADM, 116/1728, Letter from Vice-Admiral Commanding Second Battle Squadron, 20 October 1917.

⁷⁹⁶ TNA ADM 156/71, "Atlantic Fleet: Insubordination at Invergordon," ed. Admiralty (1931).

closely packed lower-deck, particularly as the Navy lurched towards the end of the decade and into the slump of the 1930s.

During the recession of 1931 the Labour government introduced cuts to unemployment benefits and in March of that year appointed Sir George May to chair a Committee on National Expenditure. The May Committee's report was presented to the government on 31 July and urged extensive cuts to State expenditure including wage cuts for civil servants, teachers, the police and the armed forces. The May report was published on 1st August 1931 and may have been read in the press by men serving in the Atlantic Fleet who had just begun their summer leave. The report advocated a general all round reduction in pay or the application of the 1925 pay rates to all men on the 1919 scale. At the time, seventy-five per cent of the lower-deck had joined up prior to 1925, therefore the proposed pay cut would have affected a majority of the lower-deck and would have had particular repercussions for married men. Carew, suggested that the lower-deck had plenty of time and opportunity to discuss the proposed pay cuts and their implications; therefore, when the announcement was made on the radio on budget day that the 1925 pay rates would be applied all round from 1st October 1931, it came as no real surprise.⁷⁹⁷

However, the idea that the men were aware of the impending cuts prior to their arrival at Invergordon was rejected by former seaman Len Wincott, who is often referred to by authors as one of the ring-leaders and by the official Admiralty history as the 'chief ring-leader' of the mutiny. In his memoirs Wincott claimed the first the lower-deck heard anything about a pay cut was after the fleet arrived at Invergordon.⁷⁹⁸ Wincott also denied that there was any collusion amongst the men at Invergordon and dismissed subsequent claims of secret societies, pre-prepared signals and clandestine meetings as 'fables invented by people anxious to save their own skins.'⁷⁹⁹ Moreover, while Wincott and the men of the *Norfolk* may have been ignorant of the proposed pay cuts, Stoker Robert Harbin serving in the *Nelson* recalled that notices reporting a flat rate

⁷⁹⁷ A. Carew, *The Lower-Deck of the Royal Navy 1900-1939*, 158-9.

⁷⁹⁸ Len. Wincott, *Invergordon Mutineer* (London, Weidenfeld & Nicholson 1974). 98.

⁷⁹⁹ *Ibid.*

reduction of 1s a day for all petty officers and men, were posted on the ship's notice boards which were read and discussed by the men during the passage north.⁸⁰⁰

The pay cuts incensed the men because they affected the poorest paid the worst. A shilling a day deducted from an able-seaman's pay amounted to a twenty five per cent reduction, whereas a lieutenant commander only lost 3.7 per cent from his pay.⁸⁰¹ Harbin joined the Navy at age eighteen in 1924 after becoming disillusioned working down the pits. He denied that there were any organised meetings onboard the *Nelson* on its passage to Invergordon, but admitted that the pay cuts were a source of heated debate in the lower-deck smoking room which was situated in the forward part of the ship.⁸⁰² As a former miner Harbin had been a member of the miner's union but had settled down to lower-deck life without any problems. He described the main spokesperson on the *Nelson* as being a three badge torpedoman (a man with twelve years service, each badge representing four years service). Harbin was single and, as he only spent his pay on 'going ashore and beer', he had resigned himself to losing a quarter of his pay and took little interest in the events occurring onboard his ship and in the wider fleet.

On the second day of the mutiny Harbin remembered that most of the 1919 pay scale stokers visited every mess-deck of the ship en-masse, encouraging the ship's company to 'stand firm.' To qualify for the 1919 pay scale a man would have had to join the service prior to 1925 therefore by 1931 these men would have been the older and more senior stokers. As such they would have been the men most likely to have been married through virtue of their age and their ability to afford to keep a wife and home as suggested in a breakdown of the *Lancaster's* married men in Table 8: p. 64. Married men would have had a particular interest in defending their right to keep the 1919 pay rate as they would have had the most to lose.

⁸⁰⁰ Robert Henry Harbin, *I.W.M. 5837* (Imperial War Museum Sound Archive, 1980), Audio Tape 1 Reel.

⁸⁰¹ A. Ereira, *The Invergordon Mutiny*, 44.

⁸⁰² R. H. Harbin, *I.W.M. 5837*, (Imperial War Museum Sound Archive, 1980), Audio Tape 1 Reel.

Through a series of Admiralty blunders, the news regarding the naval pay cuts reached the men via local and national newspapers rather than through official naval channels leaving Carew to consider that the men were better informed regarding the government's proposals than their officers.⁸⁰³ A series of meetings were held in the canteen ashore and other meetings continued onboard individual ships over the following days. The men were furious that the largest cuts of twenty-five percent would hit the lowest paid men, while officers would receive relatively light cuts of eleven percent. In addition pensions had been cut which would have made little difference to the budget but would impact greatly on men nearing retirement. The main concern for married men was the suddenness of the cuts which were due to take effect in the following two weeks, leaving the men no time to discuss the implications on their household budgets with their wives or to make any arrangements to adjust their spending on items such as hire purchase agreements etc.⁸⁰⁴

An agreement appears to have been reached amongst the men who attended the meetings in the shore side canteen and onboard individual ships that a protest was required against the pay cuts and a decision was made that, if the *Valiant* refused to sail for the fleet exercise as programmed on the 15th September, all ships would 'down tools' and refuse to sail. When the *Valiant's* seamen refused to weigh anchor the Senior Naval Officer, (SNO), Rear-Admiral Tomkinson, contacted the Admiralty to inform it that four of his capital ships had refused to sail, at which point the exercise was cancelled and the Royal Navy's largest mutiny since the Spithead and Nore mutinies of 1797 began.

Stoker Walter Butcher joined the Navy in 1929 having been previously unemployed; as a result he was on the 1925 rate of pay, but thankful for it nonetheless. He served in the Atlantic Fleet flagship *Nelson* at Invergordon and recalled that most of the stokers on the *Nelson* were on 'old rates' of pay (1919 rates) and being in the majority they were most likely to suffer from the cuts.⁸⁰⁵ Despite claims of organised 'soviet cells' on every ship that had been planning

⁸⁰³ A, Carew, *The Lower Deck of the Royal Navy 1900-1939*, 155.

⁸⁰⁴ *Ibid*, 160-1.

⁸⁰⁵ Walter Prior Butcher, *I.W.M. 5822*.

the mutiny for upwards of two years, the first Butcher heard about the mutiny was at 8 o'clock on the first morning after anchoring at Invergordon when groups of men went around the ship encouraging others to stop work.⁸⁰⁶

On the first morning of the mutiny the morning watch had gone below at 4 o'clock to light up *Nelson's* boilers ready for sailing as normal, another indication that disobedience was unplanned. However, the forenoon watch failed to relieve them instead a party of stokers went below and shut the boilers down. One chief stoker tried to persuade the stokers to go back to work but was forcibly removed and locked in a drying room. Butcher recalled that the *Nelson's* captain cleared lower deck to speak to the men but he was 'booed' by the ship's company.⁸⁰⁷

At the time of the mutiny Stoker Walter Hargreaves had only been in the Navy for six months and was serving in the *Hood*. Prior to joining the Navy Hargreaves had been an unemployed weaver in Yorkshire and had joined the Navy because job prospects in his trade were poor. On the morning of the mutiny he tried to get down to the boiler room but was prevented by a large stoker. He remembered seeing the captain, 'with tears running down his face,' attempting to raise the anchor but the seamen linked hands and prevented him.⁸⁰⁸ Despite being a relative newcomer to the service Hargreaves was already aware that stokers and seamen didn't get on, but was also aware of the strong friendship that existed between stokers and marines.⁸⁰⁹ Hargreaves, heard a seaman complaining that he couldn't afford to buy any kit, and that his wife was struggling to make ends meet. However, when the men learned he was on the lower rate of pay he was shouted down, presumably because the higher rate of pay men would be worse off than the lower rate in the forthcoming cuts.

⁸⁰⁶ Kenneth. Edwards, *The Mutiny at Invergordon* (London, Putnam, 1937). 126.

⁸⁰⁷ Walter Prior Butcher, *I.W.M. 5822*.

⁸⁰⁸ Walter Roy Hargreaves, *I.W.M. 750* (Imperial War Museum Sound Archive, 1980), Audio Tape 1 Reel.

⁸⁰⁹ *Ibid.*

It must have come as something of a shock to most naval officers when marines participated in the insubordination. P. J. Dyke served as a Royal Marine non-commissioned officer in the *Valiant* at Invergordon. On the Tuesday morning of the mutiny, Dyke recalled that all of the junior marines refused to turn out of their hammocks when the hands were called. The Captain of Marines was so incensed he strapped on his revolver and went down to their mess deck, which marines called the 'barracks,' in order to speak to them. While he managed to talk his men into turning out of their hammocks, they steadfastly refused to do any work instead they went to the gun casemate which was their recreation area where they stayed for the rest of the day.⁸¹⁰

Dyke remembered that in the *Valiant* the stokers refused to go below to work while the only seamen on the foc's'le were those congregating with other men in a show of mutual support. However, while no official work was conducted onboard *Valiant* during the protest the ship's 'firms' operated as normal. With the planned exercise and gunnery firings cancelled, the *Valiant's* gunnery officers helped by midshipmen, struggled to remove the sub-calibre mechanisms which had been fitted to the ship's fifteen inch main guns in preparation for the gunnery firings. Dyke recalled that the men ignored their officer's and instead queued in their casement to pay to use the dartboard operated by the 'dartboard firm,' while the cobbler and Jewing firm conducted their business as normal.⁸¹¹ Even before the insubordination at Invergordon Dyke considered the *Valiant* to be an 'unhappy ship', as each morning there would be a 'full complement' of men lined up on the quarter deck waiting to see the Commander or Captain having fallen foul of naval discipline regulations.⁸¹²

The manner in which the men conducted themselves during the insubordination differed from ship to ship. While the *Valiant's* stokers were alleged to have refused to go below to work, Stoker Nicholas Carr recalled that

⁸¹⁰ P. J. Dyke, *I.W.M. 5843* (London, Imperial War Museum Sound Archive, 1980). Audio Tape 1 Reel.

⁸¹¹ Sub-calibre mechanisms were fitted inside the fifteen inch main guns so that practice firing could be conducted using a smaller calibre shell, thereby reducing wear and tear on the main gun barrel which had a limited life when using full-calibre ammunition.

⁸¹² P. J. Dyke, *I.W.M. 5843*.

all of the *Hood's* stokers worked as normal; adding, 'we just didn't go to sea.'⁸¹³ Carr had an unusual service career as prior to joining the *Hood* he served for three years in the New Zealand Division of the Royal Navy.⁸¹⁴ As a Stoker in the New Zealand Division Carr earned twice as much pay as he would have done in the Royal Navy, noting that when he joined the *Hood* after her 'big refit' in 1929, his pay reduced to five shillings and six pence a day which came as something of a shock.

After two days of insubordination, the Admiralty took a gamble and ordered Tomkinson to sail his fleet back to their home ports in an attempt to end the status-quo not knowing whether the order would be obeyed or not. Despite reluctance on the part of Wincott and others to lose the upper-hand, the order was welcomed by a majority of the men and the fleet dispersed to their respective ports. On the passage back south investigations began in order to determine the effects the cuts would have on married men. Onboard the *Nelson* the chaplain undertook hardship interviews although Harbin could not remember any stoker presenting himself for interview.⁸¹⁵ The naval committee formed at Portsmouth to hear evidence of hardship arising out of the pay cuts noted:

A large number of married men under the age of 25 (i.e. ineligible for marriage allowance) came forward and showed by their "budgets" the extreme difficulty they had experienced in the past making both ends meet. It appeared obvious from their statements that their wives and families are even now in difficult circumstances, in some cases being unable to provide sufficient nourishment. This is borne out by the appearance of some of the witnesses. From consideration of cases of married ratings over 25 below leading rates, there is no doubt that a large number of these ratings, who, in view of their high rents, instalments on furniture, etc, are finding it difficult to make ends meet on the 1919 rates of pay, will find it much more difficult, if not impossible, to do so with a 10% cut.⁸¹⁶

⁸¹³ Nicholas Smiles Carr, *I.W.M. 5809* (London, Imperial War Museum Sound Archive, 1980). Audio Tape, 1 Reel.

⁸¹⁴ *First World War-Royal New Zealand Navy*, (History Group of the New Zealand Ministry for Culture and Heritage, 2011 [cited 20 April 2012]); cited in <http://www.nzhistory.net.nz/war/royal-new-zealand-Navy/first-world-war>. The Naval Defence Act 1913 formally established the New Zealand Naval Force (NZNF). In 1921 the NZNF became the New Zealand Division of the Royal Navy.

⁸¹⁵ R. H. Harbin, *I.W.M. 5837*.

⁸¹⁶ TNA. ADM 116/2891, "Cuts in Lower Deck Pay," ed. Admiralty (Admiralty, 1931).

The men most hard hit by the cuts were described as:

- a) single men under 25 who have dependents
- b) Men under 25 who married on the assumption that on the 1919 rates they could just manage until they qualified for marriage allowance.
- c) Men over 25 who have more than two children.⁸¹⁷

A typical example of the level to which the reduction in pay affected married men was described by a stoker serving in the *Malaya* who was aged twenty-four with one child who did not qualify for marriage allowance. Giving evidence to the Hardship Committee the stoker stated that prior to the pay cut his wage had been 37s 11d a week from which he allotted his wife 30s a week leaving him 7s 11d for his own expenses. As men were paid fortnightly this man saved a further 10s a fortnight and sent this directly to his wife, therefore he only allowed himself 2s 11d a week to pay his mess bill and other sundries. From her allowance, his wife paid 9s 6d rent, 15s on food, 3s on fuel and light, 2s on clothes, and 1s on insurance. When the pay cuts came into force this man's pay dropped to 32s 11d a week, therefore he was no longer able to send his wife the additional 10s. Moreover, as victualling allowance was also cut his mess bills would have increased. Without the additional 10s a fortnight his wife's household expenses amounted to 6d a week more than she received.⁸¹⁸

The insubordination achieved its aim and the pay cuts were revised so that on paper no man lost more than ten per cent of his pay. However, the government had not abandoned its aim of applying the 1925 rates across the board. One way in which it achieved this was by limiting the ten per cent cut to a first term of engagement only. Therefore, any man who joined prior to 1925 and then re-engaged for a further term of service automatically reverted to the lower rate of pay and pension. Carew noted that this anomaly caused further confusion and distress with four different pay and pension scales in operation post 1931 depending on whether a man joined before, 1921, 1925, or 1930.⁸¹⁹

As previously stated, married men under the age of twenty-five who were not in receipt of marriage allowance were the hardest hit and those who would

⁸¹⁷ TNA, ADM 116/2891, "Cuts in Lower Deck Pay."

⁸¹⁸ Ibid.

⁸¹⁹ A. Carew, *The Lower Deck of The Royal Navy 1900-1939*, 173.

accept it could apply for a small subsidy from the Royal Naval Benevolent Trust (R.N.B.T.). During the post Invergordon hardship enquiries, many men refused to discuss their financial affairs and declined to engage with investigating officers, while many others refused to apply to the R.N.B.T. for financial help. Despite the extreme financial hardship which fell mostly on the married men, many of them remained too proud to ask for help. Carew noted that the Admiralty instituted a fund of £5,000 administered by the R.N.B.T. to provide assistance to over 1,000 of the younger married men under the age of twenty five who were not entitled to marriage allowance. Only 716 men applied for financial support receiving just two shillings a week with children and one shilling without.⁸²⁰ With some irony, Carew noted that while the Admiralty offered the men 'paltry handouts' it pressed ahead with its plans for a new £800,000 Royal Yacht.⁸²¹

In his summing up of the Invergordon affair, Alan Eriera considered that the mutiny had broken the morale of many officers. The sudden realisation that the discipline of the men depended not on the authority invested in naval officers but on the consent of the men, had 'shaken and cracked the very ground they stood on.'⁸²² A naval officer present at Invergordon recorded the fact that given a bad enough situation, 'force of numbers would always win,' noting with hindsight that 'twenty officers couldn't make a thousand men do anything they didn't want to do.'⁸²³

With regards to apportioning blame for the insubordination, the Admiralty's official history stated that most of the leaders at Invergordon were 'able seamen of standing', with a few leading seamen and 'some stokers and marines.'⁸²⁴ The Admiralty took the extraordinary step of not officially charging or punishing any of the men who took part, or those officers who may have been thought negligible in their handling of the incident. However, after a prolonged investigation 120 men identified as 'trouble makers' were quietly

⁸²⁰ A. Carew, *The Lower Deck of The Royal Navy 1900-1939*, 174.

⁸²¹ *Ibid.*

⁸²² A. Eriera, *The Invergordon Mutiny*, 147.

⁸²³ *Ibid.*

⁸²⁴ Admiralty, *Mutiny in the Royal Navy 1921-1937*, 2: vol. 2, 22.

removed from their ships in the Atlantic Fleet and sent to barracks. The majority of these men were later dispersed throughout the Navy or kept in barracks doing menial chores until they were time expired and could be discharged. Twenty-seven ring-leaders including Wincott, were discharged to shore services no longer required. In addition, the S.N.O. of the Atlantic Fleet and several of his commanding officers were later relieved of their commands.

Just months after Invergordon a submarine executive officer felt compelled to publicly promote stokers by suggesting that 'the stoker usually has a more developed sense of duty' than the seaman.⁸²⁵ It was pointed out that the mutiny on the *Lucia* only involved seamen, while after Invergordon a lower-deck rumour surfaced in which it was alleged that stokers were very near to 'turning to' (returning to work) after the seamen had refused duty.⁸²⁶ It was also claimed that stokers were quicker workers than seamen, who were judged to be very slow workers, 'because they had so little work to do.'⁸²⁷

In 1942 another submarine executive officer boldly stated that in his own ship he could 'get on very well without any seamen at all', with the proviso that he 'had stokers instead.'⁸²⁸ The idea was put forward that a stoker's training produced a 'more adaptable and reliable man' who 'learnt how to steer just as quickly as the seaman.' Moreover, stokers were said to have a better idea of what was happening when dealing with emergencies, while they were less clumsy than seamen in most tasks because they had been taught in training 'to use their hands.'⁸²⁹ Coming from another executive officer this was praise indeed.

One reason for this apparent volte-face from seaman officers could be attributed to what one termed the 'intellectual snobbery' practiced within the stokers' branch which made them 'extremely easy to handle.' It was suggested that stokers 'fancied their capabilities as E.R.As,' therefore if they were treated

⁸²⁵ 'In Defence of Mechanical Training' *The Naval Review*, 20, no. 4 (1932), 695.

⁸²⁶ *Ibid.*

⁸²⁷ *Ibid.*

⁸²⁸ "Para Bellum," *The Naval Review* 30, no. 2 (1942). 119.

⁸²⁹ *Ibid.*, 119.

as 'intelligent beings' they would always 'work splendidly.'⁸³⁰ These sentiments clearly contradict the usual negative stereotype of the typical stoker represented in fact and fiction and examined in earlier chapters, particularly the notion of intellectual snobbery.

After decades of being dismissed as ill-disciplined and unworthy, stokers had finally found supporters from within the seaman branch who recognised the value of their high level skills and sense of duty. The expression of views from these executive officers remained unchallenged in their service journal thereby suggesting that stokers may have finally been rehabilitated and found renewed acceptance in the service.

