

## BOOK REVIEWS

BUDD, Robert.; GUMMET, Phillip. (Ed). *Cold War, Hot Science. Applied Research in Britain's Defence Laboratories 1945 - 1990*. Gazelle 2002 (01524 68765). 445 pages, 54 illustrations. ISBN 1 900747 47 2. Price £34.95 (Paperback)

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

After the Introduction, there are 13 chapters outlining different areas of Defence Research. Each chapter has a different author(s); all of whom seem well qualified to write on their chosen topic though most write from an academic or museum background rather than actual involvement.

Readers of this review will probably turn to the naval R & D by Tom WRIGHT who chooses to concentrate on aircraft carriers and nuclear submarines. There is a list of 'ship' orientated R & D establishments – it reminds me of a meeting called by the first DG Ships of the heads of his research laboratories. There was one too many for the seats as the Admiralty Distilling laboratory had been forgotten – as has WRIGHT. (It was on Portland breakwater and distilled fresh water) His point is valid: in the early post war years there were too many small establishments.

The section on submarines concentrates on noise reduction and is basically correct though propeller noise was mainly due to pressure fluctuations at blade rate rather than cavitation. His account implies happy co-operation between ARL, AEW<sup>1</sup> and AUWE, which regrettably was only true in the later years.

He is correct in emphasising the shock in 1957 when the USS *Nautilus* participated in the RN exercise RUM TUB. Even those who had read reports of nuclear submarine performance were staggered by the reality. Machinery silencing is covered adequately. While accepting that one cannot cover everything I feel that some mention should have been made of other work. There is little mention of AEW's work on surface ship propellers which gave the RN a 10 year lead in quiet propellers over other navies which included CONNOLLY's work on propeller strength. Then submarine control (BOOTH) and seakeeping (LLOYD) deserve mention and, above all, KENDRICK's work on pressure hull strength was vital to US designs as well as British.

There is another 'naval' chapter by Eric GROVE on Command and Control in which the British contribution was notable though, perhaps, swamped by USN efforts in later years.

However, there is much of interest in the non-naval chapters. I started to list those I found particularly interesting but that would be unkind to the others. The first two chapters deal respectively with fixed wing and rotary wing aircraft work. One is left with the impression that the former, almost entirely 'in house' at RAE went very well while industry performed less well on the latter. Ground to air defence is followed by AFV when from a poor wartime base, the UK led the world in tank design (including weapons) for many years.

The next two chapters cover infra-red and radar. There are chapters on lasers and chemical and biological warfare (very topical). The chapter on physiological research refers to the TALBOT committee on life saving which estimate that of 30,000 fatal casualties in the RN, two thirds got into the water and died there for lack of sound life saving gear.

<sup>1</sup> WRIGHT interprets AEW as Admiralty Experimental Works quoting his PhD thesis in support of his error. Since I was his examiner, I can assure you that he got it right (Experiment) in his thesis.

Finally, there is a chapter on organization. Your reviewer has strong views on the subject having spent much of his career in this sort of work and, since retirement been a consultant to the Trinity House R & D committee and much of this book confirms his views (Prejudices). Initially, there were too many small laboratories, often quarrelling. Some rationalization was needed but centralization went too far. Too often one was faced with the argument that electronic warfare was more important than seakeeping and the latter should be dropped. 'Priority' is a word, which confuses – it can mean urgency or importance and they are not the same. Finally, and several chapters support the view that a successful team should have some ability to freelance (In the mid 70s 10% was seen as a guideline for unplanned work).

This is an expensive book but those involved in the initiation or direction of research should read and ponder on every word. Many others will just enjoy it.

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CRITCHLEY Mike. *British Warships and Auxiliaries*. Maritime Books. 94 pages. 76 photographs (8 coloured). ISBN 0 907771 9 47. Paperback Price £6.95. (reviewed by John SHEARS)

This annual guide to the ships and aircraft of the Fleet maintains its high standard. The photographs are good and well produced, but the content is depressing. The author's introduction describing the state of the Fleet makes unhappy reading and one can only hope that someone somewhere is listening. The size of the Fleet is reducing and this is reflected in the book when the Marine Support Services nearly has a bigger section than the so-called fighting ships. The book is good value for money and recommended.

