

## BOOK REVIEWS

ALLINGTON, P.; GREENHILL, B. *The First Atlantic Liners*. Conway Maritime Press, London, 1987. 176 pages, 79 photographs, 68 line drawings. ISBN 085177668X. Price £35.

(reviewed by EUR ING David K. BROWN, RCNC)

This interesting book considers the new problems of operating commercial ships with both sail and steam, paddle propulsion. These problems include those of seamanship as well as those of economics. There was a complete spectrum from the steamship with sails for occasional use to the sailing ship with auxiliary power.

The use of power changed the direction of the relative wind on the sails which had to be allowed for. There was a corresponding point which is not brought out in that sail assistance would increase top speed and require higher rpm. In turn, this needed an engine capable of developing full power over a wide range of rotary speed, something which the slow speed reciprocating engine was good at. In the early days it was unusual for warships to use both sail and steam as, on passage, there was usually no need to arrive at a particular time. The lower paddle boards would be removed and the ship would operate under sail, saving the cost of coal. In wartime, time of arrival became important and by the end of the Crimean War the RN operated mainly under steam.

The authors use a considerable number of contemporary quotations, often from little known sources. While this is most interesting and while it is important to understand the beliefs of the day, it should have been made clear where these views were wrong, as in SCOTT RUSSELL's waveline theory. The illustrations are clear and well chosen. Though the book is about merchant ships, no one interested in the early steamship should fail to study it.

BROWN, D.K. *Warrior to Dreadnought—Warship development 1860–1905*. Chatham Publishing 1997. 224 pages, 157 photographs, 45 illustrations, 9 Appendices. ISBN 1 86176 022 1. Price £35.  
(reviewed by J.F.P. EDDISON, RCNC)

The second half of the nineteenth century was a period of rapid technical change, in which the Royal Navy played a leading part. In this minutely researched and clearly written addition to his previous works on naval design development, the author charts the progress of the major changes. Drawing on extensive references (unfortunately not listed separately), he demonstrates the technological innovation and design evolution from *Warrior*, still recognizably a sailing warship, to *Dreadnought*, now recognizable as setting the style for *Vanguard* another 50 years later on.

The whole work is supported by copious footnotes, and by explanations and discussions of the sometimes obscure technical terms. A wealth of fascinating snippets of information illustrate the text. (How did Spain, for example, feel about a rock off Vigo being used for gunnery practice by the Fleet?) Contemporary photographs, of surprisingly good quality, mainly from the author's collection, show the main features described, and are backed up by sketches of technical points. Appendices provide more detailed financial and technical information, accessible to both the general reader and the specialist. They demonstrate the matching advances in analytical capability which turned ship design from something of a black art into a science, albeit one limited by the lack of computers to solve the complex equations involved.

The author sets the scene with a short introduction, summarizing the political, financial and technological changes through the period. He demonstrates the uncertainty of the operational requirement (not that the concept was recognized) and even of the potential enemy, as well as the generally limited funds available. Only towards the end of the period did spending increase significantly, up from £2M to £9M per year on new construction, as speed, size and fighting capability increased, though the question is left tantalisingly open as to whether new funds or the emerging requirement set the pace.

Each of the major developments is described and illustrated by reference to the various ships in which they were tried out. In the absence of a specific threat, there was scope for what were effectively multiple prototypes, so that what was a truly evolutionary progression was able to occur over a relatively short period. The pros and cons of each design were evaluated, the key advances in guns and armour took place, and the next ship was modified accordingly. Thus each main chapter is presented as a series of short essays

on what the author considers the significant points, individually making for easy reading but perhaps obscuring the overall theme. The short section on the development of coastal fortifications demonstrates a Defence Systems-wide view (in modern jargon), as well as lessons on inadequate thought for running costs at the design stage and the ability of civil works comfortably to exceed their budget, but it does sit a little oddly in a book on warship design.