In conclusion, the statement made by the C-in-C Portsmouth that stokers' were 'the weak link in the naval chain of command' was inaccurate and misleading. Had the C-in-C based his assumption on evidence, he would have had to modify his statement and accuse seamen of being the 'weak link', as statistically they were six times more likely to participate in mutiny than stokers. Moreover, in the twenty-four years between 1888-1912, seamen committed more offences against the Naval Discipline Act than stokers in every year. The reason for this anomaly is simplicity in itself. On the one hand seamen had little work to do onboard a ship at sea other than keeping it clean and painted and playing their part in daily evolutions and drills; therefore they were more prone to being caught committing disciplinary offences. On the other hand, stokers had too much work to do at sea and little time or opportunity to commit offences. When a ship was in harbour and seamen had even less work to do stokers would have been busily employed cleaning boilers and undertaking maintenance and repairs, again leaving them little time or opportunity to commit misdemeanours.

The fact that seamen officers were deemed to have been responsible for two out of the three serious instances of mutiny involving stokers prior to 1921, further reinforces the notion that, despite general naval and historical opinion, stokers were on the whole very amenable to naval discipline provided they were

⁸³⁰ "In Defence of Mechanical Training." *The Naval Review*, 695.

treated correctly. Stokers were often accused of being ill educated and uncouth, yet their behaviour during the Portsmouth barracks and *Zealandia* affairs suggests they had a highly developed sense of right and a determination to stand up for themselves, even when the penalties for doing so were severe. Moreover, despite extreme provocation, such as the treatment stokers received from their executive officers on the *Zealandia*, incidents of insubordination involving stokers were characterised by a lack of malice towards their officers together with an absence of sabotage. This contrasts strongly with the actions of seamen who were more likely to undertake sabotage during insubordination or mutiny by throwing gun-sights overboard, which was a prominent feature of most of the incidents of mutiny involving seamen prior to 1921. Because officers were to blame for the Portsmouth barracks mutiny, Stoker Moody had his sentence reduced after public protest and parliamentary support. Similarly, the *Zealandia's* stokers had their sentences annulled.

It is ironic that despite years of poor treatment from the seaman branch, by the 1930s seamen officers publicly acknowledged the value of a well trained stoker over a seaman rating. When the seamen mutinied on the *Lucia*, the captain turned to the ship's stokers to guard them, while another executive officer downplayed the stoker's role at Invergordon suggesting that they were more amenable to ending the incident than seamen and other ratings. This notion is reinforced by the Admiralty official history of Invergordon which observed that most of the leaders were able-seamen, with a few leading seamen and *some* stokers and marines. While this statement does not totally absolve stokers from participating in the largest single act of disobedience since 1797, it clearly suggests that stokers took a more passive role than a majority of seamen further debunking the myth that stokers were 'the weak link in the chain of naval discipline.'

This chapter also addressed the unique relationship that existed between what were seen as undisciplined stokers and extremely well disciplined marines. On face value it was inconceivable that any relationship could have developed between these two very disparate bodies of men. However, it has been shown that once removed from the relative freedom of their shore barracks, marines at

sea brought a disproportionate amount of punishments upon themselves through falling foul of petty naval discipline. Moreover, while stokers committed far fewer offences than seamen, the actual perception was the reverse; therefore stokers were wrongly viewed by senior officers and a good body of the lower-deck as being undisciplined. Perversely, marines had the strongest reputation for discipline but their actual disciplinary record was poor. This anomaly was caused through the contrast between the mature manner in which marines were treated ashore, compared with the petty system of naval discipline at sea.

It has already been noted that there was a longstanding tradition of using marines to support the stokehole crews when stokers were under pressure. In addition, many serving marines volunteered to change over to stoker, while marines who had left the service often re-joined as stokers in order to benefit from the extra pay. The fact that marines appeared to enjoy the work and were able to cope with the harsh conditions that existed in the stokehole goes some way to explaining the unusual friendship that grew between stokers and marines. To this we can add the common bond of their low social status and perceived ill discipline. In the stokers' case, their ill discipline was more invented than real, while for the marines the perception of their excellent discipline failed to match the reality of their shipboard life. This contrast, together with the seaman dominated lower-deck which placed both stokers and marines at the bottom of the social hierarchy, only served to bring both bodies of men together on the basis of 'united we stand, divided we fall.'

Chapter 8.

Conclusion: A 'very inferior class of men'- A reappraisal of the myth.

In 1859 the Surveyor of the Navy described stokers as 'a very inferior class of men.'⁸³¹ This may well be the earliest recorded criticism of stokers but it would certainly not be the last. No other branch of the lower-deck has been subject to such prolonged and widespread criticism or censure than stokers. The purpose of this thesis has been to seek answers and evidence which might explain the reasons why stokers attracted such a poor reputation, and to test whether this reputation was deserved.

The introduction to this thesis examined the historiography of stokers and their presentation in the social history of the Royal Navy. It argued that historians have either ignored the contribution of stokers entirely, or they have resorted to negative stereotypes portraying them in a poor light. Neither Edgar Smith in his *Short History of Marine Engineering*, or Admiral Kincome, in a lecture on the first one hundred years of naval engineering, saw fit to even mention the contribution of stokers to the growth of the steam Navy. Others, such as Rippon, and Beresford, deliberately misused the same historical source in an attempt to make history fit their story, thereby adding to the myth that stokers really were the 'lowest of the low.'

Christopher McKee, *Sober Men and True*, highlighted the fact that stokers suffered from a negative image and then set about describing them as 'big, strong, illiterate, dumb guys, all brawn and no brain recruited to do the ships heavy lifting in torrid, coal soiled engine spaces.' While acknowledging that he had succumbed to the negative stereotype himself, McKee offered no apology for its use admitting that the negative stereotype stuck to stokers 'with all the adhesive excellence of Tar Baby.'

⁸³¹ 'Report to Admiralty by Committee on Marine Engines,' ed. (Admiralty, 1859), 17.

In similar vein, stokers are often used as an example to illustrate disciplinary problems in the Navy. Mary Conley highlighted the Portsmouth barracks disturbances of 1906 in *From Jack Tar to Union Jack* and suggested that the stokers mutinied over pay, work and discipline. However, chapter seven clearly showed that the 'disturbances' at Portsmouth were actually caused by the improper use of an obscure order given by an over-zealous officer who was subsequently court-martialled for its use. Moreover, out of the fourteen recorded cases of mutiny prior to 1914, seamen staged eleven and stokers just three, while two of these were the direct result of their ill-treatment by officers. Therefore, by using stokers as an example and by highlighting one specific incident Conley has added to the enduring myth that stokers were ill-disciplined when the reverse is true. Had Conley mentioned the mutiny in the *Barfleur* at Hong Kong in 1900 or the *Leviathan* in 1909 both of which were staged by seamen, alongside the stokers' incident, she would have presented a more even handed and accurate picture of lower-deck ill-discipline.

Brian Lavery's *Able Seaman: The Lower Deck of the Royal Navy 1850-1939* stands alone as the only social history of the lower-deck written thus far that treats stokers as equals, while ignoring the use of the negative stereotype so often resorted to by others. Lavery made an important point when he declared that the ordinary sailor of the Royal Navy had not had his share of attention from historians over the years. As a result, Lavery describes the period 1850 to the present as a 'clean sheet' as far as the naval historian was concerned. As the introduction to this thesis has demonstrated, stokers have been badly treated by history. They have been alternately ignored, marginalised and stereotyped; therefore, with regards to the writing of their social history this thesis can be considered the stokers' 'clean sheet.'

Despite the naval surveyor's personal opinion in 1859, criticism of stokers was relatively unusual in the nineteenth century Navy. The decade of the 'great sailing era' (1860-1870) saw little demand for stokers or steam. By 1864 there were barely 4,000 stokers at sea compared to 53,000 seamen; therefore the relatively small numbers of stokers in each ship posed little threat to the status quo. As a consequence, there is no evidence to suggest that stokers were treated any differently to seamen during this period. Indeed, it could be argued

that stokers received rather better treatment than seamen on account of their specialised skills for which they received a higher daily rate of pay and certain other privileges.

Attitudes towards stokers began to change in the latter part of the nineteenth century when the water-tube boiler was introduced. The water-tube boiler was a major technological development being smaller and more efficient than the cylindrical fire-tube boiler it replaced, while it could also supply steam at much higher pressures. However, far more water-tube boilers were required to replace a smaller number of cylindrical boilers, therefore, a greater number of stokers was required to operate them. The sudden influx of large numbers of stokers into the Navy inevitably upset the balance between the various branches and posed a direct threat towards the traditional majority of the seaman branch. In addition, rivalries and animosities grew over the chore of coaling ship and the endless cleaning routines that became associated with the use of coal.

The sudden demand for large numbers of stokers to operate the increased number of boilers placed a huge strain on naval recruitment. It is clear from the evidence presented that individual recruitment officers cut corners and entered men who fell short of the official physical entry requirements for stokers. Moreover, in its haste to introduce the water-tube boiler, the Admiralty also cut corners. The Admiralty acknowledged that it had failed to provide sufficient and timely training for stokers but stubbornly continued to send untrained stokers to sea, justifying its position by claiming that the boiler replacement programme was the main priority.

When naval correspondents began to report news of mishaps, accidents and problems with the new boilers, the blame was unfairly placed on 'unskilled' stokers, when in fact the blame lay with the Admiralty and its policy of sending 'untrained' stokers to man its most modern ships. With such a large technological investment at stake, the Admiralty clearly shifted the blame from its decision to introduce the new boiler and its related failure to provide sufficient training for the stokers from the technology, to the men themselves.

The coal-fired era placed stokers under abnormal conditions of mental and physical stress. They worked under intolerable conditions in suffocating coal bunkers and fiercely hot stokeholes with the knowledge that at any time they could suffer bunker or boiler explosions, suffocation, burns, scalds and other medical conditions associated with heat induced labour. Despite the knowledge that the maximum speed of a ship was limited by the endurance of its stokers, no official Admiralty investigations were ever made in order to determine the optimum conditions for labour in the stokeholes and engine rooms of its ships. It was only through the individual efforts and investigations of a handful of ships' surgeons, notably those undertaken by Staff Surgeon Rees of the *Fox* in 1908, that the debilitating condition known as 'stokers' cramp' was investigated. Even then, it took several more decades of suffering before the condition was finally diagnosed as a salt deficiency and remedies provided.

During periods of intense heat or when steaming at high rates for extended periods of time, stokers working as trimmers in the coal-bunkers and those dragging coal to the stokehole in 'skips' had to be supplemented by seamen and marines. While they were paid the stoker's rate of pay for this extra duty, seamen would have felt resentful having to endure stoker's work, particularly as they were primarily responsible for according stokers the title of 'lowest of the low.' By contrast, marines were always happy to work alongside stokers.

Despite the cramped living conditions found onboard warships of the era, stokers and seamen hardly ever mixed. In some ships they were allocated different sections of the upper-deck for smoking and socialising. This segregation allowed many misconceptions to grow around stokers. Some seamen believed stokers did not have to pass the standard naval entry test leading to a belief that most stokers were illiterate. Whereas stokers, like seamen, came from a wide cross-section of working-class society. Many stokers were time-served tradesmen prior to joining the Navy while others successfully passed the academically challenging E.R.As entry examination to qualify as mechanics. The former Chief Stoker, John Capes, was the son of a diplomat and enjoyed a public school education while Arthur Lilley, a Plymouth grammar

school boy qualified as a naval schoolmaster and taught literacy and numeracy to stokers and seamen.

The grimy 'underground' nature of stokehole work has been a major contribution to the longevity of the stoker stereotype. McKee described stokers' work as 'heavy lifting in torrid, coal soiled engine spaces.' However, the reality of their work was dramatically different. Those who actually experienced the conditions under which stokers laboured, such as Surgeon T. B. Dixon of the *Kent* did not need to make light of a stoker's work. Dixon's description of the choking atmosphere and impossible conditions in a coal bunker on the *Kent* while coaling ship defies the imagination. Dixon made one brief visit to a coal bunker and very nearly lost his life, thereafter he had nothing but the highest praise for the skill and fortitude of stokers who daily laboured under the most appalling conditions.⁸³²

Part of the blame for the stokers' negative stereotype undoubtedly rests on the stokers themselves for failing to unite and form a single society to fight their cause. One hundred percent of E.R.As and ships' writers belonged to branch societies, but only thirty-three percent of stokers and mechanics chose to join a representative society. Interestingly, only marines had a lower percentage of society membership than stokers, possibly suggesting that the two branches that occupied the lowest positions in naval society may well have lost the will to fight against the tide of discrimination.⁸³³ Then again, it could be argued that despite general consensus, stokers were never a militant body of men. While E.R.As and others had no hesitation in procuring the support of affiliated trade unions or sympathetic MPs to promote their individual branch petitions, stokers refused to acknowledge their place in the naval hierarchical system and simply got on with their job.

Because stokers failed to unite under a single branch society they were unable to use their strength in numbers to put pressure on the Admiralty to grant their branch petitions. However, even if they had utilised their strength in numbers evidence shows that the Admiralty had a policy of treating stokers

⁸³² T. B. Dixon, *The Enemy Fought Splendidly*, 17.

⁸³³ A. Carew, *The Lower Deck of the Royal Navy 1900-1939*, 239.

differently to other men. Stokers were forced to continue to purchase their uniforms and bedding when all other men received their kit free of charge. In addition, the stokers' branch was the only branch of the lower-deck that did not have direct promotion to warrant officer rank while stokers were denied any direct representation on the ratings advisory board of the 1918 Naval Personnel Committee. As a result, every item of the stokers' respectful and relatively undemanding 1914 Loyal Appeal was rejected out of hand, whereas smaller, more unified branches, making similar appeals were rewarded. The one topic which actually brought stokers together and achieved limited success was their influence on victualling reform. Although even here, the reform proved beneficial to all men, not just to stokers.

For over one hundred years the Admiralty systematically refused to accept any responsibility for the proper feeding of the lower-deck. The stokers representing the Devonport division made strong representation to the Login Victualling Committee requesting the abolishment of the canteen messing system and removal of the worst excesses of ship's canteens. Their argument was strong enough for them to receive the full support and backing of all the other Devonport branch societies at a time when branch societies remained insular and stokers remained on the periphery of the lower-deck movement. The fact that the Devonport division united behind the stokers attests to the strong feeling of the men for victualling reform.

Yet, despite evidence which suggests that for many years prior to the Invergordon mutiny the poor system of naval victualling had been a real source of discontent on the lower-deck, the Admiralty and senior officers alike appeared to have taken little notice. Admiral Cowan, the former commanding officer of the *Zealandia* during the stokers' mutiny of 1914, showed that he had learnt nothing from the past or from the Invergordon insubordination itself when he observed:

For the last 4 or 5 years in my judgement the Admiralty have failed to check a growing looseness of discipline. As regards the men there has been far too much talk of increased privileges, comfort, food etc and too little of achievement and efficiency.⁸³⁴

⁸³⁴ A. Carew, *The Lower Deck of the Royal Navy 1900-1939*, 178.

As the contemporary editor and leading naval advocate Stephen Reynolds noted, the Admiralty was notoriously clever at moving without progressing,...at altering things without changing them.⁸³⁵ Instead of changing its outdated and amateur victualling system to a professional system like the British Army, the Admiralty instigated a succession of victualling committees during the early twentieth century and offered minor reforms to victualling that in the end, changed very little towards the comfort and well-being of the men and only added to the discontent that was building towards the eventual outburst at Invergordon.

On the lower-deck, relationships between most branches were strained to the point of open animosity. This situation also existed to some extent in the wardroom between different classes of warrant and commissioned officers; however, no such problems existed in the submarine service. Those who volunteered for submarines joined a service which treated everyone as an equal. It was also unusual in that it did not require the services of naval police to keep the men in order. If a submariner stepped over the line the worst punishment he could receive was to be 'returned to general service.' Submarine discipline to stoker Sydney Palmer 'was doing your job efficiently.'⁸³⁶ Palmer remembered that once the klaxon sounded 'everybody depended on everybody else to do their job.....you were not allowed to make an error.'⁸³⁷ As a result, submariners enjoyed a unique camaraderie which was not found in any other part of the service.

Submarine living was undoubtedly hard. Despite the obvious dangers, the relaxed style of discipline with more emphasis on personal rather than traditional naval discipline, together with the lure of extra pay, attracted a certain type of man. The oil fired, steam driven, K-class submarines have been portrayed by certain historians as inherently dangerous and intensely disliked by those unfortunate to have served in them. While they certainly suffered more than their fair share of accidents and mishaps, they were not as disliked as most

⁸³⁵ Mary A Conley, *From Jack Tar to Union Jack*, 54.

⁸³⁶ Sydney Palmer, *I.W.M. 28696* (London, Imperial War Museum Sound Archive, 2005). 3 Reels, Reel 2.

⁸³⁷ *Ibid.*

claim. Many men such as Leading Stoker Steel had great affection for their 'K' boats, even though being alternately baked by heat and then drenched with water cascading down the funnels and boiler room ventilators must have made keeping a watch in a K-Class boiler room a most trying experience.

No submarines participated in the Invergordon insubordination. Their independence of command, smaller crews, better pay and vastly different way of life probably isolated them from the agitation that had built up for many years in the surface fleet prior to Invergordon. In the submarine service men also benefited from having more direct access to their officers, while the mutual respect which existed at every level contributed to a more open and less hidebound society.

In late 1906, at the height of the popular culture of navalism, when the Navy and its sailors were very much in the public eye, a number of second class stokers caused a relatively minor disturbance at Portsmouth naval barracks which received widespread attention from the press. The Portsmouth barracks incident is notable not for what actually happened but for the way in which it brought stokers to the fore and into public and service disrepute. No doubt the press were initially attracted to the story because of the unusual nature of the incident which made lurid headlines. On the other hand, Jan Rüger noted in *The Great Naval Game*, that while the naval authorities attempted to utilise the naval stage for their own interests, the forces of mass culture had a strong grip on the way in which naval events were reported. As a result, what should have been a strictly private internal naval protest became a public spectacle in which civilian players became involved after the disturbances spilled out onto the public highway. Unfortunately, by bringing stokers to the fore, this incident became the catalyst which forever tarnished their reputation; thereafter they would be measured and judged by this one example of ill-discipline.

There has been a longstanding belief within the service, which is shared by many historians, that stokers had the worse disciplinary record in the Navy. However, evidence produced in this thesis has demonstrated that stokers actually had a far better individual disciplinary record than seamen and were also far less inclined to participate in acts of mutiny or collective disobedience.

In addition, it is notable that stokers showed remarkable restraint while participating in mutiny or collective disobedience by refraining from acts of malice or sabotage which traditionally characterised acts of disobedience by seamen. Moreover, in each of the most serious cases of mutiny committed by stokers the Admiralty laid the blame for each incident entirely on senior officers. As a result, the officers were punished not the men. This thesis has also demonstrated that many stokers had prior military experience either as marines or as former Army volunteers. Therefore, it is inconceivable that as so many of them had prior military experience they should have displayed a poor attitude to discipline. Rather it appears to have suited their detractors to add ill-discipline to their list of undesirable qualities.

With regards to the Invergordon insubordination the outcome is similar. The Admiralty official history observed that most of the leaders at Invergordon were 'able seamen of standing, with a few leading seamen and some stokers and marines.' This thesis set out to challenge the notion that stokers were an ill-disciplined and inferior class of men. It has examined the evidence and concluded that much of what has been published about stokers is neither accurate nor true. Yet, from the 1906 Portsmouth barracks mutiny, the stoker has been portrayed in history in a stereotypical and negative manner.

