

Coal, Steam and Ships

Crosbie Smith explores the trials and tribulations of first-generation Victorian mail steamship lines, their passengers, proprietors and the public. Eyewitness accounts show in rich detail how these enterprises engineered their ships, constructed empire-wide systems of steam navigation and won or lost public confidence in the process. Controlling recalcitrant elements within and around steamship systems, however, presented constant challenges to company managers as they attempted to build trust and confidence. Managers thus wrestled to control shipbuilding and marine engine making, coal consumption, quality and supply, shipboard discipline, religious readings, relations with the Admiralty and government, anxious proprietors and the media – especially following a disaster or accident. Emphasizing interconnections between maritime history, the history of engineering and Victorian culture, Smith's innovative history of early ocean steamships reveals the fraught uncertainties of Victorian life on the seas.

Crosbie Smith was Professor of History of Science at the University of Kent until he retired in 2014 to concentrate on research. Two of his books have won the History of Science Society's Pfizer Award, *Science of Energy* and *Energy and Empire*, which he co-wrote with Norton Wise.

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Coal, Steam and Ships

*Engineering, Enterprise and Empire on the
Nineteenth-Century Seas*

Crosbie Smith

University of Kent



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For
The Crew

The sea, with such a storm as his bare head
In hell-black night endured, would have buoyed up
And quenched the stelléd fires.

The Tragedy of King Lear (Act 3 Scene 7)

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Because the ‘Ocean Steamship’ project has been so fundamental to the writing of this book, I am exceptionally grateful to Ian Higginson, Phil Wolstenholme, Anne Scott, Trish Hatton and Don Leggett, all of whom served on the Kent team at various times and in different ways. During early visits to Liverpool’s rich archives, for example, Ian and Phil mined a number of remarkable archival gems, including Alfred Holt’s personal diary and a sermon by his Unitarian minister on ‘The Doctrine of Waste’. Both Anne and Trish later worked tirelessly on tracing and extending the maritime networks of ship-owners and shipbuilders while also providing many of the historical insights around which the project flourished. Co-applicants Ben Marsden and Will Ashworth supplied invaluable advice and support. Ben played the major role in developing the methodological grounding for the programme, culminating in his and my *Engineering Empires* (Palgrave, 2005), while Will guided the team unerringly in relation to its engagement with Merseyside historical contexts. Don’s Greenwich-based researches in the unpublished papers of William Schaw Lindsay opened up fresh perspectives into ocean steamship history in the period, not least because Lindsay knew personally many of the early ship-owners, their families and their communities.

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also kindly undertook to read critically a draft of this book. Oliver's less glamorous subject, north-east steam tramp shipping, showed how modest Methodist trampship-owners, the Runcimans, could rise to high socio-political status in twentieth-century national life. Both Don and Oliver played significant roles in shaping my History Special Subject at Kent. Over three sessions, 'The Ocean Liner' proved that not all undergraduate history needed to replicate and extend well-trodden school history. Much of the content of this book, moreover, was forged and re-forged in the intense seminar discussions. I am grateful to many of the protagonists for their contributions, and especially to Edward Gillin and Stephen Courtney whose dialectic has helped a synthesis emerge in the following chapters. Tim Marshall's insights were also invaluable. Specific acknowledgements will be found in the footnotes.

An invitation to deliver the eighteenth Rausing Lecture in the History of Science (hosted by the Department of History and Philosophy of Science) at the University of Cambridge came as a wonderful opportunity to present to a wider audience several of the methodological themes now integrated in this book. My special thanks go to Simon Schaffer whose insights and comments before and after the lecture were, as ever, inspiring, multifaceted and challenging. I chose the lecture title 'Coal, Steam and Ships' to mirror Turner's famous painting 'Rain, Steam and Speed: Great Western Railway'. Turner's painting can be viewed both as a depiction of the violent destruction of the English landscape *and* as a representation of a new icon of human progress, but it also subtly merges the natural and the industrial: the rain that appears through the mist is also the provider of the water that becomes the steam which generates the speed that epitomizes a self-styled 'progressive age'. It is, in short, both a representation and a reminder of the *interconnectedness* of natural and human-built systems of power.¹