The discussion of each theme is enlivened by brief biographies of the key players, and by accounts of the thinking of the Naval Staff and the Design Department (all 40 of them), which shed light on the pressures involved and the compromises reached. So each chapter contains only limited technical information, for which the reader is referred to other books, the author concentrating on the historical aspects and on the main design arguments and decisions. Clearly, political interference, unscientific opinions and financial stringency were as familiar to our Victorian predecessors as they are today, with similar consequences. The mismatch between what was desired, and indeed what was a sensible design, and what could be afforded is a common theme. The author's summary of the loss of HMS *Captain* is an object lesson of this fact. While not (your reviewer believes) adding anything material to the story, it is a clear and coherent account of events and responsibilities.

This book does not aim to be a detailed technical appraisal, although there is no shortage of technical comment. Rather it takes the reader through the interplay of high level operational demands with technical and financial constraints. The style and sheer volume of information can be somewhat heavy going at times, but the book provides a comprehensive view of the development of the Royal Navy at a crucial period in its evolution:

- Wood gave way to steel
- Muzzle loaders to breech loaders
- Broadships to turrets
- Sail to steam
- Rule of thumb to scientific analysis
- Better guns led to better armour,

all in 45 years, a tremendous achievement. Throughout, the author's enthusiasm and technical mastery are evident, in the extent of his research and presentation of the data, and his insights into design rationale.

The book closes with a description of the *Dreadnought*, the first all big gun, steam turbine powered battleship, the climax of the previous 40 years' evolution. Like *Warrior*, she represented the bringing together of the best available technology and design practice, to produce a step change in capability. This book is an invaluable tour through the exciting developments that made her construction possible.

GREGGER, Rene. *Battleships of the World*. Greenhill Books. 258 pages, 192 photographs, about 100 drawings. ISBN 1 85367 275 0. Price £29.95 (reviewed by EUR ING David K. BROWN, RCNC)

In a single book, not very large, the author attempts to describe all the world's battleships of this century, a topic which would normally run over several thick volumes. By and large, he has been successful and this is a useful survey for those who do not wish to delve too deep.

The book opens with an excellent 24 page introduction outlining the development of the battleship from the mid 19th century to the end. There are plenty of tables comparing the strengths of the navies. Each of the major powers is considered in turn, starting with Germany. This begins with 11 pages on the

background to German battleships up to the end of World War I. The individual classes of battleships and battlecruisers are described with one page per class containing an excellent plan and elevation and one or two photos as well as the text. The photos are very good throughout but the aerial pictures of World War I German ships are outstanding. I would disagree strongly with the author's practice of adding together the thickness of all decks and calling the sum 'deck' armour. This is not the way a shell sees it. The German section continues with seven pages of build up to the second war and describes the later ships in similar style; a total of 31 pages.

Other major powers are treated in similar style—the RN gets 55 pages, the USN 40. Finally, there are 11 pages on the battleships of minor powers.

The book was originally published in German and has been admirably translated by Geoffrey BROOKS. This leads to a different viewpoint from that of many British writers which is often welcome. Sometimes it goes too far; it is incorrect to say (pp.100) that *Marlborough* returned from Jutland under tow, she arrived alongside under her own power. Similarly, it is incorrect to say that *Warspite* was on the point of foundering. The author is precisely correct in saying that *Seydlitz* reached the German coast under her own power but she then rested on the bottom until pumped out. 'Best' is a word to avoid and after examination of the wreck few would apply it to *Bismarck*; a repeat *Baden* with bigger engines (pp.59). Though the naval limitation treaties are outlined, it is not brought out that the Axis powers grossly broke the limits which they had agreed to.

Overall, the book is a useful summary of the world's battleship building with many excellent and little known illustrations.

GRIFFITHS, Denis. *Steam at Sea*. Conway Maritime Press, London 1997. 252 pages, 315 illustrations. ISBN 0 85177 66 3. Price £30. (reviewed by EUR ING DAVID K. BROWN, RCNC).

Good books on the history of marine engineering are rare and this fine work by an experienced writer who is, himself, a marine engineer is welcome indeed. Dr GRIFFITHS covers both merchant ships and warships in separate chapters of his book. The treatment is broadly chronological but subdivided into engines—paddle, screw, compound, triple expansion and turbine—boilers in two chapters and auxiliaries. Nuclear steam plants are included. The coverage of auxiliary machinery and of details such as tube fastenings is particularly interesting. The importance of apparently minor features such as piston rings and the corrugated furnace is well brought out. I loved the account of a trial of hydraulic steering in *ACHILLES* in 1869. The motor was powered by sea pressure and discharged into the bilges from which the sea was pumped out. It was not repeated! The gradual shift from coal to oil is described.