In concentrating on the negative stereotype historians have ignored much of what stokers stood for. No ship's sports team was without its complement of stokers, while stokers liked nothing better than to take on and beat seamen whether in a gun loading, boat-pulling or shooting competition. Stokers were also capable of displaying the same levels of bravery, initiative and traditions for the Navy as any other man. They served with distinction in naval brigades ashore during the Boer War and elsewhere, while one of the very first recipients of the Victoria Cross (Naval) was Leading Stoker William Johnston who served in the *Arrogant* during the Crimean war. Stokers such as Chief Stoker Albert Stickley was one of many to be credited with courageous conduct in the stokehole. Stickley was awarded the Albert Medal in 1904 after an explosion

wrecked a stokehold in the *Success*.⁸³⁸ Chief Stoker William Lashly was another exceptional man who epitomised the strong and patriotic sailor who was so popular in the public consciousness during the popular culture of navalism. Lashly accompanied Captain Scott on his 1901 and 1910 Antarctic expeditions and was awarded the Albert medal for helping to save the life of Lieutenant Evans on the hazardous 1500 mile trek back to base camp after Scott set out for the pole.⁸³⁹ Later in life, Admiral Evans wrote in the foreward to Lashly's diary:

This little volume Lashly's diary, is a chapter from the life of one of those steel-true Englishmen whose example sets us all a-thinking. I owe my life to Lashly's devotion and his admirable duty sense. He is one of those Yeomen of England whose type gave us Drake's men and Nelson's men and Scott's and Shackleton's men, and will do so again.⁸⁴⁰

These few examples represent the stokers who have been ignored in the general historiography of the lower-deck. Unfortunately, their deeds in the stokehole went unnoticed except by a handful of hardy commentators who witnessed at first hand the dangers they faced. It is a travesty of justice that men such as these should have suffered the label 'lowest of the low,' simply because their work was considered to be dirty, manual and un-seaman like.

The naval lower-deck was a microcosm of British society. Like the society it served it was class conscious, riven by snobbery and organised on strict hierarchical terms. While seamen reigned supreme through tradition, weight of numbers and by virtue of their authority as the 'military arm' of the service, other branches vied to establish their own position within the hierarchy. Telegraphists, writers and sick berth attendants claimed a high position by virtue of their superior intellect. Similarly, artisans such as blacksmiths, shipwrights, and coopers, also demanded recognition for being time-served tradesmen.

Ironically, the men who actually occupied the top position in the lower-deck hierarchy were the E.R.As, men who had no wish to be associated with it.

⁸³⁸ TNA, HO 45/10314/125047, "Albert Medal 2nd Class Alfred Stickley Chief Stoker," ed. Home Office (1905).

⁸³⁹ TNA, HO 45/10314/125047, Albert Medal.

⁸⁴⁰ A. R. Ellis, *Under Scott's Command*, 60.

E.R.As believed they were separate and distinct from the lower-deck, a notion they harboured as part of their longstanding ambitions to join the officer class. Because they were granted special privileges E.R.As looked down on all other tradesmen and seamen and consistently refused to participate in lower-deck petitions or Magna Charters preferring instead to pursue their own individual claims.

The Navy made E.R.As a special case and by awarding them a high status in the Navy it elevated them far above their actual position of tradesmen. As a result, they became immune from the class snobbery that acted against stokers. Despite their elitist class position, E.R.As worked happily side by side with stokers, the 'lowest of the low.' This working relationship was highly beneficial to both parties and relied on shared dangers and mutual trust and respect. Seamen resented the superior status accorded to E.R.As particularly because they received special privileges and more importantly because seamen had no authority over them. Moreover, in similar vein to the way in which marines were despised by seamen because they acted as officers' servants, stokers attracted the same level of criticism because they acted as mess-men to E.R.As.

The influence of Royal Marines on stokers became an unexpected feature of this thesis. Others have alluded to the mutual friendship that existed between these two groups of men but, apart from noting that a number of stokers had previously served in the marines or Army prior to joining the Navy, no real evidence or rationale for this friendship has been produced. It is now clear that both groups of men had more in common than previously thought.

Marines and stokers were both recruited as men as opposed to seamen who were mainly recruited as boys and youths. They also shared similar physical characteristics which set them apart from seamen and others. The numbers of former marines and soldiers in the stokers' ranks has been mentioned. However, while stokers have been accused of being the weak link in the chain of naval discipline, no one has considered the effect of the military experience and discipline that these former military men would have brought to the stokers' ranks. It is probable that they would have made stokers more, not

less, disciplined. Apart from stokers, marines were the only other men attracted to stokehole work. No doubt the attraction was the opportunity to earn extra pay at a time when pay was minimal, but possibly also because many of their former comrades were stokers and they identified with their ethos. As a result, these two disparate groups of men bonded together and formed lasting friendships on a lower-deck that was awash with inter-branch rivalries.

After the trouble at Portsmouth in 1906 a S.P.O. summed up the feelings of the stokers' branch by observing that stokers were viewed as 'social lepers whose presence in the Navy was only tolerated as a kind of necessary evil.' This thesis argues that history has helped portray stokers as the 'social lepers' of the Navy by repeating myths without providing the evidence necessary to substantiate their claims. The Navy has also played its part by regarding stokers as something akin to a 'necessary evil' and allowing the myths to become established when it had the evidence to dispel them at source.

This thesis argues that stokers were neither the 'lowest of the low,' the 'weakest link,' or 'a most inferior class of men.' Stokers themselves never acknowledged any of the myths attributed to them. Despite suffering many grievances through being treated differently to other men stokers simply got on with their job refusing to make a fuss. When challenged or to make a point they would demonstrate to one and all their expertise and stamina by 'overdriving' in the stokehole and blowing the safety valves. Stokers were never afraid to speak out when they suffered injustice. The stokers who created the disturbances at Portsmouth barracks and those who mutinied in the *Zealandia* spoke out against injustice. Unfortunately, anyone speaking out in a hidebound service such as the Royal Navy was bound to suffer the consequences and be noted for doing so. While largely avoiding punishment for these indiscretions, stokers undoubtedly brought attention to themselves. It is ironic that while stokers were much better disciplined than seamen, the few examples of ill-discipline that they became involved in were disproportionately advertised such that they attracted a reputation as 'trouble makers.'

The possibility exists that the myths that surround the stokers' story have survived for so long because stokers refused to acknowledge them. Had they

fought against them they may have made matters worse. Equally, by ignoring the labels pinned on them stokers gave others free reign to enlarge and elaborate the myths until they eventually permeated every level of the Navy and became an accepted part of naval historical belief. This thesis has challenged the many myths and inaccuracies that have blighted the stokers' story and ruined their historical reputation. It is hoped that the evidence provided here will prove useful to historians in the future and prevent others from making false representations against this unique body of men.

Appendix One

NAVY (SHIPS).

567

RETURN to an Order of the Honourable The House of Commons,
dated 16 February 1865 ;—for,

A RETURN " of the Number of STEAM SHIPS Afloat and Building, together with the Number of
Effective SAILING SHIPS, on 1st February 1865."

Admiralty. }
16 February 1865. }

C. H. PENNELL,
Chief Clerk.

RETURN showing the Number of STEAM SHIPS Afloat and Building, together with the Number of
Effective SAILING SHIPS, on the 1st February 1865.

CLASSES OF SHIPS.	STEAM.			Effective Sailing Ships Afloat.	TOTAL Steam and Sailing.
	Afloat.	Building.	TOTAL.		
Armour-plated Ships, Iron, 3d rates - - - Screw	6	3	9	-	9
Ditto - - - " 4th " - - - " "	2	-	2	-	2
Ditto - - - Wood, 3d rates - - - " "	6	1	7	-	7
Ditto - - - " 4th " - - - " "	1	-	1	-	1
Ditto - Cupola Ships, 4th rates - - - " "	4	-	4	-	4
Ditto - Corvettes, Wood, 6th rates - - - " "	1	1	2	-	2
Ditto - Sloops - - - " "	2	-	2	-	2
Ditto - Gun Boats, Iron - - - " "	-	3	3	-	3
Ditto - Floating Batteries, Iron - - - " "	3	-	3	-	3
Ditto - ditto - Wood - - - " "	2	-	2	-	2
Ships of the Line - - - - - " "	55	*3	58	1	59
Frigates - - - - - " "	37	1	38	9	47
Block Ships - - - - - Paddle	6	-	6	-	6
Corvettes - - - - - Screw	8	-	8	-	8
Sloops - - - - - " "	26	*1	27	-	27
Small Vessels - - - - - Paddle	35	3	38	4	42
Despatch Vessels - - - - - " "	19	-	19	-	19
Gun Vessels - - - - - Screw	13	-	13	-	13
Gun Boats - - - - - " "	4	-	4	-	4
Tenders, Tugs, &c. - - - - - Screw	37	*4	41	-	41
Mortar Ships - - - - - Paddle	105	*6	111	-	111
Troop and Store Ships - - - - - " "	7	-	7	1	8
Yachts - - - - - Screw	40	-	40	-	40
Mortar Vessels and Floats - - - - - Paddle	4	-	4	-	4
TOTAL SCREW - - - - -	15	-	15	-	15
TOTAL PADDLE - - - - -	1	-	1	-	1
GRAND TOTAL - - - - -	1	-	1	-	1
	5	-	5	54	54
TOTAL SCREW - - - - -	357	26	383	-	-
TOTAL PADDLE - - - - -	88	-	88	-	-
GRAND TOTAL - - - - -	445	26	471	69	540

* The building of 3 line-of-battle ships, 1 corvette, 4 gun vessels, and 4 gun boats, is suspended.

Controller's Office, }
15 February 1865. }

Rob. Spencer Robinson.

Appendix 2

HMS *Lancaster* Census Return 1911

Seamen Ratings

FIRST NAME	SURNAME	RATING	AGE	PLACE OF BIRTH	COUNTY	REGION	MARITAL STATUS
George T	Martin	Chief Petty Officer	36	Framlington	Suffolk	E	Married
James F	Coleman	Chief Petty Officer	34	Lambeth	Surrey	SE	Single
Geoffrey W	Turner	Petty Officer 1st Class	30	Bath	Somerset	SW	Single
William H	Horwill	Petty Officer 1st Class	30	Babbicombe	Devon	SW	Married
Frederick	Champress	Petty Officer 1st Class	31	Bermondsey	Surrey	SE	Married
Peter	Lowrie	Petty Officer 1st Class	32	St Leonards	Edinburgh	Scotland	Married
Harry	Dunn	Petty Officer 1st Class	39	Bromley	Kent	SE	Single
Alfred	Collins	Petty Officer 1st Class	31	Fulham	Middlesex	SE	Married
Harry	Sawyer	Petty Officer 1st Class	31	Wix	Essex	SE	Single
William C	Terry	Petty Officer 1st Class	35	St John's Dover	Kent	S	Married
John W	Ralph	Petty Officer 1st Class	36	Deal	Kent	S	Single
Fleetwood J	Bolitho	Petty Officer 1st Class	33	West Ham	Essex	SE	Single
Richard	Dibben	Petty Officer 1st Class	36	St Pancras	Middlesex	SE	Married
Henry	Britcher	Petty Officer 1st Class	35	Ashford	Kent	S	Married
Thomas	Cleveland	Petty Officer 1st Class	38	Ashford	Kent	S	Single
Harry	Trott	Petty Officer 1st Class	33	Yapton	Sussex	SE	Single
Peter	Bayne	Petty Officer 1st Class	31	Plumstead	Kent	S	Single
Oswald	Meyer	Petty Officer 1st Class	31	Trinity	North Shields	NE	Single
Robert	Read	Petty Officer 1st Class	30	Islington	Middlesex	SE	Single
Alfred G	Carey	Petty Officer 2nd Class	29	Withington	Herefordshire	W	Married
Charles	Ramroon	Petty Officer 2nd Class	31	Bembridge	Isle of Wight	S	Married
Alexander	Horr	Petty Officer 2nd Class	28	Huchesontown	Glasgow	Scotland	Married
Milton R	Hutchinson	Leading Seaman	31	St Mary in the Castle	Sussex	SE	Married
William H	Prior	Leading Seaman	24	Camberwell	Middlesex	SE	Single

Albert W	Spier	Leading Seaman	28	Wanstead	Essex	SE	Widower
Arthur C	Willis	Leading Seaman	22	Ealing	London	SE	Single
Robert	Corry	Leading Seaman	24	Peel	Isle of Man	NW	Single
Laurence E	Booker	Leading Seaman	23	Southcoates	Hull	NE	Single
Claude H	Sinclair	Leading Seaman	30	St Mary's	Dover	S	Single
Waller A	Spurgin	Leading Seaman	26	South Stokeham	Hampshire	SE	Married
Sydney	Smith	Leading Seaman	30	Ryde	Southampton	S	Married
Henry	Adams	Leading Seaman	25	Croydon	Surrey	SE	Married
Harry S	King	Leading Seaman	38	Higham Market	Suffolk	E	Single
William G	Bass	Leading Seaman	29	Romford	Essex	SE	Married
Henry	Reynolds	Leading Seaman	30	Newhaven	Essex	SE	Married
David	Parker	Leading Seaman	26	Stepney	London	SE	Married
James E	Bridson	Leading Seaman	29	Castletown	Isle of Man	NW	Single
Louis	Stewart	Leading Seaman	30	South Lieth	Edinburgh	Scotland	Married
Ralph	Mc Cormick	Leading Seaman	26	Jaulanda	India	Overseas	Single
James	Goodwin	Leading Seaman	27	Smallburgh	Norfolk	E	Single
Frederick T	Gale	Leading Seaman	25	Deptford	Surrey	SE	Single
Albert P	Howell	Leading Seaman	32	Hammersmith	London	SE	Single
Samuel M	Frost	Able Seaman	27	Southend	Essex	SE	Single
Harry	Claver	Able Seaman	23	Marylebone	London	SE	Single
Henry	Buller	Able Seaman	23	Maidenhead	Berkshire	SE	Single
Henry A	Hoffman	Able Seaman	24	Hoxton	London	SE	Single
William	Corris	Able Seaman	23	Liverpool	Lancashire	NW	Single
James	Day	Able Seaman	27	Bow	London	SE	Single
James J	Garner	Able Seaman	28	Biggleswade	Bedfordshire	SE	Single
Albert E	Cook	Able Seaman	30	Brixton	Surrey	SE	Single
William B	Gale	Able Seaman	28	Sutton	Hull	NE	Single
Edward J	Bailey	Able Seaman	27	Sydney	Australia	Overseas	Single
Leonard	Fleming	Able Seaman	29	Bermondsey	London	SE	Single

Alfred	Jarvis	Able Seaman	23	Gt Easton	Essex	SE	Single
Alfred G	Butler	Able Seaman	23	Hampstead	London	SE	Single
William H	Barker	Able Seaman	29	Stratford	London	SE	Single
Arthur	Brandon	Able Seaman	23	St Martin's Lane	London	SE	Single
Herbert B	Chapman	Able Seaman	26	Nunhead	Surrey	SE	Single
Sydney C	Cook	Able Seaman	23	Kentish Town	London	SE	Single
John	Kelly	Able Seaman	32	Leitrim	Ireland	Ireland	Single
Robert S	Brued	Able Seaman	22	Horncliffe	Kent	S	Single
Thomas	Elkington	Able Seaman	20	Cubbington	Warwick	Midlands	Single
William	Eddings	Able Seaman	21	Stepney	London	SE	Single
Charles H	Christie	Able Seaman	23	Walthamstow	London	SE	Single
Arthur E	Elliston	Able Seaman	27	Shoreditch	Middlesex	SE	Single
William H	Bairns	Able Seaman	26	Liverpool	Lancashire	NW	Single
Ernest	Allard	Able Seaman	24	Hythe	Kent	S	Single
Bert J	Gooderson	Able Seaman	20	Croydon	Surrey	SE	Single
Thomas	Mood	Able Seaman	34	Sheffield	Yorkshire	NE	Single
Arthur A	Clayton	Able Seaman	19	Bow	London	SE	Single
Edward	Francis	Able Seaman	22	Queenstown	Ireland	Ireland	Single
Leonard F	Judd	Able Seaman	20	Nechells	Birmingham	Midlands	Single
Sydney C	Compton	Able Seaman	28	Camberwell	Surrey	SE	Single
John H	Jordan	Able Seaman	21	Deal	Kent	S	Single
George H	Barr	Able Seaman	24	Maidstone	Kent	S	Single
Charles	Beaver	Able Seaman	23	Westminster	London	SE	Single
William H	Gosling	Able Seaman	26	Islington	Middlesex	SE	Single
Joseph	Good	Able Seaman	25	St Peters	Yorkshire	NE	Single
Edward R	Bogan	Able Seaman	21	St Peters	Belfast	Ireland	Single
Herbert	Cain	Able Seaman	21	Chester	Cheshire	NW	Single
James	Crawley	Able Seaman	21	Limehouse	London	SE	Single
Richard A	Cox	Able Seaman	22	Walthamstow	London	SE	Single
Albert	Hoxby	Able Seaman	21	Bethnal Green	London	SE	Single

William H	Betts	Able Seaman	22	Runcorn	Cheshire	NW	Single
James R	Goodings	Able Seaman	29	Yarmouth	Norfolk	E	Single
Frank	Jewitt	Able Seaman	26	Lambeth	Surrey	SE	Single
Richard	Jones	Able Seaman	25	Wallasey	Cheshire	NW	Single
Edward	Spencer	Able Seaman	26	Forrest Gate	Essex	SE	Single
Edwin L	Batterbee	Able Seaman	20	Waltham Cross	Essex	SE	Single
William	Cunningham	Able Seaman	21	Southwark	London	SE	Single
John	Dobson	Able Seaman	23	North Walsham	Norfolk	E	Single
Claude A	Hearns	Able Seaman	23	Colchester	Essex	SE	Single
William E	Chapman	Able Seaman	26	East Langdon	Kent	S	Single
Samuel M	Frost	Able Seaman	27	Southend	Essex	SE	Single
Harry R	Rowen	Able Seaman	20	Walthamstow	London	SE	Single
Frank E	Wood	Able Seaman	19	Hammersmith	London	SE	Single
Sam L	Martin	Able Seaman	23	Newchurch	Lancashire	NW	Single
William	Tomlin	Able Seaman	27	St Mildreds	Canterbury	SE	Single
Ernest A	Phillpott	Able Seaman	24	Dover	Kent	S	Single
Patrick A	Turner	Able Seaman	24	St Giles	Edinburgh	Scotland	Single
William J	Moss	Able Seaman	31	Teynham	Kent	S	Single
Norris J	Sayer	Able Seaman	22	Wiford	Suffolk	E	Single
Samuel	Williamson	Able Seaman	22	Audenshaw	Manchester	NW	Single
John W	Thake	Able Seaman	31	Stratford	Essex	SE	Married
Walter H	Longwood	Able Seaman	22	Coventry	Warwick	Midlands	Single
Henry	Scragg	Able Seaman	23	Oxford	Oxfordshire	S	Single
George A	Walter	Able Seaman	23	Harwich	Essex	SE	Single
Sidney H	Liddle	Able Seaman	21	Upton Cross	London	SE	Single
James	Payne	Able Seaman	29	Sandgate	Nottingham	Midlands	Single
Herbert J	Congerton	Able Seaman	27	Kensington	Middlesex	SE	Single
Bertie	Dexter	Able Seaman	23	Kings Lynne	Norfolk	E	Single
Edward	Vincent	Able Seaman	20	Stratford	London	SE	Single
Ronald	McDonald	Able Seaman	22	Brighton	Sussex	SE	Single