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LYGO, ADMIRAL Sir Raymond. *Collision Course*. The Book Guild. 566 pages. 71 photographs, 16 Illustrations, ISBN 1 85776 5141. Price £18.50 (reviewed by Geoff HIGGS)

Autobiographies are, by the very nature of things, highly subjective in their portrayal of the often selective events they record. They depend for their plausibility, if they are to have any merit, on the author's scrupulously fair and balanced presentation of facts, never allowing subjective opinion to so distort the truth that credibility is threatened. Otherwise the matter is best left to someone else.

Thus, due perhaps to an inbred sense of loyalty and an unwillingness to offend or embarrass former colleagues, few retired senior officers from the armed forces care to tread this path. Not so Sir Raymond LYGO. He clearly felt he could comfortably negotiate such pitfalls and sails through his story with typical self confidence and a firm stride, even if occasionally out of step

The book is a remarkable dialogue of detailed events and minutiae through a long career from leaving school at the age of fourteen, where apparently he did not distinguish himself, to his final retirement fifty or so years later, when he had, and perhaps would add, almost to his entire satisfaction. In that period he reached highrank in the Royal Navy, eventually as Vice Chief of the Naval Staff, and made his mark in industry. That he is able to provide such a detailed journey through these years suggests that he must have kept meticulous notes or been blessed with a most prodigious memory; memories, or course, are apt to play tricks.

The title of the book is intriguing. Perhaps a reference to the collision of HMS *Ark Royal* with a Russian destroyer, about which more later, or just possibly a tongue in the cheek reflection of his self confessed 'arrogant' and 'irritating attitude towards those unfortunate associates he encountered,' during his climb to the top in the Royal Navy and subsequently in industry. By his own admission he was not a likeable person and appears almost to have welcomed confrontation. Clever if not brilliant, from time to time he demonstrates a tendency towards unhealthy prejudice as, for example, his contemptuous dismissal of the views of a RAF Operational Requirements staff officer when, poacher turned game keeper, he had joined industry.

In the opening chapter the author treats the reader to rather quaint journalistic licence by playing ping pong with two unrelated events in which he was involved: a short section on one followed by the other and so on in a rather longish chapter. It is an interesting approach but a little indigestible for the reader. In the first the author steers carefully through the developing saga where the two ships, HMS *Ark Royal*, commanded by the author, and the Russian destroyer collide. CAPTAIN LYGO, as he was then, was subsequently cleared of any blame and we are told the Russian Captain was 'sent to Siberia'; they usually are. An interesting and unusual aspect of the affair is that CAPTAIN LYGO was able to take part in a press conference prior to any official inquiry, presumably with the consent of his Admiral, during which he was able to give his side of the story which, not unnaturally, resulted in a 'favourable press'. As his Admiral said at the time.

"You have just dealt with your Board of Enquiry."

The 'pong' of the Ping-Pong concerns an excursion into the political machinations surrounding the 'Westland affair' after his retirement from the Royal Navy and when he had joined British Aerospace. Much is made here of events concerning the last British helicopter manufacturer, Westland Helicopters, a company disparagingly referred to by the author as:

'An operation he could put in the corner of one of British Aerospace's hangars and not notice it was there.'

The importance of Westlands however was greater than the sum and the political intrigue and devious activities of the main players in the affair and into which the author, as British Aerospace Managing Director and leader of a European consortium was drawn, led, as he tells us, to the resignation of two cabinet ministers. What the author does not say is that the existence of a confidential letter from his Chairman to No 10 Downing Street was – as Mrs THATCHER was to complain later – 'mysteriously revealed' to Michael HESELTINE, who by then had resigned as Defence Secretary and was no longer in the government. With this knowledge the former Defence Secretary was enabled to 'trap' the DTI Secretary of State, into making a false statement in the House of Commons leading to the resignation of this second cabinet minister, Leon BRITTAN, a Minister who had previously ruffled the feathers of the author. As the author says, the full story of this episode would be worth another chapter and one senses that at times he found himself out of his depth with the more streetwise industrialists and politicians leading, as he admits, to considering resignation.

A book to read if not for your bookshelf; it is full of riches but like all rich fare, the reader may not care for all the ingredients. It may antagonise perhaps some of the players involved in his story and might even amuse a few others, although 'Mr Winkle BROWN', as the author charmlessly terms a retired naval captain, may not find it an enriched experience. There are some errors which, could have been avoided, as should the disingenuous asides which unfortunately arise all too often. As an instance, the author might have been well advised to review more carefully the circumstances of the SCIMITAR accident in HMS *Victorious*, which occurred

during his early days as Staff Aviation Officer. In this he is as materially inaccurate as much of his comment or opinion about events at this time is mischievous, provocative and certainly contentious.