One chapter is devoted to the engineer at sea with discipline as a major problem. Naval engineers had no direct authority and had to bring their men before a seaman officer for discipline. Merchant navy engineers had an even rougher time and might get involved in fisticuffs. Particularly in the merchant navy, pay was quite good and there were plenty of young men willing to take up the challenge. Gradually, engineers attained professional authority, helped by the formation of the Institute of Marine Engineers.

The book is aimed at the general reader but the author uses his skill as a teacher in putting over quite difficult points of engineering in a clear and simple fashion. I like his description of the parallel motion linkages in some early engines and also his account of the difference between impulse and reaction turbines.

The numerous illustrations are an outstanding feature of the book; many are reproductions of contemporary line drawings and are clearly reproduced and

are directly relevant to the text. The author makes clear his view that British shipowners reluctance to shift from steam to diesel in the thirties was an important factor in the decline of British merchant shipping.

I would put a slightly different emphasis on the Admiralty's encouragement of innovation in marine engineering particularly concerning the screw propeller and, later, the PARSONS steam turbine. The battleship *Victoria* had a very early turbine in 1885 driving a dynamo for lighting and *Turbinia's* appearance at the 1897 review was no surprise to the Admiralty since both the E-in-C and DNC had been out on earlier trials. SENNETT's work on boiler safety ca 1888 which led to warship boilers being considerably lighter than those of merchant ships with, in all probability, greater safety was another example of Admiralty initiative. It is also of interest that, though there was some prejudice against engineer officers at lower level, there does not seem to be any instance of the Board failing to take the professional advice of their outstanding Engineers-in-Chief.

This book should be on every engineers' shelf.

GROVE, Eric (Editor). *The Battle and the Breeze. The naval reminiscences of ADMIRAL OF THE FLEET Sir Edward ASHMORE*. Sutton Publishing 1997. 224 pages, 50 photographs, ISBN 0 7509 12529 Price £25.  
(reviewed by LIEUTENANT COMMANDER J.S. SHEARS Ret'd)

I had just been selected at Manadon to become an Air Engineer when the decision to cancel CVA01 was made. So when I saw on the cover of this book:

'... much new light on many aspects of post 1945 naval policy, such as the controversy surrounding CVA01 ...'

I thought this is the book to explain all. Either I missed it, or what is said is already known, but no new light is shed for this reader. However on other programmes such as the SEA HARRIER, it is enlightening.

The book covers Sir Edward's life from birth to his retirement as Chief of Defence Staff in 1977. Born into a naval family with good family connections, he and his brother were both to become admirals, and move in circles way above us mere mortals!

During the war he was to serve in destroyers and serve in MOUNTBATTEN's squadron. There is no doubt about his views on some of the manoeuvres undertaken in that squadron i.e. close formation at 28 knots through unlit channels on the East Coast, at the time when destroyers were few on the ground! At the age of 22 he was the senior Executive Officer of HMS *Middleton*, a HUNT class destroyer building at Newcastle. Having commissioned the ship, he was to serve in her on both Russian and Malta convoys. At 23 he was to marry Elizabeth, who was to become a great strength to him during his naval career. In 1943 he chose to specialize in signals, which was to lead him to some very interesting and important appointments.

During the early days of being a communicator, as there was no specialised technical branch, the communicator had a more 'hands on' approach to the equipment he was operating. Over the years with the formation of the Weapon Engineer Officer Branch and the sophistication of weapon systems, it became obvious to Sir Edward that the best use was not being made of the talents of the senior rates in all the branches. And to cut a long story short, he was responsible for the introduction of the Principal Warfare Officers, which one feels gave him a great deal of satisfaction.

When he was the Captain of *Alert* (converted BAY class frigate and the dispatch vessel (Admiral's yacht on the Far East station), *Blackpool* Leader of the 6th Frigate Squadron and a Commander British Forces Caribbean Area, it

was at a time when there was a navy. The number of visits, calls made etc., makes one wonder when they had time to do any work! Names abound throughout the book and the best advice is not to try and keep track of who is who, unless you are an historian. As for the number of visits etc., these are surpassed when C in C and First Sea Lord. Obviously there are no restrictions when that high, but at that time I do remember Flight Commanders at Portland having to justify their claims for visiting their ships at their home port.