Charles	Monk	Able Seaman	20	Stratford	London	SE	Single
Samuel	Wilson	Able Seaman	21	Stepney	London	SE	Single
Samuel H	Traveller	Able Seaman	21	Tottenham	London	SE	Single
George B	Showler	Able Seaman	24	Stanground	Huntington	E	Single
Henry J	Woodard	Able Seaman	28	Canning Town	London	SE	Single
Henry G	Kiceagee	Able Seaman	21	Fulham	London	SE	Single
Percy J	Pont	Able Seaman	27	Sturry	Kent	S	Single
Richard	Nicholson	Able Seaman	31	Stromness	Orkney Isles	N	Married
Arthur J	Walker	Able Seaman	32	St Pancras	Middlesex	SE	Single
James C	Love	Able Seaman	23	Leytonstone	Essex	SE	Single
Thomas	Spencer	Able Seaman	22	Burnley	Lancashire	NW	Single
Geroge	Skeats	Able Seaman	23	Tillingham	Essex	SE	Single
Thomas H	Trevett	Able Seaman	22	Bridport	Dorset	SW	Single
Christopher	McCullum	Able Seaman	20	New Bradwell	Bucks	SE	Single
James A	Hoy	Able Seaman	20	Rotherham	Yorkshire	NE	Single
Thomas W	White	Able Seaman	20	Hampstead	London	SE	Single
Walter E	Prideaux	Able Seaman	20	Stepney	Middlesex	SE	Single
Edward F	Maguire	Able Seaman	20	New Cross	London	SE	Single
Frederick	Radley	Able Seaman	22	West Ham	London	SE	Single
Frank	Hemmings	Able Seaman	20	Plumsted	Kent	SE	Single
Charles	Hood	Able Seaman	18	Holborn	London	SE	Single
Arthur W	Studds	Able Seaman	27	Harwich	Essex	E	Single
Arthur J	Wood	Able Seaman	19	Battersea	London	SE	Single
Robert	Barkley	Able Seaman	24	Glasgow	Lanarkshire	Scotland	Single
Edward	Wistenholme	Able Seaman	25	Sheffield	Yorkshire	NE	Single
George A	Rudmen	Able Seaman	19	-----?	London	SE	Single
Thomas	Brown	Able Seaman	22	Salford	Lancashire	NW	Single
James	Lee	Able Seaman	24	Liverpool	Lancashire	NW	Single
John H	Shears	Able Seaman	20	Poplar	London	SE	Single
Nicholas J	Oliver	Able Seaman	24	Bishops Wearmouth	Durham	NE	Single

James H	Oxton	Able Seaman	21	Westminster	London	SE	Single
Harry	Sayer	Able Seaman	24	Salford	Lancashire	NW	Single
Sidney T	Pordage	Able Seaman	21	Haversham	Kent	S	Single
John	Maloney	Able Seaman	37	Queenstown	Cork Ireland	Ireland	Single
Ernest L	Veness	Able Seaman	22	Hastings	Sussex	S	Married
Daniel	McAuley	Able Seaman	19	Carrickfergus	Antrim Ireland	Ireland	Single
Henry T	Rutherford	Able Seaman	20	Gateshead	Newcastle	NE	Single
John W	Toaffe	Able Seaman	21	Belvedere	Woolwich	SE	Single
William H	Mcartney	Able Seaman	24	Doagh	Co Antrim Ireland	Ireland	Married
Thomas J	Hayton	Able Seaman	27	Brentford	Middlesex	SE	Single
James E	Bridson	Able Seaman	29	Castletown	Isle of Man	NW	Single
Thomas	Stanley	Able Seaman	32	Marylebone	Essex	SE	Single
Albert E	Reed	Able Seaman	20	Cardiff	Wales	W	Single
Rodney	Yeo	Able Seaman	21	Plymouth	Devon	SW	Single
Mathew C	Scott	Able Seaman	21	Barking	London	SE	Single
Robert	Mcbaker	Able Seaman	22	Manchester	Lancashire	NW	Single
Henry	Watts	Able Seaman	28	Westminster	London	SE	Single
Albert E	Cook	Able Seaman	19	Battersea	London	SE	Single
William	Raft	Able Seaman	25	Aberdeen	Scotland	Scotland	Single
Frederick	Chidwick	Able Seaman	27	Folkstone	Kent	S	Single
William W	Lawer	Able Seaman	20	Charlton	London	SE	Single
Benjamin H	Howard	Able Seaman	19	Lambeth	London	SE	Single
William A	Borgin	Able Seaman	25	Burnley	Lancashire	NW	Married
William	Bradley	Able Seaman	19	South Norwood	Surrey	SE	Single
Edward	Innocent	Able Seaman	20	Stratford	London	SE	Single
Edmond F	Birley	Ordinary Seaman	18	Greenwich	London	SE	Single
Robert	Moore	Ordinary Seaman	18	Lambeth	London	SE	Single
Thomas	Ravenscroft	Ordinary Seaman	21	Salford	Lancashire	NW	Single
William H	Phillips	Ordinary Seaman	18	Gillingham	Kent	S	Single
Laurence A	Higgins	Ordinary Seaman	18	Westgate on Sea	Kent	S	Single

Hayden	Bennett	Ordinary Seaman	18	Lambeth	London	SE	Single
John	Pindler	Ordinary Seaman	18	Islington	London	SE	Single
Daniel	Connor	Ordinary Seaman	18	St Giles	London	SE	Single
Alfred W	Fagg	Ordinary Seaman	18	Chelmsford	Essex	SE	Single
George	Edinburgh	Ordinary Seaman	18	Shoreditch	London	SE	Single
George	Ong	Ordinary Seaman	18	Fulham	London	SE	Single
Frank A	Norris	Ordinary Seaman	18	Faversham	Kent	S	Single
Frank	Oldham	Ordinary Seaman	18	St Giles	Northampton	Midlands	Single
George	Williams	Ordinary Seaman	18	Birchington	Kent	S	Single
John D	Wilson	Ordinary Seaman	18	Woolwich	London	SE	Single
Thomas F	Rutoch	Ordinary Seaman	18	Strood	Kent	S	Single
Robert N	Williams	Ordinary Seaman	18	Chorlton	Manchester	NW	Single
William J	Marshall	Ordinary Seaman	18	St Ignatius	Durham	NE	Single
Ernest	Hemmings	Ordinary Seaman	18	Drotwich	Worcester	Midlands	Single
Frederick C	Knights	Ordinary Seaman	18	Bermondsey	London	SE	Single
Autrey R	Burdon	Ordinary Seaman	18	Basildon	Oxford	SE	Single
Percy R	Hall	Ordinary Seaman	19	Sittingbourne	Kent	S	Single
Frederick	Field	Ordinary Seaman	18	Bethnel Green	London	SE	Single
Herbert H	Davies	Ordinary Seaman	20	Culverdon	Surrey	SE	Single
Benjamin W	Brown	Ordinary Seaman	19	Shoreditch	London	SE	Single
Thomas	Godman	Ordinary Seaman	18	Kilburn	London	SE	Single
Sydney G	Cooper	Ordinary Seaman	19	Hammersmith	London	SE	Single
Geoffrey R	Heard	Ordinary Seaman	19	Lower Walmer	Deal Kent	S	Single
Robert E	Bottomley	Ordinary Seaman	18	Finchley	London	SE	Single
Cornelius C	Humphrey	Ordinary Seaman	19	Newington	London	SE	Single
John G	Holmes	Ordinary Seaman	19	St Mary's	Dublin	Ireland	Single
William	Ware	Ordinary Seaman	19	Hampstead	London	SE	Single
Percy	Lake	Ordinary Seaman	19	Banbury	Oxford	SE	Single
Herbert	Waterman	Ordinary Seaman	19	Eastwood	Essex	SE	Single
Edwin S	Parker	Ordinary Seaman	19	Sculcoates	Hull	NE	Single

Francis F	Quinn	Ordinary Seaman	19	Clapham	Surrey	SE	Single
Frederick G	Neale	Ordinary Seaman	19	Paddington	London	SE	Single
William J	Leary	Ordinary Seaman	19	Chelsea	London	SE	Single
William J	Lee	Ordinary Seaman	21	Fulham	London	SE	Single
Alfred	Barratt	Ordinary Seaman	19	Canning Town	London	SE	Single
Robert	Arnold	Ordinary Seaman	19	Tendring	Essex	SE	Single
Lionel J	Mathews	Ordinary Seaman	19	Ross	Hereford	SW	Single
William	Heaney	Ordinary Seaman	19	Belfast	Antrim	Ireland	Single
Peter P	McCabe	Ordinary Seaman	19	Custom House	London	SE	Single
Clarence J	Wharton	Ordinary Seaman	18	Birmingham	Warwick	Midlands	Single
Henry A	Wilson	Boy 1st Class	17	Whistable	Kent	S	Single
Frederick R	Huffy	Boy 1st Class	17	Duleoaks	Hull	NE	Single
Robert J	Dunn	Boy 1st Class	17	Carshalton	Surrey	SE	Single
Harold J	Cadogan	Boy 1st Class	17	Newport	Monmouth	W	Single
Cecil K	Watts	Boy 1st Class	17	Carshalton	Surrey	SE	Single

Average Age of Chief Petty Officer Seaman	35.0
Average Age of Petty Officer Seaman Ratings	29
Average Age of Leading Seamen Ratings	25.5
Average Age of Able-Seamen Ratings	24
Total numbers of all Seamen including Ordinary & Boys	218

Appendix 3

HMS Lancaster Census Return 1911

Stoker Ratings

FIRST NAME	SURNAME	RATING	AGE	PLACE OF BIRTH	COUNTY	REGION	MARITAL STATUS
Richard Stewart	Barnes	Mechanician	35	Portland	Dorset	SW	Married
Thomas	Clark	Mechanician	36	Everton	Liverpool	NW	Single
James William	Chilvers	Chief Stoker	38	Minster Sheernes	Kent	SE	Married
Richard D	Clark	Chief Stoker	38	Barking	Essex	SE	Single
George	Camper	Chief Stoker	39	Eastwood Leigh	Essex	SE	Married
William Henry	Beadle	Chief Stoker	40	Maldon	Essex	SE	Married
Walter	Clinch	Acting Chief Stoker	36	Stockbury	Kent	SE	Married
Joseph Edward	Kingston	Stoker Petty Officer	30	Orpington	Kent	S	Married
Stephen	Pritchard	Stoker Petty Officer	33	New Cross	London	SE	Married
John Ernest	Burks	Stoker Petty Officer	35	Denton	Kent	S	Married
John	Diwell	Stoker Petty Officer	35	Camberwell	London	SE	Married
John Walker	Reynolds	Stoker Petty Officer	36	Flemming	Forfar	Scotland	Single
Stephen	Champ	Stoker Petty Officer	35	Teynham	Kent	S	Single
George	Thorne	Stoker Petty Officer	40	Plumstead	Kent	S	Married
John	Townsend	Stoker Petty Officer	29	Plumstead	Kent	S	Single
Henry James	Coffill	Stoker Petty Officer	30	Kensington	London	SE	Single
Christopher Frederick	Warren	Stoker Petty Officer	27	St Annes	Nottingham	Midlands	Single
Herbert	Spurgeon	Stoker Petty Officer	24	Great Yarmouth	Norfolk	E	Single
William Theophilus	Palmer	Stoker Petty Officer	35	Rainham	Kent	S	Single
Amos	Coffee	Stoker Petty Officer	32	Rochford	Essex	SE	Single
Ernest William	Aspden	Stoker Petty Officer	26	St Pancras	London	SE	Single
Percy Beggstaff	Powell	Stoker Petty Officer	28	Canterbury	Kent	S	Widower
Robert Charles	Hayward	Stoker Petty Officer	25	Chelsea	London	SE	Single
Richard	Hobbs	Stoker Petty Officer	28	Folkstone	Kent	S	Married

Herbert Horace	Croucher	Acting Leading Stoker	32	Minster	Kent	S	Single
Arthur	Martin	Leading Stoker	35	Sheernes	Kent	S	Married
Joeseeph	Taylor	Leading Stoker	24	Beckenham	Kent	S	Married
Frederick William	Spink	Leading Stoker	26	Woodbridge	Suffolk	E	Married
David	Foster	Leading Stoker	25	Stepney	London	SE	Single
Arnest Albert	Coleman	Leading Stoker	27	Faversham	Kent	S	Single
John	Page	Leading Stoker	30	Plumstead	Kent	S	Married
Frederick	Martin	Leading Stoker	30	Forrest Gate	Nottingham	Midlands	Married
John Daniel	Logan	Leading Stoker	27	Deptford	London	SE	Single
George Albert	Swan	Leading Stoker	23	Upminster	Essex	SE	Married
Frederick John	Kingsnorth	Leading Stoker	25	Marden	Kent	S	Single
James	Hughes	Leading Stoker	24	Islington	London	SE	Single
Arthur Sidney	Wheatland	Leading Stoker	27	Croydon	London	SE	Single
Ernest George	Batchelor	Leading Stoker	26	Sittingbourne	Kent	S	Single
Herbert Henry	Moore	Leading Stoker	30	Halifax	Yorkshire	NE	Single
George Charles	Desare	Leading Stoker	30	Brentwood	Essex	SE	Single
Henry William	Kemp	Leading Stoker	20	Marden Kent	Kent	S	Single
Harry Horace	Drake	Leading Stoker	24	Shaffesham	Norfolk	E	Married
Frederick R	Moody	Leading Stoker	27	Manchester	Lancashire	NW	Single
Samuel	Smith	Stoker 1 st Class	24	Kircaldy	Fife	Scotland	Single
Walker Robert	Henry	Stoker 1 st Class	23	Norwich	Norfolk	E	Single
Charles Frederick	Lampkin	Stoker 1 st Class	30	Warmshall	Kent	S	Married
Herbert Richard	Piggott	Stoker 1 st Class	27	St Pancras	London	SE	Single
George Albert	Rawlers	Stoker 1 st Class	29	Burton on Trent	Nottingham	Midlands	Single
Henry Herbert	Bartlett	Stoker 1 st Class	30	Banbury	Oxford	SE	Married
Charles Arthur	Godfrey	Stoker 1 st Class	21	Vauxhall	London	SE	Single
John	Kent	Stoker 1 st Class	29	Canning Town	London	SE	Single
Alfred	Bushell	Stoker 1 st Class	21	Grays	Essex	SE	Single
Ernest John	Hannaint	Stoker 1 st Class	20	Stiffkey Wells	Norfolk	E	Single

Ernest	Ashdown	Stoker 1 st Class	19	Tiverton	Devon	SW	Single
Herbert Wilson	Hillis	Stoker 1 st Class	19	Folkstone	Kent	S	Single
Albert George	Lyons	Stoker 1 st Class	21	Limehouse	London	SE	Single
Ernest William	Barnes	Stoker 1 st Class	20	Windsor	Berkshire	SE	Single
Albert Edward	Lewis	Stoker 1 st Class	20	Clapham	London	SE	Single
Thomas	Wilson	Stoker 1 st Class	22	Brentwood	Essex	SE	Single
Henry	Neilson	Stoker 1 st Class	23	Glasgow	Lanarkshire	Scotland	Single
Ezra	Snowdon	Stoker 1 st Class	23	Woodbrough	Nottingham	Midlands	Single
John	Murney	Stoker 1 st Class	20	Bootle	Liverpool	NW	Single
George	Phillimore	Stoker 1 st Class	24	Earlsfield	Surrey	SE	Single
James	Longhurst	Stoker 1 st Class	20	Dorking	Surrey	SE	Single
William	Bowers	Stoker 1 st Class	32	Yarmouth	Norfolk	E	Married
Percy John	Nind	Stoker 1 st Class	20	St Lukes	London	SE	Single
Elmer Edward	Tilbee	Stoker 1 st Class	19	Ashford	Kent	S	Single
Leonard Frederick	Fone	Stoker 1 st Class	19	Stratford	London	SE	Single
Arthur Albert	Colton	Stoker 1 st Class	19	Orey	Oxford	SE	Single
Kenneth William	Macintosh	Stoker 1 st Class	21	Toxteth	Liverpool	NW	Single
Harold	Wright	Stoker 1 st Class	19	Bray Maidenhead	Berkshire	SE	Single
Alfred	Peers	Stoker 1 st Class	19	Seaforth	Liverpool	NW	Single
Henry George	Compton	Stoker 1 st Class	19	Kildare	Ireland	Ireland	Single
Augustus Edward	Vidgen	Stoker 1 st Class	19	Bredhurst	Kent	S	Single
Livingston	Boyd	Stoker 1 st Class	19	Tyrone	Ireland	Ireland	Single
William Richard	Inkley	Stoker 1 st Class	19	Sittingbourne	Kent	S	Single
George	Wilred	Stoker 1 st Class	19	High Wycombe	Bucks	SE	Single
Herbert George	Blackford	Stoker 1 st Class	20	Canterbury	Kent	S	Single
Benjamin George	Morris	Stoker 1 st Class	27	Hoxton	London	SE	Single
Frank Thomas	Layton	Stoker 1 st Class	20	Holloway	London	SE	Single
Albert Harry	Mathews	Stoker 1 st Class	24	Hoxton	London	SE	Single
Alfred	Pilkington	Stoker 1 st Class	21	Torpurley Manchester	Lancashire	NW	Single
Edward Charles	Bailey	Stoker 1 st Class	20	Bridgwater	Somerset	SW	Single

John	Shaw	Stoker 1 st Class	24	Dinston	Devon	SW	Single
George	Reid	Stoker 1 st Class	23	Broxburn	Linithglow	Scotland	Single
James John	Casbolt	Stoker 1 st Class	21	Wood Green	London	SE	Single
Charles	Lloyd	Stoker 1 st Class	22	Aldershot	Hampshire	S	Single
James	Leonard	Stoker 1 st Class	22	Poplar	London	SE	Single
Frederick	Robinson	Stoker 1 st Class	21	Middlesboroug h	Yorkshire	NE	Single
James	Spenderlase	Stoker 1 st Class	23	Toxteth	Liverpool	NW	Single
Thomas	Williams	Stoker 1 st Class	21	St Marys	Birkenhead	NW	Single
Frank Richard	Mays	Stoker 1 st Class	26	Streatham	London	SE	Single
Victor Wild	Chillingsworth	Stoker 1 st Class	23	Walworth	London	SE	Single
Rhodes	Percival	Stoker 1 st Class	23	Horton	Yorkshire	NE	Single
Charles Henry	Lee	Stoker 1 st Class	22	Poplar	London	SE	Single
Major Caleb	Day	Stoker 1 st Class	25	Egerton	Kent	S	Single
Arthur	James	Stoker 1 st Class	27	Abington	Berkshire	SE	Single
Amos Harold	Steadman	Stoker 1 st Class	25	Rochester	Kent	S	Single
Charles James	Waddington	Stoker 1 st Class	22	Mile End	London	SE	Single
Alfred	Howard	Stoker 1 st Class	26	Battersea	London	SE	Married
Arthur Joseph	Miles	Stoker 1 st Class	24	St Lukes	London	SE	Single
Albert Charles	Rawbone	Stoker 1 st Class	23	Lambeth	London	SE	Single
Harry	Ditcher	Stoker 1 st Class	24	Maidstone	Kent	S	Single
Mathew	Hearn	Stoker 1 st Class	25	Sunderland	Durham	NE	Married
James John	Massingham	Stoker 1 st Class	25	Aylmerton	Norfolk	E	Single
George Sinclair	Bell	Stoker 1 st Class	24	Belfast	Ireland	Ireland	Single
Thomas William	Hollands	Stoker 1 st Class	23	Tunbridge Wells	Kent	S	Single
Cecil Valentine	Alderson	Stoker 1 st Class	22	Stratford	London	SE	Single
William Henry	Pipe	Stoker 1 st Class	21	East Ham	London	SE	Single
William James	Windle	Stoker 1 st Class	40	Camberwell	London	SE	Single
William	Nuckey	Stoker 1 st Class	25	Holborn	London	SE	Married
Thomas Edward	Nye	Stoker 1 st Class	26	Tonbridge	Kent	S	Single