Overall, this illuminating narrative provides at least as much insight into the man as the events he unfolds. It is a pity that he allowed an impressive record of achievement to suffer from unnecessary and immoderate self-glorification. None was needed and perhaps Sir Raymond LYGO has unwittingly written – in so many words – his own epitaph when he says.

‘You should have met my brother, he was the nice one.’

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MCCART Neil, in association with the Fleet Air Arm Museum. *HMS Glory 1945-1961*. Maritime Books 2002. 119 pages (a little smaller than A4 size). 127 photographs! ISBN 090 7771 93 9. Price £19.95.  
(reviewed by Iain HIME)

This book is rather like a very well produced Commission Book with a **fantastic selection of photographs**, an easy flowing narrative and a forward by ‘Spiv’ LEAHY (sometime Chairman of the FAAOA). It takes us from the laying of her keel in Belfast to her final scrapping in Inverkeithing. En route *Glory* had a very distinguished career. She arrived a little too late to take part in the final stages of the war in the Pacific but was involved in the surrender of Japanese forces at the end of WW2 and the repatriation of POWs and other combatants to Canada and Australia. On and off, she spent a significant amount of time in the Mediterranean but her major claim to fame is her involvement in the Korean War. In a series of patrols off the coast of Korea *Glory* lost 21 aircrew over a period of 2½ years and launched an impressive number of sorties on a daily basis often under appalling weather conditions. On Sunday 5 April 1953, CAPTAIN LEWIN (sounds familiar),

“Put into practice a theory that a carrier with 33 aircraft should be capable of launching 12 sorties every daylight hour.”

*Glory* did considerably better and launched 123 sorties in an eight-hour period! A formidable achievement by maintainers and aircrew with all pilots flying at least 4 sorties (LT LEAHY flew 5).

As Spiv says in his foreword,

“This book will be appreciated by those who served in *Glory* and it will serve for others as an accurate and interesting record of life as it was in a Royal Navy Light Fleet carrier some 50 years ago.”

At £19.95 it is excellent value for money.

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MEHL, Hans. *Naval Guns 500 Years of Ship and Coastal Artillery*. Chatham Publishing, London, 2002. 215 pages, some 400 photographs etc. ISBN 1 86176 201 1. Price £40.

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

This is a picture book; the author tells us so.

'by providing a wealth of pictorial material.'

On each page (with a few exceptions) there are two photographs of guns preserved in museums or onboard the original ship. Each photograph is accompanied by a short text passage. There are also two colour sections of 34 illustrations and a few line drawings.

The earliest picture is of a 14th century Danish gun and there are numerous examples from the great days of the 18th and 19th centuries. There are plenty of more modern guns including coastal defence artillery.

The photographs are of high quality and clearly reproduced. They come from a very wide range of countries and sites and, among the smaller navies, there are 'export' versions of guns from major naval powers. Inevitably, the brief texts leave much unsaid and some half-truths have crept in. The author recommends his readers to buy books by CAMPBELL, PADFIELD etc. for technical data, a rather expensive operation.

If you only require a series of good photographs of guns, this book is recommended.

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MESSIMER Dwighr R. *Verschollen. World War I U-Boat Losses*. Naval Institute Press, distributed by Chatham Publishing, London, 2002. 341 pages, 14 photographs. ISBN 186 176 2135. Price £25.

(reviewed by John SHEARS)

The author has produced an excellent book on the 203 U-boats lost during the first World War. The title of the book *Verschollen* (Missing or presumed dead), indicates that there are many losses unaccounted for. Each U-boat has a summary of its last patrol, accounts from survivors etc. and for those listed *Verschollen* a summary of what is known.

Reading the books makes one feel slightly uneasy being British when one reads about the way survivors were treated when in the water (U27, U41, UB110 and UC75). Also the use of Q-ships when the U-boats were complying with the Prize Regulations is also questionable.

During the war the use of mines/nets across the North Sea and English channel proved to be very effective and 35 boats were destroyed by mines (but some of these were German mines!). The next successful weapon was the Depth Charge (28), but in several cases this was combined with either ramming (26) or gunfire (25). The last to stand out was the 18 lost due to torpedoes.