An interesting book, well recommended to all those who like to know how the other half live, plus a good insight into why some decisions have been made. Finally I wonder how the majority of recipients reacted when they received that half of Stilton!

LOXTON, BRUCE; COULTHARD-CLARK, Chris. *The Shame of Savo—Anatomy of a Naval Disaster*. Allen and Unwin, St Leonards NSW, 1994. 346 pages, 38 illustrations, 14 maps. ISBN 1 86373 650 6. Price £16.99.  
(reviewed by EUR ING David K BROWN RCNC)

Though this book has been available in this country for some time, it has only just been seen by the reviewer. However, it sheds new light on several topics making a brief notice worthwhile. The principal author was a midshipman in *Canberra* when she was sunk in the Solomons in 1942 and always resented the way in which that ship was condemned for being sunk so quickly by light gunfire without firing a shot in reply. After retiring from the RAN with plenty of experience in staff work he decided to re-examine the battle of Savo and the loss of *Canberra*.

The bulk of the book is an analysis of the events leading up to the battle and of the battle itself in which seven Japanese cruisers and one destroyer sank four heavy cruisers (3 USN, 1 RAN) and disabled another together with two torpedoes. The battle took place on the night 7–8 August 1942, quite early in the Pacific war, and was the first major offensive. In consequence, we see all the usual problems of early war—elderly officers, poor communications, particularly with aircraft, and lack of clarity in the planning. The main sources are USN reports which have only recently become available which condemn their own officers quite severely.

The Australian inquiry into the loss of *Canberra* decided that she was sunk by about 25 hits from 5–5.5 inch shells from a light cruiser and about 3 destroyers; the author presents a very different story. Early on the morning of 8 August *Canberra* was steaming at 12 knots in visibility which varied greatly with direction. To the NW, the direction from which the enemy approached, it was some 4,000 yards while to the NE it varied from 100 yards to 10 miles. MIKAWA's flagship, *Chokai* was approaching at 26 knots and sighted *Canberra* at 12,500 yards at 0136. Two minutes later she fired 4 torpedoes at 10,000 yards from a position fine on the bow of *Canberra*. As they were due to arrive, a seaplane was instructed to drop flares behind *Canberra*. *Chokai* opened fire with ten 8 inch followed by four other Japanese cruisers. The author suggests that they scored about 27 hits, almost all with 8 inch shells.

*Canberra* had sighted the enemy just before the flares illuminated her and accelerated rapidly to 26 knots. The guns had been loaded—some 27 seconds—but the ship was turning violently and the turrets had not found a target when all power was lost. *Chokai*'s torpedoes were seen to pass down either side—one self exploded. Fifteen other torpedoes were fired by other Japanese cruisers on the port side but all missed. The RAN inquiry found that *Canberra* was not torpedoed but the author argues convincingly that she was probably hit by two torpedoes on the starboard side accounting for the list of

7° and a total loss of power. Survivors' evidence is conflicting and, unfortunately, the inspection by BALLARD on 7 August 1992 did not see the starboard midships area. The only ship on the starboard side was the US destroyer *Bagley* which fired 4 torpedoes at about the right time. Diagrams are given which show this to be a likely solution though proof is impossible.

The book is well written and most interesting. The illustrations include some unfamiliar shots taken of the sinking ships.

MOTT, Lawrence V. *The development of the rudder; A technological tale*. Chatham Publishing, 1997. 218 pages, 97 illustrations and diagrams. Paper back ISBN 1-86176-031-0. Price £15.95.

(reviewed by D.J. CURRY.)

The early form of the rudder as used from classical times, the steering oar, is frequently misunderstood. While the development of the design and rigs of early ships might often be described, the details of the steering arrangements tend to be treated as secondary and significant aspects are misconstrued. Likewise, there is little understanding of how the role of the steering oar was taken over by the stern mounted rudder. That is the contention of L.V. MOTT, who sets out to redress the situation, with particular reference to Mediterranean shipping.