The lecture, however, also contained the deliberately provocative sub-title 'Economic Historians *versus* Historians of Technology?' I posed the question primarily in order to highlight, through steamship case studies, the danger of uncritically adopting, as self-evident, patterns of inevitable 'improvement' and universal diffusion. Such interpretations often presuppose anachronistic views of technology in which, for example, 'more efficient' steam engines have a real existence at some time in the future. Above all, to display overconfidence in numerical data, and thereby to reduce other historical perspectives to merely decorative roles, is to fail to learn the lessons that a mature cultural history of technology teaches its practitioners.

My thanks go to other members of the audience who, formally and informally, offered comments and criticisms, especially Jim Secord, Hasok Chang, Liba Taub, Jim Bennett, Peter Bowler, Charlotte Sleight, Edward Gillin and

¹ See Marsden and Smith (2005: 157–8).

the late John Forrester. With the support of Jim Secord, Simon Schaffer and Hasok Chang, I applied for and secured a Visiting Fellowship at Clare Hall (2013–14) which gave me a unique space (as well as time) in which to work up the book draft. I also owe much to Clare Hall's President, David Ibbetson, and all the members of the College community, for an unforgettable seven months of stimulating discussion and fellowship.

As someone brought up on the shores of Ireland's County Down, I have come to appreciate a very different kind of fellowship – what Joseph Conrad aptly termed 'the fellowship of the craft'. Introduced to small boats at an early age, I came to appreciate the shared values and experiences of seafarers of all ages. Conversations with them, I believe, have immensely deepened and enriched my readings of those nineteenth-century maritime texts that form the backbone of this study. In particular, I thank Captain William McCrea (retired coaster skipper and former master of the MV *Saint Aidan*), Captain Jim Fullerton (former senior master of the Belfast to Liverpool ferries *Saint Colum* and *Ulster Prince*), Adrian Adair (skipper of the fishing vessel *Aurora*), Valerie and Roderick Monson (of the ketch *Valfreyia*), Michael Griffiths (formerly of the ketch *Maplin Bird*), Chris Thompson (fishing vessel *Dawnlight*), Josh Porter (yacht *KMIT* and fishing vessel *Rosebank*), Emma Morgan (who served as *Rosebank* mate) and Matt Thompson (naval architect, musician and mariner).

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Last but far from least, I thank Lucy Rhymer, Ian McIver, the editorial and production staff at Cambridge University Press (especially Abirami Ulaganathan), the Press's two anonymous readers and the series editors for Science in History (Simon Schaffer and Jim Secord) for their patience, dedicated hard work and enthusiastic commitment to the publication of this book. I am also much indebted to the excellent work of the Press's copy editor Diane Chandler.

In the opening months of 1960, the author's father introduced his ten-year-old son to the hitherto mysterious world of Belfast shipbuilders Harland & Wolff, whose industrial empire also extended to sites in Liverpool, Glasgow,

Southampton and London. In the Thompson graving dock (now promoted to tourists as the ‘Titanic Dock’) sat P&O’s liner *Chusan* (1950), a stalwart of the Company’s long-established mail and passenger services to India, Hong Kong and Japan. Fitting out at the nearby Thompson Wharf (no longer extant) lay Royal Mail Line’s new passenger-cargo liner *Aragon*, second of a trio of large refrigerated vessels for its South Atlantic service to Rio de Janeiro and Buenos Aires. In the Musgrave Channel (now the site of the Building Dock), the largest crude-oil tanker yet constructed in the yards, *William Wheelwright*, bore the initials ‘PSNC’ on the rounded stem-head. On the slipways was P&O’s *Canberra*, promoted as the largest British passenger liner since the Clyde-built *Queen Elizabeth* (1940) and designed to revolutionize travel to Australia. So too was the cargo-liner *Port Alfred*, six months away from launching for Cunard Steamship Company’s subsidiary known as the Commonwealth & Dominion or Port Line to the Antipodes. It was one of the last times that ships of P&O, Cunard, Royal Mail and Pacific Steam could be seen together under construction in one place. Now, over half a century later, this book offers an account of the founding years of those same mail steamship lines that came to reify Britain’s maritime empire in global space.