In many cases it was difficult to identify the boat that was involved in a specific action, as they did not have any markings on the Conning Tower. But 15 were later positively identified by divers. In these cases an exact location is given and one can imagine all the amateur divers heading for these areas! It is interesting to know that nothing really changes over the years. Several boats are lost when they are run aground following a navigational error. UB85's hatch would not close due to the introduction of an unofficial modification. UC69 (outbound) managed to meet and collide with U96 (homebound) in the English Channel.

The description of some of the escapes are hair raising, but this reviewer's favourite is the machinist from UB109 who is carried through all the compartments on the crest of the rising water and is eventually shoved out of the forward hatch. UC36 has the distinction of being the first boat to be destroyed by an aircraft in May 1917, whilst UC 66 was lost in action with the *Sea King* (in this case a trawler).

A good reference book that is recommended.

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MOORE, George. *Building for Victory* World Ship Society.\* 2003. 196 A4 pages, 52 photographs, 21 drawings. ISBN 0 9543310 1 X. Price £27 + £5 p&p UK (£18 to Society Members)  
(reviewed by EUR ING David K. BROWN RCNC)

Students of the naval aspects of World War II have always found difficulty in reconciling the planned UK building programme with what actually emerged. This carefully researched book provides a mass of tabulated data together with a text, which clarifies the conflicting influences that governed the programmes. Foremost of these conflicts was the Admiralty's efforts to ensure that there was a balanced fleet when the war ended opposed by the Treasury view (largely supported by the Prime Minister) that only ships which could complete during the war should be ordered.

There were internal conflicts too. The First Sea Lord for much of the war, Dudley POUND, was a strong advocate of the battleship, opposed by many, including the DNC Stanley GOODALL, who realized its day had passed. A later Sea Lord stopped a carefully justified small cruiser because he wanted 6 inch guns instead of 5.25in -- as a result nothing was built. There was great debate on the need for carriers and over their configuration.

Once the design was approved further problems appeared. There were genuine shortages of material and labour, for example, the clash with tank armour. Many young men had been called up leaving labour and management in the hands of older men. The increased complexity of warships altered the balance within shipyards: lack of electrical fitters was a particular problem. These real problems were exacerbated by union intransigence and lack lustre management. Bombing and the blackout added to the difficulties.

Despite all these problems, the author brings out the magnitude of the triumph of the shipbuilding and supporting industries. Despite heavy losses, the Navy of 1945 was far bigger and individually more capable than that of 1939.

The Appendices are a vital – and fascinating – part of the book:

#### Appendix 1

Runs to 26 pages, lists all major warships ordered from 1936 onwards with important dates. The Admiralty Job numbers and the builders' number are given which are essential to the understanding of contemporary documents.

#### Appendix 2

Sets out the programme and expenditure approved each year by the Cabinet.

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\* Can be obtained direct from the Society at, The Gables, School Lane, ELTON, Peterborough, PE8 6RS (Cheques to World Ship Society)

## Appendix 3

Defines shipyard capability in terms of number and size of building slips.

## Appendix 4

Lists the estimated completion dates as the slip from time to time.

## Appendices 5 &amp; 6

Summarizes merchant shipbuilding effort which, inevitably, clashed with naval work.

## Appendix 7

Provides a graphical presentation of the way in which effort was allocated.

## Appendix 8

Compares naval output with that of tanks and aircraft.

An exceptionally long bibliography and list of sources – some 4 pages of Public Record Office documents alone, support the author's text and figures.

Many of the 52 photographs are of ships under construction and have not been reproduced before. A particularly poignant photograph from 1948 shows three aircraft carriers completing at Harland and Wolff – we are never likely to see three carriers completing together nor a ship of any sort from Harland and Wolff. The 21 line drawings of designs, which were never built, are of great interest.

This is a splendid book, which I have no hesitation in recommending though I must confess to bias having commented on the author's drafts.

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PRESTON, Anthony. *The World's Worst Warships*. Conway Maritime Press, London, 2002. 192 pages, 74 photographs and line drawings. ISBN 0 85177 7546. Price £19-99

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

The author lists six factors, which have a major influence on ship design:

- Cost.
- Perceived threat.
- Industrial capacity.
- Design competence (including, I hope, experience, so lacking today).
- The operating environment.
- Incorrect post-battle analysis.

I would agree with all these but add 'available weapon systems.'