Mott defines and uses the terms Quarter Rudder (QR) and Pintle and Gudgeon rudder (PG) to avoid the ambiguities in, respectively 'steering oar' and 'stern mounted rudder'. From the outset, it is clear that the aim of this work is primarily to study the QR:

- Its technology and hydrodynamics
- Its practical implementation
- How it developed from Classical times up to the C15th.

His source material is primarily the contemporary iconography (pictures, reliefs, models), supplemented by some medieval written material. What appears in individual representations to be a crude and cumbersome implement he shows to be a very practical solution to the problems associated with ships' steering at that time. He illustrates this argument with many examples which show the diverse material available (and, sometimes the considerable interpretation necessary). Appendices present practical model tests of some of the assertions made.

Although the main thrust concerns Mediterranean usage, a contrasting diversion is made to Northern Europe, where the form of mounting used for the QR made it an impractical mechanism once the size of shipping increased around the C11th. This was solved by application of the PG rudder. From where the idea of the PG rudder emanated is not known, but the technology and industry available to Northern Europe at that time, particularly associated with wrought iron, and the hull forms already in use there made the PG rudder a practical option.

Back to the Mediterranean, where ship design did not, at first lend itself to the application of the PG rudder. Anyway, the QR was highly successful there and the commercial considerations in using expensive wrought iron and the potential nightmare of PG rudders lost at sea had to be considered. Although the PG rudder, and associated stern-post were known in the Mediterranean at least from the C12th, it is not clear whether these came from Northern Europe, or from China and the Arabs. In any event, these forms were not in widespread use there till the C14th or C15th, probably forced by the increasing size of shipping. Once it was eventually established, the integration of PG rudder with hull-form and rigs allowed major strides to be made in ship design. Even so, the quarter rudder persisted up to the C17th.

MOTT achieves his main declared aim: This is an admirable study of the QR and should dispel the various misconceptions. His treatment of the PG form, and the associated technology is tantalising for introducing various ideas, which are not then developed. His discussion of how that form came to be incorporated into Mediterranean ship design is confusing. But then, this is evidently an aspect of technology whose history is badly in need of further research.

MOWLL, William. *Building a Working Model Warship*. Chatham Publishing, London, 1997. 200 pages, 175 photographs, 75 drawings. ISBN 0 86176 019 1. Price £20

(reviewed by EUR ING David K. BROWN, RCNC).

Many engineers enjoy making models, a sufficient excuse to review this fascinating book. The author describes in detail the task of building a working model of HMS *Warrior* (1860), 8 feet long. He begins with a brief history of the ship and her significance. The next chapter deals with the workshop, tools and materials, showing how modern procedures can be used to portray historic craftsmanship.

Making the various parts, hull, decks, boats, sails and flags etc., are described in detail in the following chapters. Each section clearly describes the work carried out and there are numerous photographs showing details of the work. If you have a few years to spare, it would be easy to follow the author's example. Understandably, the steam engine and boiler which drives the model are not replicas of *Warrior's* Penn trunk engine. The funnels seem to be the height used in service and not the short version tried unsuccessfully on completion and reproduced on the restored ship itself.

The model was floated before the machinery went in to determine the weight and position of the ballast needed - four bricks and three buckets of water brought her to the designed waterline with a displacement of 145 pounds. The watertightness of the stern gland was also proved.

The book is easy and enjoyable to read. There are a few dubious touches in describing the real ship. The author attributes a major role in the design to John SCOTT RUSSELL, something which the Admiralty formally denied. He also says that she spent most of her time at sea under sail alone; ADMIRAL WARSOP gives the correct figures as 22% sail alone, 36% steam only and 42% both. Perhaps this book will lead to a fleet of models!

PALOCZI-HORVATH, G. *From Monitor to Missile Boat*. Conway Maritime Press, London, 1997. 256 pages, 200 illustrations. ISBN 0 85177. Price £30. (reviewed by EUR ING David K. BROWN, RCNC)

This book begins by describing the considerable number of small 'battle-ships' designed in the 19th and early 20th century for coastal operations and then seeks to link these to the missile boats used today by smaller powers to guard their coastline. Even the Royal Navy built a considerable number of so-called 'coastal defence ships' though often that classification was misleading. In some cases the ship defied classification e.g. *Royal Sovereign*, the prototype turret ship. In some e.g. *Glutton* the title was to conceal the true role of coastal attack whilst in others such as the *Cyclops* attack was an important secondary role. Even the 'Flat Iron' gun boats, said by the author to be too slow even for coastal defence, were designed to be towed at high speed in their attack role.