Charles Henry	Empleton	Stoker 1 st Class	22	Tilbury	Essex	SE	Married
James Francis	Lock	Stoker 1 st Class	21	Fulham	London	SE	Single
James John	Valentine	Stoker 1 st Class	30	Paddington	London	SE	Single
George	Sharp	Stoker 1 st Class	31	Southwark	Surrey	SE	Single
Thomas	Smith	Stoker 1 st Class	30	Morley	Yorkshire	NE	Single
Thomas Charles	Anderson	Stoker 1 st Class	25	Strood	Kent	S	Single
Harry	Crockford	Stoker 1 st Class	21	Herne Hill	London	SE	Married
Albert Victor	Thompson	Stoker 1 st Class	21	Bermondsey	London	SE	Single
Edward	Bright	Stoker 1 st Class	28	Newcastle on Lyme	Newcastle	NE	Single
William Henry	Burley	Stoker 1 st Class	21	Wandsworth	London	SE	Single
Richard	Venison	Stoker 1 st Class	19	Chatham	Kent	S	Single
Henry Herbert	Smith	Stoker 1 st Class	24	Newington	London	SE	Single
William Charles	Eley	Stoker 1 st Class	21	Edghill	Liverpool	NW	Single
Samuel	Rudd	Stoker 1 st Class	25	St George	Wigan	NW	Single
George Edward	Jeffries	Stoker 1 st Class	22	Islington	London	SE	Single
Arthur	Baker	Stoker 1 st Class	24	Fulham	London	SE	Single
Clinton Gordon	Izod	Stoker 1 st Class	25	Pimlico	London	SE	Married
David James	Bones	Stoker 1 st Class	20	Denbury	Essex	SE	Married
William	Rose	Stoker 1 st Class	26	Dereham	Norfolk	E	Single
Henry	Hills	Stoker 1 st Class	29	City of London	London	SE	Single
William Patrick	Randall	Stoker 1 st Class	31	County Cork	Ireland	Ireland	Single
Charles	Cox	Stoker 1 st Class	21	St Werbury Derby	Derbyshire	NW	Single
James	Jenkins	Stoker 1 st Class	23	Belfast	Antrim	Ireland	Single
Thomas	Hudson	Stoker 1 st Class	21	Swale Cliff Whistable	Kent	S	Single
William John	Kerr	Stoker 1 st Class	21	Belfast	Antrim	Ireland	Single
Walter	Turner	Stoker 1 st Class	40	Shoeburyness	Essex	SE	Single
Alexander	Young	Stoker 1 st Class	31	Rutherglen	Glasgow	Scotland	Married
George	Kirk	Stoker 1 st Class	21	Derby	Derbyshire	NW	Single
John Alexander	Spring	Stoker 1 st Class	24	Peckham	London	SE	Single
John	Fitz	Stoker 1 st Class	29	Bermondsey	London	SE	Married

Louis Hubert	Torrington	Stoker 1 st Class	19	Hoxton	London	SE	Single
Harry James	Cobb	Stoker 1 st Class	26	Cheriton	Kent	S	Single
Sidney	Rogers	Stoker 1 st Class	22	Broadstairs	Kent	S	Single
William	Arnold	Stoker 1 st Class	21	Nottingham	Notts	Midlands	Single
Arthur	Hughes	Stoker 1 st Class	23	Sittingbourne	Kent	S	Single
Oliver	Thornton	Stoker 1 st Class	28	Nottingham	Notts	Midlands	Widower
William	Bearcraft	Stoker 1 st Class	41	Minster	Kent	S	Single
Henry	Reeve	Stoker 1 st Class	48	Northampton	Northants	Midlands	Single
Alfred Charles	Ward	Stoker 1 st Class	23	Hadleigh	Suffolk	E	Single
Luther	Rose	Stoker 1 st Class	22	Quinlow	Worcester	Midlands	Single
John Arthur	Warner	Stoker 1 st Class	24	Brighton	Sussex	SE	Single
Henry	Hart	Stoker 1 st Class	21	Folkestone	Kent	S	Single
William Alfred	Day	Stoker 1 st Class	21	Battersea	London	SE	Single
Thomas	Ainley	Stoker 1 st Class	29	St Johns	Yorkshire	NE	Single
Henry	Potter	Stoker 1 st Class	24	St John	Leicestershire	Midlands	Single
Frank	Penfold	Stoker 1 st Class	21	Lewes Maidstone	Kent	S	Single
Phillip Winter	Taylor	Stoker 1 st Class	25	Cappagwhite	Tipperary	Ireland	Single
Frederick John	Bottrell	Stoker 1 st Class	22	St Lukes	London	SE	Single
John	Farmer	Stoker 1 st Class	24	Liverpool	Lancashire	NW	Single
Edward Philip	Sanders	Stoker 1 st Class	24	Southwark	London	SE	Single
Michael James	Leonard	Stoker 1 st Class	28	Camberwell	London	SE	Single
James Walter	Coffill	Stoker 1 st Class	20	Kensington	London	SE	Single
John James	McCormack	Stoker 1 st Class	26	Liverpool	Lancashire	NW	Single
Walter Alfred	Elston	Stoker 1 st Class	21	Battersea	London	SE	Single
Frederick John	Smith	Stoker 1 st Class	21	Maidenhead	Surrey	SE	Single
Frederick James	Bain	Stoker 1 st Class	21	Paddington	London	SE	Single
Walter	Homes	Stoker 1 st Class	24	Stepney	London	SE	Single
John	Brummell	Stoker 1 st Class	22	Camberwell	London	SE	Single
James	Ayers	Stoker 1 st Class	30	Hendon	Sunderland	NE	Married
William	Britton	Stoker 1 st Class	29	Brentwood	Essex	SE	Married

Harry	Arnold	Stoker 1 st Class	20	Rochester	Kent	S	Single
Percy Thomas	Blann	Stoker 1 st Class	23	Penge	London	SE	Single
Andrew	Semple	Stoker 2nd Class	21	Belfast	Ireland	Ireland	Single
George Richard	Wallis	Stoker 2nd Class	19	Cedar Grove	Ireland	Ireland	Single
Arthur Samuel	Slade	Stoker 2nd Class	20	East Ham	London	SE	Single
Alfred	Cooley	Stoker 2nd Class	19	Cairo	Egypt	Overseas	Single
James	Orrell	Stoker 2nd Class	19	Seaforth	Liverpool	NW	Single
Robert	Baxter	Stoker 2nd Class	21	Plumstead	Kent	S	Single
John	Jolliffe	Stoker 2nd Class	20	Everton	Liverpool	NW	Single
Sidney Albert	Keyne	Stoker 2nd Class	22	Southwark	London	SE	Single
Thomas	Styles	Stoker 2nd Class	20	West Norwood	London	SE	Single
Frederick William	Knapp	Stoker 2nd Class	19	Lambeth	London	SE	Single
Ernest Thomas	Dray	Stoker 2nd Class	20	Plumstead	Kent	S	Single
Frederick William	Eustace	Stoker 2nd Class	19	Deptford	London	SE	Single
Alfred	Gibbs	Stoker 2nd Class	21	Marylebone	London	SE	Single
David Henry	James	Stoker 2nd Class	20	Upton	London	SE	Single
Frederick Sydney	Yelverton	Stoker 2nd Class	19	Woolwich	London	SE	Single
James Henry	Mummery	Stoker 2nd Class	19	Kirkdale	Liverpool	NW	Single
John	Shutt	Stoker 2nd Class	19	Everton	Liverpool	NW	Single
James John	Carson	Stoker 2nd Class	21	St Anthony's	Liverpool	NW	Single
John Joseph	Burns	Stoker 2nd Class	19	Largan	County Down	Ireland	Single
Samuel	Crowl	Stoker 2nd Class	19	Shankhill	Belfast	Ireland	Single

Average Age of Chief Stokers 38.2

Average Age Of Stoker Petty Officers 31.1

Average of Leading Stokers 26.9

Average Age of v1st & 2nd Class Stokers 23.2

Total Number of Stokers 194

Appendix 4

Stoker's Cramp by Staff-Surgeon Oswald Rees HMS Fox

PLACE	Dry Bulb	Wet Bulb
Outside Air (in-degrees)	83.5 F	88 F
After end of S.H. (stokehole) not in use. Used by experimenter, fluid was kept here, the men coming to drink as requiring of it.	86 F	99 F
Fore part of fore S.H. fans running about 400 lineal feet	90 F	110 F
Engine Room starboard evaporator - - - - -	90 F	107 F
- - - - - condenser - - - - -	86 F	98 F
- - - - - dynamo - - - - -	84 F	92 F
- - - - - port evaporator - - - - -	94 F	111 F
- Interior of number 6 boiler chipping carried out inside	91 F	112 F

No	Age	Years Service	Duty	Remarks
		Years Months		
1	20	1 9	Firing	80 fluid ounces in 3 hours
2	20	1 8	Firing	105 oz
3	25	7 0	Firing	120 oz
4	20	1 5	Coal Trimming	82 oz
5	34	14 0	Petty Officer in charge	63 oz
6	27	7 8	Firing	120 oz
7	38	18 0	Petty Officer in charge	52 oz
8	26	5 5	Firing	76 oz
9	31	10 7	Evaporator	40 oz
10	27	3 4	Engine Room	60 oz
11	22	1 8	Firing	80 oz. Was exhausted after half an hour's work, but carried on to end of watch, when urine temperature = 100.6 degrees F. Placed on sick list following day.
12	26	4 6	Engine Room	19 oz
13	20	1 5	Trimming	77 oz urine temperature, 96.6 F
14	25	5 4	Engine Room	40 oz
15	26	4 9	Dynamo	12 oz
16	20	1 8	Cleaning No. 6 boiler	73 oz in 1.5 hours

Note: The fluid is given in ounces per three hours. We attempted to obtain the urine temperatures on return from the stokehold but were only able to get any urine passed in two cases.

Two or three points emerge from this table. In the first place, provided the work is of the same character, there is very little difference in the amount of fluid taken. Of the six men who were employed in "firing" the amounts drunk were 76.80 (2), 105 and 120 (2), respectively, and both of the 120 ounce men had over seven years experience as stokers (No. 3 & 6.) When we hear that it is the young stoker who suffers most from drinking too much fluid in the stokehold, we must remember that it is the young stoker who is employed in the hottest positions; the older man has obtained a rate, or is engaged in day work on some special job. The fluid was taken at very regular intervals, and there was no increase in the amount drunk towards the end of the watch.⁸⁴¹

⁸⁴¹ Oswald, Rees, Staff-Surgeon, H.M.S *Fox*, *Stoker's Cramp*, in *Statistical Report of the Health of the Navy for 1908*, (London, 1909), 185.

Appendix 5

Savings

APPENDIX V

SAVINGS.

THE system known as "Savings" allowed Naval men to leave a portion of their daily rations in the hands of the Paymaster, for which they drew a money equivalent. This was paid to the caterer of each mess, and went towards settling the mess account entered into with the canteen.

ARTICLE.	SAVINGS.
	s. d.
Biscuit	0 1½ per lb.
Soft Bread	0 1½ "
Jam	0 2½ "
Spirit	3 0 per gal.
Coffee	0 6½ per lb.
Sugar	0 2 "
Chocolate	0 5 "
Milk, Condensed	Not allowed.
Tea	1 0 per lb.
Salt	Not allowed.
Mustard	0 3½ per lb.
Pepper	0 4½ "
Vinegar	0 6 per gal.
Fresh Meat*	0 4 per lb.
Fresh Vegetables*	0 0½ "
Salt Pork	0 4 "
Salt Beef	0 4 "
Preserved Meat	0 5 "
Split Peas	Not allowed.
Compressed Vegetables	0 6 per lb.
Celery Seed	Not allowed.
Flour	0 1½ per lb.
Suet	0 4 "
Raisins	0 2 "
Rice	0 2 "

* Savings of Fresh Meat and Fresh Vegetables are not to be paid beyond the proportion of one-third of the ration.

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⁸⁴² L. Yexley, *The Inner Life of the Navy*, (London: 1908), 386

Appendix 6

Comparison of United States Navy Victualling 1908

MEATS.	Cabbage, early	FRUITS.	Horse-radish
Beef, fresh	" late	Bananas	Hominy, grits
" frozen	Sauerkraut	Oranges	Nuts, mixed
Pork loins, fresh	Turnips	Apples	Oats, rolled
Veal, fresh	Carrots	Peaches	Olives
Mutton, fresh	Tomatoes	Pears	Potato chips
Sausages, frankfurter	Beets	Cherries	Baking powder
" pork	Squash	Grapes	Peas, split
" bologna	Pumpkins	Berries	Pickles, sweet
Tongues, smoked	Beans, string	Cranberries	Salad dressing
Hams, sugar-cured	" Lima	Water Melons	Soda, baking
Shoulders "	Peas, in pods	Cantaloupes	Tobasco sauce
Liver, fresh	Corn, on ear in husks		Sauce, Worcester
Hamburger steak	Spinach	GROCERIES.	Sardines
Corned beef	Kale	Barley	Spices
Hearts, fresh	Cauliflower	Beans, Lima	Allspice
Ham, compressed	Lettuce	Beef, chipped	Bay leaves
Head-cheese	Cucumbers	Buckwheat	Capers
Pigs' feet, compressed	Celery, in stalks	Cornstarch	Cinnamon
Chicken, fresh	Asparagus	Corn meal	Citron
Turkey, fresh		Catsup	Cloves
	BREAD.	Crackers, soda	Ginger, ground
FISH.	Bread, wheat	" oyster	Mint, dried
Fish, fresh	" graham	Currants, dried	Mace
Oysters	Rolls	Chowchow	Nutmegs
Clams		Extract, vanilla	Pepper, white
Crab meat	BUTTER, etc.	" lemon	" Cayenne
	Butter, extra cream	" fruit	Powder, curry
VEGETABLES.	Cheese, full cream	Fish, shredded	Sage
Potatoes, new, Irish	" tinned	Fruit butter	Savory
" old "	Eggs, fresh	Glucose & fruit jams	Thyme
" sweet "	Milk, fresh	" jellies	Tapioca
Onions, Bermuda	Yeast	Hops	
" main crop			

The United States Navy supplied a wide variety of fresh, frozen and chilled foods and had entirely dispensed with salted, dried or preserved victuals unlike the Royal Navy.⁸⁴³

⁸⁴³ Yexley, L., ed. 'American Navy Victualling,' *The Fleet Annual and Naval Year Book 1908*, (London: 1908), 54.

Appendix 7

SCALE OF VICTUALLING FOR SEAMEN, &c., IN HIS MAJESTY'S NAVY.

	WHEN TO BE ISSUED.	ARTICLES.	SEAMEN.		SCALE OF SUBSTITUTES.
			Officers, Crew and others, at Seaman's Full Allowance.	Supernumeraries at two-thirds of Seaman's Allowance.	
1	Daily	Biscuit* lb.	1½	5	<p>In case it should be necessary to issue Substitutes for any of the Articles in this Scale of Victualling, the following proportion is to be adopted, viz. :-</p> <p>Biscuit 1 lb. } are to be considered equal to each other. Flour 1 lb. } Rice 1 lb. }</p> <p>Wine ½ pint } do. do. Spirit ½ gill } Porter 1 pint }</p> <p>Coffee 1 oz. } Cocoa 1 oz. } do. do. Chocolate, Ordin. 1 oz. } „ Soluble 1.2 oz. } Tea ½ oz. }</p>
2		or Soft Bread lb.	1½	1	
3		Spirit pint	½	1½	
4		Sugar oz.	2	1½	
5		Chocolate—Ordinary ... oz.	1	½	
6		or „ Soluble† ... oz.	1.2	—	
7	Weekly	Tea oz.	½	1	
8		Oatmeal oz.	3	2	
9		Mustard oz.	½	½	
10	Every four days ...	Pepper oz.	½	½	
10A		Vinegar pint	½	½	
11	Daily, when procurable	Salt oz.	1	½	
12		Fresh Meat lb.	1	½	
	When Fresh Provisions cannot be procured :-				<p>The following, when issued with Meat Rations, are to be considered equal to each other :-</p> <p>1. { Split Peas ½ lb. Peas (Whole) ½ pint Flour ½ lb. Calumances ½ pint Dholl ½ pint Rice ½ lb.</p> <p>2. { Vegetables ½ lb. Compressed Mixed Vege- tables 1 oz. Preserved Potato 2 oz.</p> <p>3. { Oatmeal ½ pint or 2 oz. Split Peas ½ lb.</p> <p>In cases where the Spirit Ration is not taken up, one of the following Substituted Rations may be issued, in accordance with Art. 1,732, Page 800, King's Regulations, 1899, viz. :-</p> <p>1. { Tea ½ oz. Soluble Chocolate ½ oz. Sugar 1½ oz. or</p> <p>2. { Tea ½ oz. Sugar 2½ oz. or</p> <p>3. { Soluble Chocolate ½ oz. Sugar 2 oz.</p>
13	Every other day ...	Salt Pork lb.	1	½	
14		Split Peas lb.	½	½	
15		Celery Seed ½ oz. to every 8 lbs. of Split Peas put into the Coppers.			
16	On one alternate day	Salt Beef lb.	1	½	
17		Flour oz.	9	6	
18		Suet oz.	½	½	
19		Raisins oz.	1½	1	
20		Preserved Meat lb.	½	½	
21	On the other alternate day	with either (1) Preserved Potato ... oz.	4	2½	
22		or (2) Rice oz.	4	2½	
21		or (3) Preserved Potato ... oz.	2	1½	
22		and Rice oz.	2	1½	
17		or Flour oz.	9	6	
18		(4) Suet oz.	½	½	
19		Raisins oz.	1½	1	
NOTES.					
* When the men desire it, ½ lb. of Flour may be issued in lieu of ½ lb. Biscuit.					
† The issue of Soluble Chocolate, in lieu of Ordinary, may be sanctioned by the Commander-in-Chief whenever the stock of Soluble Chocolate at any of the Depôts abroad is in excess of 12 months' average issues.					
The Scale also applies to cases where Commanding Officers sanction the issue of Soluble in lieu of Ordinary Chocolate, in consequence of the stock of the former article on board being such as to render unlikely that it will be otherwise brought into use until deteriorated by age, or before the Ship has been put out of commission.					
In these cases "savings" are to be paid as for the original article of Ration (Ordinary Chocolate)					

844 Report of the Committee Appointed to Inquire into the Question of Navy Rations, Meal Hours, The Prices Paid for Savings and the Management of Canteens, ed. Admiralty, (London: 1901), 60.

Appendix 8

Stokers' Loyal Appeal March 1914

To the Lords Commissioners of the Admiralty and all Members of Parliament. Following up the Loyal Appeal from the Lower-deck, we the above mentioned ratings present in a full spirit of loyalty the following disabilities under which we still labour. We have noticed with interest that the Naval estimates for 1913-14 show that the total engine room personnel for the first time in the history of the British Navy outnumber the Executive or seamen class.

We would beg to state that modern machinery and the various appliances on board ships of war call for a higher class of work and therefore better men than formerly, we therefore ask that this appeal may have your favourable consideration, our rates of pay being not such as we consider our due.

The qualification money asked for remuneration in specialising in different kinds of work performed is not an innovation as it would only level us up with other classes of service ratings. We are of the opinion that the position of the Leading Stoker should be improved onboard HM Ships and more consideration given to him as a 'Leading Hand' thus enabling him to assume that sense of responsibility so necessary to the discipline and efficiency of HM Navy.