PRESTON then reminds readers that a ship is the largest mobile structure on the planet (and warships are, today, the most expensive single artefact in the defence budget). This leads to the view that warship design is a highly professional business and there is no place for the amateur, instanced by the capsizing of the *Captain* and the claims made for the 'short, fat frigate.' I cannot resist quoting from the response by the Italian designer BRIN to an amateur design by the German Kaiser:

"The ship which your Majesty has designed would be the mightiest, most terrible, and also the loveliest battleship ever seen. This wonderful vessel

has only one fault: if she were ever put into the water she would sink like a lump of lead!"

The score for 'worsts', by nationality is:

RN	10
USN	6
Russia	4
France	3
Germany	3
Japan	3
Austria	1
Italy	1
Sweden	1

This suggests that the number of errors is roughly proportional to the number of designs. Included in the catalogue of errors are a number of popular favourites, notably *Bismarck*. There is a general tendency to overestimate the capability of the potential enemy and PRESTON frequently criticises "Intelligence services." I think he is a little unfair as intelligence, if it is to be of value, must usually present a 'worst case' scenario. It is then up to the Staff to add a pinch of salt.

The British ships included are:

*Captain*, *Polyphemus* (Torpedo ram), *Powerful*, *Swift* (Destroyer), K class submarines, *Courageous* (as cruiser), *Hood*, *Implacable*, HTP submarines, Type 21 frigates.

Opinions will differ, one or two are close to my own list of 'best' designs, but it is to be hoped that the book will provoke serious debate. It is, perhaps, even more difficult to select a similar number of best designs but this, too, is important. In the euphoria of success it is all too easy to miss the lessons and sometimes the margin between success and disaster is very fine. (Perhaps the K class submarines are an example of this fine margin)

I will attempt to summarize PRESTON's views on the problems of his 10 RN ships (with occasional dissenting views)

- *Captain*'s failure was design incompetence by Lairds following COLES' unsound concept. One may see *Powerful*, *Swift* and, possibly *Courageous* as follies of grandeur. It is no coincidence that the latter two derived from FISHER concepts – Bigger and faster regardless of cost.
- My studies of *Polyphemus* suggest that she was primarily an armoured torpedo boat and that the ram was a minor afterthought (though FROUDE's model tests on the shape of the ram may be seen as the origin of the bulbous bow). In almost all successful torpedo attacks in the 19th century the victim was stationary making the slow speed of her torpedoes less important. (I believe that she was intended as part of the RN plan to attack the French fleet in Cherbourg harbour).
- *Hood* and, to a lesser extent, *Implacable* suffered from major, last minute design changes and it would have been 'better' to start afresh. However, both were built in the middle of a war and it may have been justifiable to press on rather than wait another two years for a better design. *Implacable*'s low upper hangar could only hold



SEAFIRES. These were never very good FAA aircraft though the Pacific fleet overcame some of their problems.

- The K class submarines suffered from problems over their role and also from technical faults. The need for a fast fleet submarine was perceived into the 1930s and cannot be dismissed as nonsense. The technical problems such as low freeboard forward, water entering the boiler room on the surface down air intakes and even funnels were largely solved in the last - K26. (Scotts deserve some credit for their *Swordfish*, an earlier steam submarine, whose retractable funnel was adapted for the Ks). If one or two prototypes had been built these problems would have been ironed out. HTP submarines could probably have been made to work safely but the effort was not worthwhile once nuclear power was proven.
- Type 21. Whitehall thought they were getting a very cheap LEANDER equivalent (I am assured that Vosper's never quoted £3½ million) – perhaps they transgressed the Rule that one does not design second rate ships. They were old fashioned in armament as built but were well liked – perhaps because of their fine accommodation for both officers and men. Their speed increased by 1½ knots once I arranged for a transom flap to be fitted to *Avenger*. The problem with the aluminium structure was primarily fatigue. A major failure in the aluminium could throw an unacceptable load on the steel hull.

The book is accurate in essentials but needed more careful proof reading – I do not believe the *Borodino* had armour 8ft thick nor that her torpedo bulkhead was 6.34inches inboard. A photograph of *Furious* is wrongly identified as *Courageous* and there are others.

Many major advances are made as a result of studies into what went wrong and for this reason the book is of great value (and very readable). Lessons from success tend to be more difficult and problems arise in the design of a batch II when the reasons for the success of the batch I are forgotten. This book is essential reading for young Staff Officers and Constructors. It should provoke heated argument in the mess.