Abbreviations

| | |
|-------|---|
| ACKC | A. C. Kirk Collection |
| AGM | Annual General Meeting |
| AHD | Alfred Holt Diary |
| AHP | Alfred Holt Papers |
| AR | <i>Amazon</i> Report |
| ASNC | Aberdeen Steam Navigation Company |
| BAAS | British Association for the Advancement of Science |
| BoT | Board of Trade |
| CDSP | City of Dublin Steam Packet Company |
| CP | Cunard Papers |
| DM | Daily Minutes |
| EIC | East India Co. |
| EISNC | East India Steam Navigation Company |
| fp | facing page |
| FP | Forbes Papers |
| FRS | Fellow of the Royal Society of London |
| GHD | George Holt Diary |
| GM | General Meeting |
| GMT | Glasgow Museum of Transport (now Riverside Museum) |
| GPS | Glasgow Philosophical Society |
| GSNC | General Steam Navigation Company |
| GWR | Great Western Railway |
| GWSS | Great Western Steam Ship Company |
| GUA | Glasgow University Archives |
| HAPAG | Hamburg Amerikanische Packetfahrt Aktien Gesellschaft |
| HCO | House of Commons Order |
| HM | Her Majesty's |
| HMS | Her Majesty's Ship |
| hp | horsepower |
| HSBC | Hong Kong and Shanghai Banking Corporation |
| ICE | Institution of Civil Engineers |
| IES | Institution of Engineers in Scotland |

| | |
|------------|---|
| IESS | Institution of Engineers and Shipbuilders in Scotland |
| ihp | indicated horsepower |
| <i>ILN</i> | <i>Illustrated London News</i> |
| IN | Indian Navy (EIC) |
| INA | [Royal] Institution of Naval Architects |
| KC | Kelvin (William Thomson) Collection |
| lb | pounds weight |
| LFP | Laird Family Papers |
| L&MR | Liverpool and Manchester Railway |
| LNRS | Liverpool Nautical Research Society |
| LRO | Liverpool Record Office |
| LUL | Sidney Jones Library, University of Liverpool |
| MD | Managing Director |
| <i>MM</i> | <i>Mechanics Magazine</i> |
| MMM | Merseyside Maritime Museum |
| <i>NAR</i> | <i>North American Review</i> |
| NC | Napier Collection GMT |
| NDL | Norddeutscher Lloyd |
| <i>NM</i> | <i>Nautical Magazine</i> |
| NMM | National Maritime Museum |
| NP | Napier Papers GUA |
| NSA | Nova Scotia Archives |
| NYC | Northern Yacht Club |
| OA | Ocean [Steamship Company] Archives |
| ODNB | Oxford Dictionary of National Biography |
| OSS | Ocean Steamship Company |
| PO | Post Office |
| P&O | Peninsular and Oriental Steam Navigation Company |
| PP | George Peacock Papers |
| psi | pounds per square inch (steam pressure) |
| PSNC | Pacific Steam Navigation Company |
| <i>RM</i> | <i>The Railway Magazine</i> |
| RMSP | Royal Mail Steam Packet Company |
| RN | Royal Navy |
| rpm | revolutions per minute |
| RSE | Royal Society of Edinburgh |
| RYS | Royal Yacht Squadron |
| SC | Select Committee of the House of Commons |
| <i>SMG</i> | <i>Shipping and Mercantile Gazette</i> |
| SP | Scotts of Greenock Papers |
| SPCK | Society for Promoting Christian Knowledge |

List of Abbreviations

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| | |
|--------------|--|
| SS | Steamship |
| <i>TIES</i> | <i>Transactions of the Institution of Engineers in Scotland</i> |
| <i>TIESS</i> | <i>Transactions of the Institution of Engineers and Shipbuilders in Scotland</i> |
| TWA | Tyne & Wear Archives, Newcastle |
| ULC | University Library Cambridge |
| ULG | University Library Glasgow |
| WSL | William Schaw Lindsay papers |