We would point out that the mechanician was the only rating in our department who did not benefit under the recent increases in pay, we therefore ask that he be considered and that the rating of chief mechanician be acceded to him. This rating of 'Chief' is enjoyed by the E.R.A. and Electrical Artificer and we think it would be an act of simple justice to open it up to the mechanician also.

At present promotion to Warrant rank for the Stoker Class is only made possible through the mechanician, we feel that the time *and the opportunity* has arrived to extend this rank to the chief stokers. At present a committee under the presidency of Rear Admiral E. E. Bradford, CVO is inquiring into the advisability of a single Store Officer onboard HM Ships and we suggest that chief stokers

are eminently suitable to fill these positions (with Warrant rank) owing to their previous experience of stores and practical knowledge of the various store articles in HM Ships.

We hope that something may be done to extend promotion from stoker to Commissioned Rank, at present the limit being to Commission Warrant Rank only.

A tabulated statement relative to revision of pay is shown with remarks as to remuneration for work performed other than the usual Stokehold and Engine Room duties.

Pay Revision of	Present rate	New rates required
Stoker 2 nd Class	1s-8d	No change
Stoker 1 st Class	2s-1d	2s-2d
After 6 years service	2s-4d	After 3 years' service 2s-6d
Acting Leading Stoker	2s-8d	2s-8d
Leading Stoker	2s-8d	2s-9d
After 3 years service	2s-10d	After 3 years service 3s-0d
Stoker Petty Officer	3s-2d	3s-5d
After 3 years service	3s-4d	After 3 years service 3s-7d
After 6 years service	3s-6d	After 6 years service 3s-9d
		After 9 years service 3s-11d
Chief Stoker	3s-10d	4s-2d
After 3 years service	4s-4d	After 3 years service 4s-10d
After 6 years service	4s-10d	After 6 years service 5s-5d
After 9 years service	5s-4d	After 9 years service 6s-0d
After 12 years service	5s-10d	

Note at the present rating of Chief Stoker it is impossible to attain 12 years service as such.

Mechanician	4s-6d	5s-0d
After 3 years service	5s-0d	increased 6d every three years
After 6 years service	5s-6d	
After nine years service	6s-0d	
After 12 years service	6s-6s	

Note only a very small percentage can attain to over 12 years service as a Mechanician.

Remuneration for duties performed outside the ordinary Engine Room and Stokehold duties.

We are of the opinion that a small remuneration should be given for men qualified in Internal Combustion Engines, Oil Fuel, Distilling Plant, Dynamos, Air Compressors, Refrigerating and Hydraulic Machinery on similar lines to that given to the Seaman Class for gunnery and torpedoes.

We also ask that Mechanicians, Chief Stokers and Stoker Petty Officers may qualify for Instructors and be paid as such.

J.H. Southam Secretary
123 Albany Road, Gillingham Kent.⁸⁴⁵

⁸⁴⁵ *The Fleet*, March 1914.

Appendix 9

Training of Ordinary Seamen in Mechanical and Stokehold Work

Article 363

The course of training in the use of mechanical tools and in stokehold work for Ordinary Seamen qualifying for the rating of Able Seamen is to be as follows :-

(a) Training in the use of simple tools, under a Chief or Leading Stoker Mechanic, and working at water tight doors, sluices, fire-mains, ventilator systems, etc., as convenient .

Time 15 days.

The following is a list of the tools :-

Levers,	Ratchet brace,
Screw-driver, Jacks,	Purchases,
Spanners,	Spanish windlass,
Tommies,	Hammers, hand and sledge,
Wedges,	Drifts and punches,
Files,	Brace and bits,
Hatchet,	Chisel

(b) Training in stokehold work, ordinary stokehold day work, sweeping tubes and backs, cleaning etc.

Time 5 Days

Bunker work and firing – alternate watches at the two duties, working in three watches, in harbor or easy steaming at sea.

Time 5 Days

Firing, cleaning fires, and general stokehold watch-keeping in three watches, in harbor or easy steaming at sea. In ships with cylindrical boilers, part of this instruction is, if possible, to be in picket boat or other boat fitted with water tube boiler.

Time 5 Days

Total time under instruction 30 days. While under instruction in the use of tools and in stokehold work, Ordinary Seamen are in every respect to be considered as attached to the engine room complement.

3, - No change has been made in these courses since 1903 and they are now laid down in the present (1913) Article 378A of the King's Regulations.

4, - The syllabus of Mechanical Training was laid down as follows :-

- | | |
|-----------------------|---|
| 1 day | To learn the names and uses of tools, etc- calipers, rule, set-square, spanner, taps, dies, drills etc. |
| 2 days | <u>Chipping</u> , With flat and cross cut chisels and hammer, to form a flat surface on a piece of rough material, afterwards to form into a square, rectangle or hexagon, a mm piece of iron bolt-stave to a standard size. |
| 5 days | <u>Filing</u> , Learning to use files and to file a flat surface. Afterwards to shape a piece of Bolt-stave into a square, rectangle or hexagonal form, to a given size and to file a square hole in a piece of scrap boiler plate. |
| 2 days | <u>Drilling</u> , Drilling holes with ratchet brace and drill to standard sizes for tapping or clearing holes, in scrap material for nuts, ship's fittings etc. |
| 3 days | <u>Tapping</u> Forming a thread in a hole that has been drilled, for a nut or other purpose, to a standard size; and screwing a piece of bolt-stave forming a stud or bolt, the bolt or nut to be a good working fit on completion. |
| 2 days, | <u>Blacksmiths Work</u> , To work at a small forge –repairing and tempering chisels, drills, etc and repairs to ship's work of a minor character. |
| 2 days, | <u>Ships Work</u> , Working in the Engine Room. |
| 1 day, | the names and uses of W.T. doors, sluice and drain valves, pumps, and simple rules for opening and closing valves, cocks etc. |
| <u>Total 18 days.</u> | |

5 :- The syllabus was reduced in 1913 to a fortnight as follows ;-

Lecture on tools, names uses etc	1 day
Chipping	1 day
Filing	1 day
Drilling	1 day
Tapping	1 day
Blacksmiths work	2 days
Names of water tight doors, valves etc	1 day
Resume (any subject they may be backward in)	<u>1 day</u>
	Total <u>9 days</u>

NB They should be taught to use their tools in both hands.⁸⁴⁶

⁸⁴⁶ TNA, ADM, 116/1680, 'Training of Young Seamen and Boys in Seagoing Ships: Report of Admiral Hood's Committee,' ed. (Admiralty, 1913).

Appendix 10

Numbers of Permanent Active Service Ratings
in each Branch on 15 June 1919.

Seamen	46,802	}	55,343
Telegraphists	4,065		
Signals	4,476		
Sailmakers	101		
E.R.As & Mechanics	5,042	}	35,519
Stokers	30,477		
Shipwrights	1,332		
Carpenters Crew	163		
Joiners	311		
Blacksmiths	391		
Plumbers	238		
Painters	266		
Coopers	212		
Armourers	938		
Electrical Artificers	932		
Sick Berth Staff	1,492		
Writers	952		
Victualling	697		
Cooks	1,994		
Miscellaneous	1,262		
Officers Stewards & Cooks	4,598		
Service Boys	5,296		
Boy Telegraphists	802		
Boy Signals	711		
Royal Marines inc Band	21,425 ⁸⁴⁷		

⁸⁴⁷ TNA. ADM 116/1893, "Welfare Committee: Representation of Lower Deck."

Appendix 11

“Naval Magna Charta” for 1912

A Loyal Appeal from the Lower-deck

Sir, YOUR attention is respectfully drawn to the following disadvantages under which Petty Officers and Men of the Royal Navy still labour. These items are set forth in a loyal spirit, by selected representatives of all classes of the Lower-Deck, with the earnest hope that you will continue to use your influence to have them placed before, and carefully considered by, My Lords Commissioners of the Admiralty and Treasury, with a view to their being, if possible, remedied. This opportunity is taken, also, to express grateful appreciation of the several concessions already made, resulting in greatly improved and happier conditions of service to the men of His Majesty’s Fleet.

Direct Representation to the Admiralty

1. That the Lower-deck be granted the privilege of forwarding petitions, through Commanding Officers and thence through Commanders-in-Chief, to the Admiralty, at stated periods, in a similar manner to the concessions enjoyed by men of His Majesty’s Dockyards. This privilege would allow Naval matters of general interest –such as the following–to be correctly explained by them in a disciplined and loyal manner, with mutual good results to the Royal Navy.

Increased Pay, Promotion. and Pay for Good Conduct

2. That a 20 per cent increase of wages be granted to all Lower-deck Ratings having in view the increased cost of living and the increasing difficulties that Lower-deck Ratings find to meet their liabilities.
 - 2 (a) That a system of continuous progressive pay be introduced for all ratings, as an incentive to zeal and good conduct, and to insure a possibility of maximum rates of pay being reached before completing time for pension.
 - 2 (b) That where practicable, Chief Petty Officers Rating and Warrant and Commissioned rank be extended to all ratings on Lower-deck in proportionate numbers.
 - 2(c) That all Lower-deck ratings be granted Good Conduct Badges and paid for same.

Pensions

3. That the foundation of a man’s standard pension, at present limited to 10*d.* per day, be based on a scale of 1/2*d.* a day for each year of a man’s service, observing that although the period of service to obtain a pension has been increased from

20 to 22 years, no corresponding increase of pension has been granted for the additional time required to be served. Also that Non-continuous Service Men may receive, in addition to the standard rate, the pension of the substantive rating held by them.

- 3 (a) That Leading Seamen shall be allowed the addition of one farthing a-day towards their pension for each year's service in that rating from date of being rated instead of "after three years service as such".

Good conduct Gratuity to C.P.O's

- 3 (b) That all Chief Petty Officer's be again granted a Good conduct Gratuity of 20s as was formerly the case, instead of 15s as now authorised, and that Non-continuous service men receive the gratuity of their relative ratings.

Pensions to Widows, Children &c

- 3 (c) That pensions be granted to Widows, Children, or dependent relatives of deceased Petty Officer's, Seamen and Marines in proportion, according to their length of service. Such pensions to be granted whether they are serving or pensioned at the time of death.

Profits on Provisions

- 3 (d) That all articles sold by Civilian Contractors in ships and Naval Establishments be supplied direct through official naval sources, similar to those under Vote 2, and that the profits accruing from both sources be controlled by the Admiralty, and applied as a fund for Widows, Orphans or other dependent relatives of Naval men.

Long and Meritorious Medal

- 3 (e) That a Long and Meritorious Service Medal be authorised for the Royal Navy, carrying with it annuities in a similar manner to that awarded to the Royal Marines, *vide* Article 1191 of the King's Regulations.

Disrating only after trial by Court-Martial

4. Whilst fully appreciating the concessions contained in Circular Letter No. of 5th April 1910, the men ask that, prior to disrating, they shall be tried by a Service Court-Martial, and they submit that, for offences of a technical nature, one or more Officer's with a knowledge of the duties of the Petty Officer or Non-Commissioned Officer being tried, shall be a member of the court. The great injustice of summarily disrating Petty Officers,

Leading Rates and Non-Commissioned Officers with its attendant grave consequences, such as reduction of Pension, ineligibility for promotion to Warrant Rank, loss of Good Conduct Medal, Badges, Gratuities &c., is well known and universally admitted, and in view of the fact that the cost would be very little –other than the small official fee now paid –a just reason is seen for withholding this simple reform.

- 4 (a) That in the event of a Petty Officer being disgraced, all his Petty Officer's time shall be secured to him for Pension should he not regain his former rating, prior to being Pensioned.

Tuberculosis Sanatoria

5. That Sanatoria for the treatment of Tuberculosis contracted by Naval Men be provided and maintained by the Admiralty.

Hospital Stoppages

6. That all Lower-deck ratings sent to hospital, except when sent there through their own misconduct, be given free treatment without loss of pay (after being sick in a Home Hospital for 30 days, men are stopped a portion of their pay, except when injured on duty, varying according to their status. After a further period of 61 days their pay ceases altogether).

Assessment of Abilities

7. That the new method of assessing men's abilities in accordance with Admiralty Circular Letter No. 14, N12331/10, of 12th May 1911, be discontinued, and the old method be reverted to, as it is viewed with disfavour by all Lower-deck Ratings. The just application of the instructions contained in the above quoted letter is believed to be impracticable, and would, in any case, act prejudicially against men seeking employment in civil life on leaving the service, owing to the apparent, but unreal fluctuations in a man's recorded ability as he progressed through the various grades of promotion.

Free Kit

8. That a gratuitous issue of Uniform Clothing be supplied and maintained for all Naval Ratings, in order that the Senior Service may be placed on an equality in this respect with the public services of the State.

Distinctive Uniform for Petty Officers

- 8 (a) That a distinctive and general pattern Uniform be supplied to all Petty Officers and Artisan Ratings similar to that worn by Class 3.

Items which will not involve a great increase in Naval Estimates

Civil Power Convictions

9. At present a man convicted on shore for a Civil Offence, on his returning to his ship is often again punished by the Service for the same offence. This is considered a great injustice.

Plain Clothes

10. That the wearing of plain clothes by naval men while on leave be permitted by the Admiralty.

Mess Attendants

11. That Mess Attendants be provided for Chief and Petty Officers by scale, under the definite authority of the King's Regulations, as is now allowed for Engine Room Artificers.

Inadequate Accommodation

- 11 (a) That the attention of the Authorities responsible for designing His Majesty's Ships be earnestly directed to the inadequate Messing and Sleeping accommodation provided for Lower Deck Ratings.

Petty Officers in Hospital

- 11 (b) That where possible, separate Wards and Messing accommodation be provided for Chief and Petty Officers in Naval Hospitals, and that they be relieved of menial work.

Freedom of Purchase

12. That while the present system of Victualling continues, messes placed on the 9 1/2d scale be allowed freedom of action as to where they purchase their provisions, other than those obtained through official sources; observing that compulsory purchase through the Canteen is viewed with intense disfavour, as the latter is not always the cheapest and best market.

Improved Issue and Store Rooms, and Cooking Facilities

- 12 (a) That the present Issuing Rooms are too small and inadequately fitted. Better storage accommodation is required in the latest design of ships, to comply with, and make successful, the present condition of victualling. It is also submitted that the issuing and cooking staffs at present allowed are totally insufficient to meet requirements, in view of the fact that they are constantly called away from their work for

evolutions, &c.

13. That all Chief and Petty Officers Messes throughout the service be allowed the option of receiving the 9 1/2d victualling scale.

Short or Special Service

14. After an adverse experience of 8 years, it is respectfully impressed on the Authorities that the entry of men for "Special" Service is a distinct weakness to the ships in which they serve and the Public Service in general.

Employment of ex-Naval Men

15. To facilitate and enable ex-Naval men to procure employment, the Admiralty are asked to exert their influence to induce other Government Departments, and Contractors with Naval Establishments, to give favourable consideration to the employment of these men.
16. That the Royal Fleet Reserve be open to all ratings.
17. That a Petty Officer or man be not deprived of his Non-substantive rating for alleged incompetency, until after examination by a qualified board of Officers, similar to that constituted for passing him for his particular rating.

November 1911⁸⁴⁸

⁸⁴⁸ TNA. ADM 116/1661, "Revised Rates of Pay, Allowances and Pensions for Naval Ratings and Royal Marines," Appendix, Naval Magna Charta for 1912, 17.

Appendix 12

Interview 5822:

Walter Prior Butcher, Stoker onboard HMS Nelson at Invergordon, 1931.

Source Allan Ereira, Recorded 1980, 1 Reel, 13 minutes. © I.W.M.

Q1: Stokers played a very big part in the mutiny why?

A: Most stokers were on old rates of pay on a ship like that so were more or less in the majority. Pay was the cause of the mutiny.

Q2: Without the stokers the mutiny would have been impossible?

A: Well yes, they all played their part in that way but the seamen made sure the anchors couldn't be raised, so she couldn't have gone to sea with the anchors still down.

Q3: What did they do with the anchors?

A: They lashed the cables and put, sat across, put seats across the cables.

Q4: Was any attempt made to shift them?

A: No, no

Q5: I gather that what happened on the Nelson unlike some other ships was that there was a recognised group of men who as it were running the ship for those two days and that the Commander was communicating with them about what would happen and what wouldn't?

A: That is correct. That is correct. Lew Lake? He kept everyone in touch more or less with what ever came from the Admiralty.

Q6: And you were at some meeting on the Wednesday I think when Lew Lake called that group together?

A: Oh that was on the upper deck. He called the group together. It wasn't a clear lower deck or anything like that. He got what people he could

together on the upper deck and said the Admiralty had ordered the ships back to port 'would they go.' And everyone, well I won't say everyone, but most of the people agreed and it was carried by a majority.

Q7: Was there was much discussion of it, you were at that meeting were you?

A: Yes I was at that meeting, there was not a great lot of discussion it was just when he said about going back to Home Ports everyone wanted to go home and that was it.

Q8: Was morale good or bad onboard the Nelson before this happened?

A: I always found the morale very good.

Q9: And what about after it happened, did it have any effect?

A: Not really, not to my knowledge, no I didn't really find that.

Q10: Of course from your personal point of view it didn't really affect you very much?

A: No, no.

Q11: You mentioned a couple of Nelson stokers who were discharged, what happened to them?

A: Well they were taken into barracks and I only know that Bazzleget wrote back to the ships company and asked for help because he'd been discharged. He wrote a letter back and said he'd stuck up for all those people onboard now he'd got his ticket.

Q12: And what response was there onboard?

A: Well I think some did give money but there was no great lot of response, not really speaking.

Q13: Did the men who got discharged, were they actually the ring leaders? I suppose they were, they would have been well known on that ship?

A: Oh yea, yeh, yeh.

Q14: Was there any surprise that this had happened to him I mean one of the reasons why people had agreed to sail home was because they had been promised there would be no reprisals?

A: Well, I think he did other things as well, I think there was other things compared with him you see he acted as a, apparently one thing he did he was supposed to double across the parade everyone doubled across

the parade in barracks and he walked across and there was a whistle blown and he said I'm deaf like you know he made out he was deaf.

Q15: So far as the Navy was concerned it was an opportunity to get rid of general trouble makers?

A: That's right yeh, that's what I think.

Q16: Now obviously the Commander onboard the Nelson Lew Lake played a very important part in.....

A: That's right, he was a very tall man everyone said he wore corsets, but er he was really smart, a smart fellow. When we went through the Panama canal he had the ship enamelled it was supposed to be out of his own pocket whether it was or not it, I think it was true. He also had all the upper deck done with, over the bollards he had them all covered with a trellis wooden work and everything was really done up to impress the Yanks when we got to the other end. Going through one of the locks the ship went in crab fashion and scrapped the sides and hit the 'regal' on top of the port just as I was looking through.

Q17: Was there a great feeling of shame over the mutiny, I'm very struck by.....

A: Well he went throughout the fleet with the same story, he said they looked for all the people they could send they looked to Nelson but he's dead they can't have him; Jellicoe we can't get him either he said they sent me.

Q18: Is that the story you heard? That's another one, but obviously it was very much a two fingers at the Admiralty speech

A: If anyone knew John Kelly he was a very straight talking man, he didn't talk educated at all he always talked very gruff he was a gruff voiced man he just spoke like that.⁸⁴⁹

⁸⁴⁹ W. P. Butcher, *I.W.M. 5822*, (Imperial War Museum Sound Archive, 1980), Audio Tape 1 Reel.

Bibliography

Primary Sources

Admiralty Library Portsmouth

Admiralty Papers

'Diagram Showing the Number of Ships in Commission and Engine Room Ratings, Seamen and Marines Voted for Each Year from 1793-1903,' (London, 1904).