Some of the most impressive coast defence ships were built in Sweden, such as the *Sveridge* of 1909. With four 11 inch guns she is correctly described as the equal of the early pre Dreadnoughts but by the time she entered service the RN was building Dreadnoughts with 13.5 inch guns. This was the weakness of the traditional coast defence ship; it could not compete with a true



battleship. Modern missile boats pose a serious threat to conventional warships but the Gulf War suggests that such craft are easily taken out by helicopter launched missiles. I disagree with the author in his view that a patrol boat or small corvette can be given an effective defence against helicopters and their missiles.

The photographs are well chosen and clearly reproduced. There is a lengthy table giving particulars of the vessels mentioned.

The main problem with this book is that it is not well structured. Having set out to write about coastal defence ships he finds it impossible to separate them from coastal attack. This is then compounded by his wish to call all early turret ships 'coastal defence'. Reed's *Devastation* and Barnaby's (Not Reed) *Dreadnought* were long range ocean going battleships. There are too many minor errors e.g. the caption of the *Etna* says she was damaged during launch but the picture clearly shows firemen and hoses during the fire which rendered her a total loss.

STURTON, I. (Editor). *All the World's Battleships, 1906 to the present*. Conway Maritime Press, London, 1997. 192 pages, over 500 photographs and drawings. ISBN 0851776914. Price £15.  
(reviewed by EUR ING David K. BROWN, RCNC)

The core of this book is formed by the text and tabular particulars from the battleship sections of Conway's *All the World's Fighting Ships 1906–21 and 1922–46*. The text has been corrected and amplified in places. In general, the source books had a single drawing of the ship as completed and new drawings have been added to represent major changes in appearance; for example, the QUEEN ELIZABETH class now has three such drawings. Similarly, the number of photographs has been considerably increased.

The original authors were carefully chosen for their knowledge of their topics and STURTON, who is well known for his own books on battleships, has done a fine job of editing. The book provides details and illustrations of the ships of two world war, backed by intelligent commentary.

The most important aspect of the book is its price. At only £15 it is remarkable value for money and if you do not already possess the 'Fighting Ship' volumes and want a record of the battleship, this book is highly recommended

de WINSER, John S. *Short Sea: Long War*. World Ship Society 1997. 160 pages, 132 illustrations. ISBN 0 905617 80 X Price £21 (£12 to Society members) plus £1.50 post and package.  
(reviewed by EUR ING David K. BROWN, RCNC).

This excellent little book tells the World War II story of 119 coastal ferries of the United Kingdom, France, Belgium and Holland. The book opens with a seven page chronology of the war as it affected these ships. It continues with individual histories of the ships, grouped by the routes which they plied before the war, e.g. 'North Sea Passenger Ships'. Their wartime service took many far afield. Twenty three supported the Mediterranean landings and other operations in that sea, they crossed the Atlantic, went to North Russia and to the Far East.

The author has identified no less than 40 different wartime roles such as minelayers, balloon carrier, convoy escort etc., though the majority ended as some form of landing ship. Many of the foreign owned ships served in the RN, usually, but not always under anglicised version of their original name—e.g. *Koningin Emma* became *Queen Emma*. The smaller number of ships which served in the German Navy are also covered.

The photographs are well reproduced and many have not been seen before. I particularly like the unusual pictures of convoy rescue vessels such as *Accrington* and *Melrose Abbey*. The few lower quality pictures are action scenes, well justified by excitement. Modern navigators will probably be surprised at the number of collisions in those days when radar was in its infancy and satellites undreamt of. My only complaint is that there should have been brief particulars of the ships whose careers are so well described. It is a worthy sequel to the author's *The D-Day Ships*, previously reviewed.

Copies can be obtained from:

World Ship Society  
PO Box 706  
Gravesend  
DA12 5UB

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