His Majesty's Steam Vessel Comet: Pay Book. ed. (Admiralty, 1822).

'Return of Numbers Borne in H.M. Fleet,' ed. (Admiralty, 1918), p. 15.

The National Archives Kew

Admiralty Papers

TNA ADM 156/71, 'Atlantic Fleet: Insubordination at Invergordon,' ed. Admiralty, (London, 1931).

TNA ADM 156/94, 'Disaffection in 1st Destroyer Flotilla,' ed. Admiralty, (London, 1919).

TNA ADM 173-6134, Log of Submarine K-5. ed. Admiralty (London, 1918).

TNA ADM 1/7895, 'Court Martial Lieutenant B St G Collard,' ed. Admiralty, (London, 1906).

TNA ADM 1/7895, 'Rules and Regulations: Royal Naval Barracks Portsmouth,' ed. Admiralty, (London, 1905).

TNA ADM 1/8627/118, 'Training of New Entries: Report on the Training and Discipline of Stokers,' ed. Admiralty, (London, 1922).

TNA ADM 1/8756/174, 'Committee of Messing in H.M. Ships Victualled on the Standard Ration and Messing Allowance System,' ed. Admiralty, (London, 1931).

TNA ADM 7/941, 'New Scheme of Training Officers and Men,' ed. Admiralty, (London, 1903).

TNA ADM 35/4426, 'His Majesty's Steam Vessel Lightning: Pay Book,' ed. Admiralty, (London, 1828).

TNA ADM 116/626, 'Clothing Gratuity Granted to Stoker Ratings on First Entry,' ed. Admiralty, (London, 1902).

TNA ADM 116/1661, 'Revised Rates of Pay, Allowances and Pensions for Naval Ratings and Royal Marines,' ed. Admiralty, (London, 1912).

TNA ADM 116/1680, 'Training of Young Seamen and Boys in Seagoing Ships: Report of Admiral Hood's Committee,' ed. Admiralty, (London, 1913).

TNA ADM 116/1728, 'Pay, Allowances, Pensions Etc: Recommendations of the Jerram Committee,' ed. Admiralty, (London, 1919).

TNA ADM 116/1867, 'Pay and Allowances, Equalisation of Army and Navy Navy Separation Allowances Etc.,' ed. Admiralty, (London, 1918).

TNA ADM 116/1893, 'Welfare Organization-Minute by Admiral of the Fleet Earl Beatty,' ed. Admiralty, (London, 1920), p. 5.

TNA ADM, 'Welfare Committee: Representation of Lower Deck,' ed. Admiralty, (London, 1919).

TNA ADM 116/2867, 'Representation of Grievances by Men of the Royal Navy Navy,' ed. Admiralty, (London, 1931).

TNA ADM 116/2891, 'Cuts in Lower Deck Pay,' ed. Admiralty, (London, 1931).

TNA ADM 116/3136, 'Naval Canteens: Excise Laws and Licensing,' ed. Admiralty, (London, 1930).

TNA ADM 116/ 975, 'Commander-in-Chief Devonport to Secretary Admiralty,' ed. Admiralty (London, 1907), p. 1.

TNA ADM 156/89, 'H.M.S. Leviathan: Outbreak Amongst Men at Birkenhead ', ed. Admiralty, (London, 1918).

TNA ADM 156/157, 'Court of Enquiry into Mutinous Conduct Amongst H.M.S. Zealandia's Stokers ', ed. Admiralty, (London, 1914).

TNA ADM, 156/157, 'Mutiny in the Royal Navy Navy: H.M.S. Amphitrite,' ed. Admiralty, (London, 1917).

TNA ADM, 156/157, 'Disaffection in Number 2 Portsmouth Battalion,' ed. Admiralty, (London, 1921).

Jellicoe Sir, J., 'Board Minutes on Court of Inquiry,' in TNA, ADM, 156/157 Court of Inquiry into Mutinous Conduct Amongst H.M.S. Zealandia's Stokers (London, 1914).

TNA ADM 174/404, 'Report of the Committee Appointed to Enquire into the Question of the Canteen and Victualling Arrangements in H.M Fleet,' ed. Admiralty, (London, 1907), p. 119.

TNA ADM 188/286, 'Continuous Service Certificate John Walker Reynolds ', ed. Admiralty (London, 1893).

TNA ADM 188/888, 'Continuous Service Certificate, Bullock E.W.,' ed. Admiralty, (London, 1911).

TNA ADM 188/900, 'Continuous Service Certificate, Richard Frank Rose,' ed. Admiralty (London, 1912).

Friendly Societies

TNA FS 15/218, 'Royal Naval Chief Stokers, Leading Stokers and Stokers Sick Benefit and Burial Society,' ed. Friendly Societies, 1885).

His Majesty's Stationery Office

'Friendly Societies, Workmen's Compensation Schemes, Industrial and Provident Societies, and Trade Unions: Reports of the Chief Registrar of Friendly Societies,' 1911), p. 1867.

Home Office

TNA. HO 45/10314/125047, 'Albert Medal 2nd Class Alfred Stickley Chief Stoker,' ed. Office, H., 1905).

Office for National Statistics

TNA 14/349731, 'Census of England and Wales: Enumeration Book for the Royal Navy: His Majesty's Ship Lancaster ' (London, 1911), p. 25.

Imperial War Museum Sound Archive

Primary Source Oral Testimony - Audio Tape and Transcripts

Boin, H. W., *I.W.M. 666* (London, Imperial War Museum Sound Archive), 1975, Audio Tape 3 Reels.

Bruty, W. G., *I.W.M. 759* (London, Imperial War Museum Sound Archive), 1976, p. 85.

Butcher, W. P., *I.W.M. 5822*: (London, Imperial War Museum Sound Archive), 1980, Audio Tape 1 Reel.

- Carr, N. S., *I.W.M. 5809* (London, Imperial War Museum Sound Archive), 1980.
- Claude, A. R., *I.W.M. 661* (London, Imperial War Museum Sound Archive), 1975.
- Consett, M. C., *I.W.M. 17308*, (London, Imperial War Museum Sound Archive), 1997.
- Dunn, J., *I.W.M. 769* (London, Imperial War Museum Sound Archive), 1975, Audio Tape 9 Reels.
- Dyke, P. J., *I.W.M. 5843* (London, Imperial War Museum Sound Archive), 1980,
- Harbin, R. H., *I.W.M. 5837*(London, Imperial War Museum Sound Archive), 1980, Audio Tape 1 Reel.
- Hargreaves, W. R., *I.W.M. 750* (London, Imperial War Museum Sound Archive), 1980, Audio Tape 1 Reel.
- Leary, J., *I.W.M. 553/18* (London, Imperial War Museum Sound Archive), 1975, p.127.
- Ley, R. P., *I.W.M. 5810* (London, Imperial War Museum Sound Archive), 1980,
- Lilley, A. E., *I.W.M. 750* (London, Imperial War Museum Sound Archive), 1976, Audio Tape 8 Reels.
- Maloney, J. A., *I.W.M. 663* (London, Imperial War Museum Sound Archive), 1975, Audio Tape 6 Reels.
- Masters, H., *I.W.M. 26543*, (London, Imperial War Museum Sound Archive), 2003, Audio Tape 7 Reels.
- Palmer, S., *I.W.M. 28696*, (London, Imperial War Museum Sound Archive), 2005.
- Piggott, W., *I.W.M. 12235* (London, Imperial War Museum Sound Archive), 1991. Audio Tape 15 Reels.
- Pullen, E., *I.W.M. 692* (London, Imperial War Museum Sound Archive), 1975. Audio Tape 27 Reels.
- Rose, R. F., *I.W.M. 754* (London, Imperial War Museum Sound Archive), 1976. p. 104.
- Willis, R., *I.W.M. 758* (London, Imperial War Museum Sound Archive), 1976.
- Wells, G. E., *I.W.M. 9068* (London, Imperial War Museum Sound Archive), 1973.

University of Leeds Brotherton Archive - Liddle Collection

Primary Source Oral Testimony - Audio Tape and Transcripts

Bedford, L. V., 'Personal Recollections of Naval Service,' in Liddle Collection, ed. Liddle, P. H. (Leeds, 1976), p. 4.

Bullock, E. W., 'R.N.M.N./ Bullock, *Transcript of Memoirs of Service as a Stoker in the Royal Navy*,' in Liddle Collection, ed. Liddle, P. H. (Leeds, 1971), p. 66.

Cooper, T., *R.N.M.N. (Rec) 018, Transcript of Memoirs of Service as a Stoker in the Royal Navy*, in Liddle Collection, ed. Liddle, P. H. (Leeds, 1975).

Hutchinson, T. G., 'R.N.M.N/Hutchinson (Rec), *Transcript of Memoirs of Service as an Engineer Lieutenant Commander R.N.*,' in Liddle Collection, ed. Liddle, P. H. (Leeds.

Millett, W. T., Stoker, 'R.N.M.N. (Rec) 121, Transcript of Interview,' in Liddle Collection, ed. Liddle, P. H. (Leeds, 1978), p. 8.

Nancarrow, H., Leading Stoker, 'Personal Recollections of Naval Service,' R.N.M.N. (REC) 121, in Liddle Collection, ed. Liddle, P. H. (Leeds, 1988).

Reid, C., Stoker, 'R.N.M.N. (Rec) 090a, Transcript of Interview,' in Liddle Collection, ed. Liddle, P. H. (Leeds, 1977), p. 16.

Royal Navy Submarine Museum

Primary Source Diaries and Letters

N. 575/25, Commander-in-Chief Plymouth Station to Secretary of the Navy, 1925, 'Unwillingness of Plymouth Men to Volunteer for Submarines'.

Godden, E. F. M., to Gus Britton Archivist, November 16th 1984, 'Some Reminiscences of the 'Old Days'.

Nicholas, J. P., 'Some Sort of Description of Submarine K26,' in A1985/041, Royal Navy Submarine Museum (Gosport, p. 24).

Ridley, R., 'Life in a 'H' Boat Fifty Years Ago,' (Gosport, 1983).

Steel, L.S.J., 'K1: Her Last Dive,' (Gosport, 1917), p. 14.

Printed Primary Sources

National Museum of the Royal Navy

Admiralty, *Mutiny in the Royal Navy: 1691-1919*, ed. Tactical and Staff Duties Division. 2 vols. Vol. 1 (London: 1933).

Admiralty, *Mutiny in the Royal Navy 1921-1937*. ed. Tactical and Staff Duties Division. 2 vols. Vol. 2 (London: 1955).

Eardley-Wilmot, A. P., *Manning the Navy* (London: 1849).

'Orders in Council for the Regulation of the Naval Service 18: School of Cookery and Trained Cooks,' ed. Admiralty, 1872).

'Orders in Council for the Regulation of the Naval Service 107: 'Training Stokers to Arms and Management of Machinery and Boilers of Torpedo Boats,' ed. Admiralty (London, 1886).

'Orders in Council for the Regulation of the Naval Service 119: Allowance for Instruction of Stokers in Use of Small Arms, Boat Pulling Etc,' ed. Admiralty (London, 1891).

'Orders in Council for the Regulation of the Naval Service 129: Alterations in Training Pay Etc of Engine Room Ratings,' ed. Admiralty (London, 1906).

'Orders in Council for the Regulation of the Naval Service 232: Clothing Gratuity to Newly-Entered Stokers,' ed. Admiralty (London, 1902).

'Orders in Council for the Regulation of the Naval Service: Ships Complements ', ed. Admiralty (London, 1853), pp. 740-869.

Reynolds, J. W., 'Diary of the Mediterranean Commission of H.M.S. Lancaster ' in Manuscript Collections, (Portsmouth, 1910).

Scotland's People: Registrar of Births and Deaths

837/020011, 'Births in the Southern District of Kirkpatrick Flemming in the County of Dumfries, Reynolds, John, Walker,' ed. Deaths, R. o. B. a., 1871).

House of Commons Parliamentary Papers Online

Bowles, G., 'Navy Estimates for 1900-1; with Explanation of Differences (Navy: Annual Estimates),' (London, 1901).

- Elliot, G., and Ryder, A. P., ' Report by Admiral G. Elliot and Rear-Admiral A. P. Ryder, Members of Committee on Designs for Ships-of-War, Dissenting from Report of Committee,' ed. (Admiralty, 1872), p. XIV.583.
- Hamilton, J. A. B. S., 'Working Classes Cost of Living Committee, 1918. Report of the Committee Appointed to Enquire into and Report Upon (I) the Actual Increase since June, 1914, in the Cost of Living to the Working Classes and (II) Any Counterbalancing Factors (Apart from Increases of Wages) Which May Have Arisen under War Conditions,' (London: 1918).
- Hansard, 'Navy Estimates for the Year 1910-11, with Explanation of Differences,' ed. (Admiralty, 1910), p. LXI.1.
- Hansard, 'Insubordination among Crews,' in (House of Commons Debate, 1914).
- House of Commons, 'Stoker Mechanics,' ed. (Admiralty, 1912).
- Jerram, M., 'Report of Naval Pay Committee: Recommendations in Regard to Pay Allowances and Pensions of Royal Navy and Royal Marines,' ed. (Admiralty, 1919), p. 22.
- Login, S. H. M., 'Report of the Committee Appointed to Inquire into the Question of the Canteen and Victualling Arrangements in H.M. Fleet (Navy: Canteen and Victualling Arrangements),' ed. (Admiralty, 1907), p. L.841.
- 'Memorandum Dealing with the Entry, Training, and Employment of Officers and Men of the Royal Navy and of the Royal Marines (Navy: Personnel: Navy and Marines,' ed. (Admiralty, 1902), p. LXI.673.
- 'Memorandum Respecting Water-Tube Boilers in H.M. Ships,' ed. (Admiralty, 1900), p. LI.305.
- Navy (Victualling Savings). Copy of the Report of the Admiralty Committee Appointed in 1870 to Inquire into the System of Savings of Provisions and Victualling in Royal Navy,' in House of Commons Papers, Reports of Commissioners_(London, 1876), pp. 1-46.
- 'Navy Estimates with Explanation of Differences ', ed. Admiralty, 1914), p. LIII.1.
- Noel, C. N. n. B. B., 'The Third Report of the Commissioners for Revising and Digesting the Civil Affairs of His Majesty's Navy,' in House of Commons Papers; Reports of Commissioners (London, 1806).
- 'Particulars of the More Serious Accidents Which Have Occurred During the Coaling of His Majesty's Ships in the Years 1910, 1911, and 1912 ', ed. (Admiralty, 1912), p. LIII.433.
- Rees, O., 'Body Temperature and the Causation of Heat Stroke,' in Statistical Report of the Health of the Navy, ed._Porter, J. (London, 1908), pp. 107-15.

- Rees, O., 'Papers on Stokers' Cramp,' in *Statistical Report of the Health of the Navy 1909*, ed. Porter, J. (London, 1909), pp. 184-7.
- 'Report of the Committee Appointed to Inquire into the Question of Navy Rations, Meal Hours, the Prices Paid for Savings and the Management of Canteens,' ed. Admiralty (London: 1901), p. 70.
- 'Report on Standard Time Rates of Wages and Hours of Labour in the United Kingdom on October, 1913 ', ed. (Board of Trade, 1914), p. LXXX.919.
- 'Report to Admiralty by Committee on Marine Engines,' ed. Admiralty, 1859), p. XV.517. 'Return of Number of Steam-Ships Afloat, Building and Converting, with Number of Effective Sailing Ships: February 1865,' ed. (Admiralty, 1865), p. XXXV Pt.II.567.
- Return showing, approximately for five years (a) Percentage of Seamen and Stokers who Re-engage to Complete Time for Pension; and (b) Percentage of Seamen and Stokers who Leave on Termination of First Engagement, but who Return to the Service within Twelve Months, (Admiralty, 1894), in *Navy (Seamen and Stokers Re-Engagement)*, House of Commons Parliamentary Papers Online, 1894, (189).
- 'Return of Torpedo Boats of Navy Tested in Trials in Channel, May 1887,' ed. (Admiralty, 1887), p. LII.673.
- 'Returns of the Number of Courts-Martial Held and Summary Punishments Inflicted on Seamen of the Royal Navy, &C., During the Years 1888-1912,' (London), HOC Parliamentary Papers Online.
- 'Seamen and Royal Marines (Seniority),' ed. Commons, H. O., 1919).
- 'Seamen, Marines and Stokers in the Royal Naval Barracks on 4th and 5th November,' ed. House of Commons, 1906).
- 'Statement of Admiralty Policy ', ed. Admiralty (London: 1906), p. LXX.445.
- 'Statistical Report of the Health of the Navy for the Years 1901-1912,' in *House of Commons Papers*, ed. Ellis, H.M. (London, 1902),
- Statement Showing the Present and New Rates of Pay for the Royal Navy and Royal Marines, (Admiralty, 1912), Cd. 6118.
- Yorke, C. P. t. E. H., 'Report of the Commissioners Appointed to Inquire into the Best Means of Manning the Navy,' ed. Admiralty, 1859).

Printed Primary Sources

Admiralty, *The Stokers Manual*. 2nd ed (London, 1927), p. 180.

'*Advantages of Service in the Royal Navy and Royal Marines and How to Join*'
(London: 1902), p. 30.

'*Advantages of Service in the Royal Navy and Royal Marines and How to Join*,'
(London, 1904), p. 47.

'*Advantages of Service in the Royal Navy and Royal Marines and How to Join*,'
(London: 1907), p. 47.

Fox, C. H., Lt RN, *Manual of Seamanship for Boys and Seamen of the Royal Navy, 1904*. Vol. 1 (London: 1905).

The King's Regulations and Admiralty Instructions for the Government of His Majesty's Naval Service 1913. ed. Admiralty. 2 vols. Vol. 1 (London: 1913).

Ross, J., *A Treatise on Navigation by Steam: Comprising a History of the Steam Engine, and an Essay Towards a System of the Naval Tactics Peculiar to Steam Navigation, as Applicable Both to Commerce and Maritime Warfare; Including a Comparison of Its Advantages as Related to Other Systems in the Circumstances of Speed, Safety and Economy, but More Particularly in That of the National Defence* (London, 1828).

Printed Secondary Sources

Anon, *The History of H.M.S. Drake* (Plymouth, 1973).

Arthur, M., *Lost Voices of the Royal Navy: Vivid Eyewitness Accounts of Life in the Royal Navy from 1914 to 1945* (London: 2005), p. 563.

Bailey, C., Howard, (ed) *Social Change in the Royal Navy 1924-1970: The Life and Times of Admiral Sir Frank Twiss* (Gloucestershire: 1996), p. 235.

Baynham, H., *Men from the Dreadnoughts* (London, 1976), p. 272.

Broten, N., '*From Sickness to Death: The Financial Viability of the English Friendly Societies and Coming of the Old Age Pensions Act, 1875-1908*,' (London, 2010), p. 67.

Brown, D. K., *Warrior to Dreadnought; Warship Development 1860-1905* (London, 1997), p. 224.

Burgess, R., and Blackburn, R., *We Joined the Navy: Traditions, Customs and Nomenclature of the Royal Navy* (London, 1943), p. 124.

- Capper, H. D., *Aft-from the Hawsehole: Sixty-Two Years of Sailors' Evolution* (London, 1927), p. 267.
- Carew, A., *The Lower Deck of the Royal Navy 1900-39: Invergordon in Perspective* (Manchester, 1981), p. 269.
- Clayton, T., *Sea Wolves: The Extraordinary Story of Britain's W.W.2 Submarines* (London, 2011), p. 436.
- Clinker Knocker, *Aye Aye Sir* (London, 1938).
- Compton-Hall, R., *Submarines at War, 1914-18* (Penzance, 2004), p. xiv, 345 p., [16] p. of plates.
- Conley, Mary, A., *From Jack Tar to Union-Jack: Representing Naval Manhood in the British Empire, 1870-1918* (Manchester, 2009), p. 215)
- Corbett, J. S., *History of the Great War: Naval Operations*. 3 vols. Vol. 1 (London, 1921).
- Craven, J. P., *The Silent War: The Cold War Battle beneath the Sea* (New York: 2001), p. 304.
- Deck, L., *The British Navy from Within* (London: 1914), p. 200.
- Divine, D., *Mutiny at Invergordon* (London, 1970), p. 259.
- Dixon, T. B., *The Enemy Fought Splendidly* (Poole, 1983), p. 96.
- Dorling, T., [Taffrail], *Endless Story* (London, 1931).
- Dwyer, D. J., *A History of the Royal Naval Barracks Portsmouth* (Portsmouth: 1961), p. 90.
- Edwards, K., *The Mutiny at Invergordon* (London, 1937), p. 425.
- Ellis, A. R., *Under Scott's Command: Lashly's Antarctic Diaries* (New York: 1969), p. 160.
- Ereira, A., *The Invergordon Mutiny: A Narrative History of the Last Great Mutiny in the Royal Navy and How It Forced Britain Off the Gold Standard in 1931* (London, 1981), p. x, 182p.
- Everitt, D., *K Boats: Steam-Powered Submarines in World War I* (Shrewsbury: 1999), p. 144p., [8]p. of plates.
- Gardiner, L., *The Royal Oak Courts Martial* (London, 1965), p. 258.
- Glenton, R., *The Royal Oak Affair: The Saga of Admiral Collard and Bandmaster Barnacle* (London, 1991), p. 191.

- Goslan, R., *History and Counter History in Post War France: Vichy's after Life* (Nebraska USA, 2000).
- Greenhill, B., and Giffard, A., *Steam, Politics and Patronage: The Transformation of the Royal Navy 1815-54* (London: 1994), p. 256.
- Greenwood, S., *Stoker Greenwoods Navy* (Tunbridge Wells Kent, 1983), p. 186.
- Griffiths, D., *Steam at Sea: Two Centuries of Steam-Powered Ships* (London, 1997), p. 241.
- Hallam, R., and Beynon, M., *Scrimour's Small Scribbling Diary 1914-1916: The Truly Astonishing War Time Diary and Letters of an Edwardian Gentleman, Naval Officer, Boy and Son* (London, 2008), p. 304.
- Hampshire, A. C., *Just an Old Navy Custom* (London, 1979).
- Kedward, H. R., *In Search of the Maquis: Rural Resistance in Southern France 1942-44* (Oxford, 1993).
- Kemp, P., *The British Sailor: A Social History of the Lower Deck* (London, 1970), p. 241.
- Knock, S., *Clear Lower Deck*. 2nd ed (London, 1932).
- Lambert, N. A., *The Submarine Service, 1900-1918*, Publications of the Navy Records Society Vol. 142 (Aldershot, 2001), p. xliv, 397 p.
- Lavery, B., *Able Seamen: The Lower Deck of the Royal Navy 1850-1939* (London: 2011), p. 352.
- Le Bailly, L., *The Man around the Engine* (Emsworth, Hampshire, 1990), p. 186.
- Lewis, M., *The Navy in Transition: A Social History 1814-1864* (London, 1965), p. 287.
- Lipscomb, F. W., *The British Submarine*. 2nd, ed (Greenwich, 1975), p. 284.
- Mackay, R., *A Precarious Existence: British Submariners in World War One* (Penzance, 2003), p. 138.
- Masie, R. K., *Dreadnought: Britain, Germany and the Coming of the Great War* (London, 1992), p. 1007.
- McKee, C., *Sober Men and True: Sailor Lives in the Royal Navy 1900-1945* (London, 2002).

McKibbin, R., *Classes and Cultures: England 1918-1951*, (Oxford, 1998), p. 562.

Nash, N. S., *K Boat Catastrophe: Eight Ships and Five Collisions, the Full Story of the 'Battle' of the Isle of May* (Barnsley, 2009), p. 148.

Neave, D., *The Friendly Societies in Great Britain, in Social Security Mutualism: The Comparative History of Mutual Benefit Societies*. ed. van der Linden, M. (New York, 1996).

Parker, J., *The Silent Service: The inside Story of the Royal Navy's Submarine Heroes* (London, 2001), p. viii, 294 p., [16] p. of plates.

Penn, G., *Up Funnel, Down Screw: The Story of the Naval Engineer* (London, 1955), p. 184.

Price, R., *An Imperial War and the British Working Class: Working Class Attitudes and Reactions to the Boer War 1899-1902*, (London, 1972), p. 279.

Ricoeur, P., *Memory, History, Forgetting*, trans. Blamey, K. and Pellauer, D. (Chicago, 2006), p. 642.

Rippon, P. M., *The Evolution of Engineering in the Royal Navy*. 2 vols. Vol. 1 (Tunbridge Wells, 1988), p. 304.

Rüger, J., *The Great Naval Game: Britain and Germany in the Age of Empire*, (Cambridge, 2007), p. 337.

Searle, G.R., *The Quest for National Efficiency : A Study in British Politics and Political Thought, 1899-1914*, (London, 1990).

Sinclair, U., *The Jungle* (Chicago, 1906).

Smith, E. C., *A Short History of Naval and Marine Engineering* (Cambridge, 1937), p. 376.

Stone, W., *Hero of the Fleet: Two World Wars, One Extraordinary Life-the Memoirs of Centenarian William Stone* (Edinburgh, 2009), p. 256.

Taylor, B., *The Battlecruiser H.M.S. Hood: An Illustrated Biography 1916-1941* (London, 2004), p. 256.

The Fleet Annual & Naval Year Book. ed. Yexley, L. (London, 1908).

_____ (London, 1909).

_____ (London, 1912).

_____ (London, 1913).

The History of H.M.S. Drake, (Plymouth, 1973).

Thompson, E. P., *The Making of the English Working Class*. 4th ed (London, 1991), p. 958.

Thompson, J., *The Imperial War Museum Book of the War at Sea 1914-1918: The Face of Battle Revealed in the Words of the Men Who Fought* (London, 2005), p. 466.

Thompson, P., *The Voice of the Past: Oral History* 3rd ed (Oxford, 2000), p. 368.

Tosh, J., *The Pursuit of History: Aims, Methods and New Directions in the Study of History* (London, 2002).

Tosh, J., and Lang, S., *The Pursuit of History*. 4th ed (Harlow, U.K., 2006).

Trevelyan, G. M., *English Social History* (London, 1944).

Wigby, F., *Stoker Royal Navy* (London: 1967), p. 202.

Wincott, L., *Invergordon Mutineer* (London: 1974), p. 183.

Winton, J., *The Submariners: Life in British Submarines 1901-1999: An Anthology of Personal Experience* (London: 1999), p. xiv, 316p., [16] p. of plates.

Vincent, H., *A Stoker's Log* (London: 1929).

Yexley, L., *The Inner Life of the Navy* (London, 1908).

Yexley, L., ed. 'American Navy Victualling,' *The Fleet Annual and Naval Year Book 1908*, (London, 1908).

Young, F., *With the Battle Cruisers*. Facsimile Reprint 2002 ed (Edinburgh, 1921).

Articles in Books

Pursey, H., *From Petitions to Reviews: The Presentation of Lower-Deck Grievance*. ed. Thursfield, H. G., *Brassey's Naval Annual 1937* (London, 1937), p. 13.

Newspapers

- Appleyard, R., 'The Trouble at Portsmouth,' *The Times*, 12 November 1906.
- 'Behaving Like Madmen, Scenes Outside Portsmouth Naval Barracks During the Second Disturbance Caused By Discontented Stokers' *Daily Graphic*, 8 November 1906.
- 'British Navy Seeks Stokers with Brains,' *The New York Times*, August 24 1929.
- 'Canteens and Victualling,' *The Fleet*, March 1908, 74-5.
- 'Correspondence: Stokers,' *The Fleet* 3, no. 21 (1907).
- C.P.O., 'Deck Cloths,' *The Naval and Military Record and Royal Dockyard Gazette*, 27 September 1911.
- Cross, R., 'Tommy Atkins Married,' *The Navy and Army Illustrated* (1896), 131-4.
- Fisher, J. A., 'Lord Fisher on the Navy: Oilers or Coaling Stations,' *The Times* 1919.
- 'Foreign Naval Notes,' *The New York Times*, 18 January 1891.
- 'Friendly Societies Act 1896: Devonport Royal Naval United Stokers' Sick Benefit and Burial Society, Advertisement of Dissolution by Instrument,' *The London Gazette*, 10 October 1916.
- 'Heroism in the Stoke Hold,' *The Naval and Military Record and Royal Dockyard Gazette*, 26 July 1911, 472.
- 'Mechanician Chief & Stoker Petty Officer's Benefit Association Minutes of Monthly Meeting,' *The Fleet*, January 1914, 29.
- 'Model Barracks,' *The Naval and Military Record and Royal Dockyard Gazette*, 25 January 1911, 59.
- 'Regulations for Examination and Pay of Stokers,' *The Fleet* (1912), 699-700.
- 'Rioting at Portsmouth,' *The Times*, 6 November 1906, 1.
- 'Rioting at Portsmouth Naval Barracks,' *The Times*, 7 November 1906, 11.
- 'R.N. Mechanicians, Chief Stokers, Stoker Petty Officers, Leading Stokers and Stokers Class Appeal.,' *The Fleet*, March 1914.
- 'Soldiers Messing,' *The Naval and Military Record and Royal Dockyard Gazette*, 23 August 1911, 533.

'Stoker's Work in Battle: Toiling in Heat, He Learned Fight Progress by Bulletins,' *The New York Times*, June 12 1916.

'Sunday in the Navy,' *The Fleet*, October 1911, 252-3.

'Sunday in the Navy: The Fetish of Inspections and Its Results,' *The Naval and Military Record and Royal Dockyard Gazette*, September 1911.

Sympathiser, A., 'Stoker Ratings V. Engine Room Artificers: Their Claims and Counter Claims,' *The Fleet* (1912), 654-5.

'The Disturbances at Portsmouth-Admiralty Minute,' *The Times*, (London, 1906).

'The Engine Room Artificers Latest: Another Attack on the Stokers,' *The Fleet*, February 1913, 40-1.

'The Naval Manoeuvres: The Cruiser Work,' *The Times*, 21 August 1903.

'The Trouble at Portsmouth,' *The Army and Navy Gazette* (1906), 1068-9.

Yexley, L., 'Parliament and Canteens,' *The Bluejacket and Coastguard Gazette*, May 1903.

'The Navy and Its Personnel,' *The Bluejacket and Coastguard Gazette*, March 1903, 103.

'To Launch Russian Cruiser,' in *The New York Times* (New York, 1899).

Journal Articles

Akiyama, Y., 'Trained Cooks and Healthy Boys: Reforming the Mess in the Royal Navy before the First World War,' *The Mariner's Mirror* 94, no. 4 (2008), 420-31.

Alderson, P. F. S. C., 'The Incidence of Tuberculosis in the Royal Navy,' *Journal of the Royal Naval Medical Service* XIII (1927), 9.

Beresford, B. W., 'Stoker Royal Navy, the Lowest of the Low,' *Sea Breezes* 67, no. 575 (1993), 889-95.

Brown, D., 'The Introduction of Oil Fuel,' *Journal of Naval Engineering* 37, no. 2 (1997), 4.

Conley, M. A., 'You Don't Make a Torpedo Gunner out of a Drunkard: Agnes Weston, Temperance and the British Navy,' *Northern Mariner* 9, no. 1 (1999), 1-22.

- Correspondent, P., 'Working Conditions of Ship's Stokers,' *The British Medical Journal* (1936), 672-75.
- Dahl, E. J., 'Naval Innovation: From Coal to Oil,' *Joint Force Quarterly* 22, no. Winter (2000), 6.
- De Mericourt, H., 'Modern Naval Hygiene,' *The British Medical Journal* 2, no. 777 (1875), 2.
- Dupper, A., 'Phillipp Frick a Stoker in the Imperial Russian Navy,' *American Historical Society of Germans from Russia* 5, no. 4 (1982), 58.
- Fardell, H. M., 'The "K" Submarines,' *The Naval Review* VII, No 2 (1919), 234-36.
- 'A Few Lectures on Naval Discipline,' *The Naval Review* 7, no. 4 (1919), 467-70.
- Forbes Guild, W. J., 'Submarine Living,' *Journal Naval Engineering* 14, no. 3 (1961), 6.
- Fouracre, S. F., 'A Medical Man in Mesopotamia : Some Clinical Experiences in the Tropics and Their Application to Temperate Climates,' *Supplement to the British Medical Journal* 1, no. 3972 (1937).
- H.B.C., 'Naval Mutiny in 1914,' *The Naval Review* LX, no. 3 (1972), 5.
- Hill, J. R., 'Accelerator and Brake: The Impact of Technology on Naval Operations 1855-1905,' *Journal for Maritime Research* (1999), 1-21.
- 'In Defence of Mechanical Training,' *The Naval Review* 20, no. 4 (1932), 693-6.
- J.H.H., 'Clear Lower Deck,' *The Naval Review* 20, no. 2 (1932).
- Jack, I., 'Cocoa, Sir?,' *London Review of Books* 25, no. 1.2 (2003), 18-22.
- Kingcome, J., 'A Century of Naval Engineering,' *Journal of Naval Engineering* 43, no. 2 (2007), 329-50.
- Langmaid, J., 'A Proposed Method of Training Naval Stokers, and Otherwise Increasing the Efficiency of the Steam Branch Personnel,' *Royal United Service Institution* 35, no. 156 (1891), 21.
- Looks, O. E. C., 'The Engine Room Staff of S.M.S. Seydlitz in the Battle of Skagerrack ' *The Naval Review* 10, no. 2 (1922), 307-17.
- 'Para Bellum,' *The Naval Review* 30, no. 2 (1942), 117-9.
- Nico, 'Warrant Stokers,' *The Naval Review* 33, no. 4 (1945), 306-07.

- Poseidon, 'In Bondage to Oil,' *The Naval Review* 16, no. 4 (1928), 769-75.
- 'Re-Inventing the Wheel? Precis of Reports from Commissioners, Inspectors & Others 1877: Navy Engineers,' *Journal of Naval Engineering* 36, no. 1 (1995), 125-39.
- Reynolds, S., 'Navy Discontents,' *English Review* 9 (1911), 11.
- Romans, E., 'The Internal Economy of the Royal Navy in the Twentieth Century,' *Mariner's Mirror* 94, no. 1 (2008), 79-88.
- 'Russian Navy: The Armament and Equipment of the Fleet,' in *The Russo-Japanese War Research Society*, 2002).
- S.D.S., 'The Fuel of the Future?,' *The Naval Review* 23, no. 2 (1935), 333-40.
- Skelton, R. W., 'Coal Versus Oil for the Navy,' *The Royal United Services Institution* 79, no. 514 (1934), 18.
- Somerville, J. F., 'The Lower Deck, Past and Present,' *The Royal United Services Institute*, 81, no. 522 (1936), 303-14.
- 'Sunday in the Navy,' *The Naval Review* 9, no. 4 (1921), 619-21.
- 'Sunday in the Navy,' *The Naval Review* 10, no. 1 (1922), 153-5.
- Suzuki, S. S.-G., Imperial Japanese Navy, 'Notes on Experiences During the Russo-Japanese Naval War 1904-5,' *British Medical Journal* 2, no. 2339 (1905), 5.
- Vale, B., 'The Conquest of Scurvy in the Royal Navy 1793-1800: A Challenge to Current Orthodoxy,' *The Society of Nautical Research* 94, no. 2 (2008), 160-75.
- Walton, O. C., 'Officers or Engineers? The Integration and Status of Engineers in the Royal Navy, 1847-60,' *Historical Research* 77, no. 196 (2004), 178-201.
- 'Welfare Committee Representation,' *The Naval Review* 9 no. 1 (1921), 168-9.

Museum Article

Historic Dockyard Chatham

Excerpt from Stoker First Class, Crowhurst, H.M.S. *Leviathan*, Chatham: (The Historic Dockyard Chatham, 2011).

Unpublished Theses

Kennerley, A., '*Stoking the Boilers: Firemen and Trimmers in British Merchant Ships, 1850-1950*,' (University of Plymouth, 1996).

Jones, M, '*The Making of the Royal Navy Officer Corps*', (University of Exeter, 1999).

Electronic Sources

Cunha, J. P., *Heat Exhaustion and Heat Stroke* WebMD, 2012 [cited 2 May 2012]. Cited in http://www.emedicinehealth.com/heat_exhaustion_and_heat_stroke/article_em.htm

Defence, M. O., *The Stoker* Royal Navy.mod.uk, 2009 [cited 18 July 2010]. Cited in <http://www.royalNavy.mod.uk/surface-fleet/aircraft-carriers/hms-ark-royal/the-stoker>.

First World War-Royal New Zealand Navy, History Group of the New Zealand Ministry for Culture and Heritage, 2011 [cited 20 April 2012]. Cited in <http://www.nzhistory.net.nz/war/royal-new-zealand-Navy/first-world-war>.

Hansard, *Stokers (Chest Diseases)*, 1936 [cited 28 October 2011]. Cited in http://gateway.proquest.com/openurl?url_ver=Z39.88-2004&res_dat=xri:hccp&rft_dat=xri:hccp:rec:CDS5CV0309P0-0012

H. O. *Prisons over Two Centuries* Home Office, 1982 [cited 20 May 2012]. Cited in <http://www.nationarchives.gov.uk/erorecords/ho/421/2/prisons/prishist.htm>.

Houterman, H., and Koppes, J., *World War Two Unit Histories and Officers: British Army Officers 1939-1945*, 2012 [cited 15 April 2012]. Cited in http://www.unithistories.com/officers/Army_officers_CO2.htm.

Lamb, D., *1918-1930 Mutiny and Resistance in the Royal Navy* [web site]. libcom.org, 2005 [cited 8 January 2012]. Cited in <http://libcom.org/library/mutinies-dave-lamb-solidarity>

Lord Charles Beresford Tribute to the Black Squad Lloyds Weekly News, 1912 [cited 28 May 2012]. Cited in <http://www.encyclopedia-titanica.org/black-gang-tribute.html>.

Nova-online, *Shackleton's Voyage of Endurance*, 2002 [cited 15 August 2012]. Cited in <http://www.pbs.org/wgbh/nova/shackleton/1914/team.html>.

Royal Commission on the Ancient and Historical Monuments of Scotland, *Inchindown; Invergordon Oil Fuel Storage Tanks*, 2011 [cited 27 February 2012]. Cited in <http://canmore.rcahms.gov.uk/en/event/588220/>.

Stöppler, M. C., MD. , *Electrolytes*, 2009 [cited 4 August 2009]. Cited in <http://www.medicinenet.com/electrolytes/article.htm>.

The H.M.S. *Barham* Association, 2008 [cited 31 May 2010]. Cited in <http://www.hmsbarham.com/ship/hmsduchesscollision.php>.

Wet-Bulb Thermometer, 2009 [cited 11 August 2009]. Cited in <http://www.brittanica.com/EBchecked/topic/688997/wet-bulb-thermometer>.

What Is C.O.P.D. US Department of Health and Human Services, 2011 [cited 28 October 2011]. Cited in <http://www.nhlbi.nih.gov/health/health-topics/copd/>.

Private Sources

Oral Testimony

Groves, F. J., *Audio-Cd of Memoirs*, Sussex, 2005.