

BOOK REVIEWS

The Naval Review

(reviewed by M. R. Owen, R.C.N.C.)

The Naval Review was founded some 62 years ago with the rather abstract but doubtless praiseworthy aim, 'To promote the advancement and spreading within the service of knowledge relevant to the higher aspects of the Naval profession'. In essence *The Naval Review* is published quarterly to provide members with the medium for the exchange of ideas and views on any subject relevant to the Navy. Members are actively encouraged to contribute to the *Review* by being paid for the papers or articles published; editor of JNE please note!

On picking up the *Review*, the first intellectual hurdle to overcome is the fact that there are no pictures in it. This is not always very easy for engineers, but having mastered this drawback I have found many of the articles published over the last two years varied and very interesting. Subjects covered have included Leadership, Naval history, Maritime strategy, Fleet support and Equipment procurement. In addition each issue of the *Review* carries a comprehensive set of reviews on naval periodicals and books. These are usually lively and well up to date; for example the January 1985 issue covered the book, *Submarine*, before the television programmes had been shown.

Several issues in recent years have articles on Fleet support and procurement, areas which are very relevant to naval marine engineers. Needless to say the S90/Osprey saga has been raging in the *Review's* pages, lead by an article written by David Giles entitled 'Laws to be Broken'. I hasten to add that the laws he refers to are those of hydrodynamics rather than those of contract or tort. There have been several articles on impact of modern technology on naval strategy and how the resulting changes might affect ship procurement. Most agree that the traditional roles of Sea Power, Command of the Sea, Protection of Trade, Projection of Power Ashore, and Naval Presence hold firm, but tactics to achieve them are the subject of considerable debate. *The Naval Review* provides a useful source of information on this subject. It was refreshing to see an article by a squadron-leader concluding that balanced forces at sea are still needed in spite of the might of air power.

Some of the historical articles make very good reading, even if the subject matter is often pretty obscure. A recent example is 'Captain Samuel Wallis's Voyage Round the World in H.M.S. Dolphin 1766-1768' (*Naval Review* Vol. 73 No. 1, Jan. 1985).

Authors of articles in the *Review* can remain anonymous. The idea of this is to allow members to be outspoken without any fears of retribution. I think this rather unnecessary these days and I feel that an article carries little authority without a name at the bottom.

When I first looked at a copy of the *Review* three or four years ago I admit I found its dour appearance rather off-putting. However since I joined, I have found each issue interesting and well worth the subscription. I recommend the *Review* as good reading for all those interested in general naval matters.

(*The Naval Review* is published quarterly to members only. Membership is effectively open to anybody who receives a copy of the *Journal of Naval Engineering*, and it costs £10/year at present. Applications for membership should be addressed to: Captain C. H. H. Owen, Royal Navy, 32 West Street, Chichester, West Sussex PO19 1QS.)

HACKMANN, Willem: *Seek and strike: sonar and the Royal Navy 1914-1952*. Norwich, HMSO Books. 1984. 487 pp. ISBN 0 11 2904 238. £15.95 (reviewed by D. K. Brown, R.C.N.C.)

There have been many histories of radar which discuss its technology, operational use and the contribution made by radar to victory. Until now there has been no similar history of sonar, or asdic as it was known for most of the period covered by this book. Willem Hackmann has filled this gap in fine style.

The development of underwater sensors is covered in minute detail from its beginnings just before the First World War; there is even a new derivation of the word 'asdic'. During the 1914-18 war the main emphasis was on the hydrophone and on understanding the physics of sound transmission under the sea. Initial developments in echo ranging led to quartz transducers using the piezo-electric effect leading to effective asdics in the 1920s. Developments in the U.S. Navy and in France paralleled the British work but with more attention to magnetostriction transducers. The British success came from the integration of transducer, dome, and range recorders into a comprehensive system, and in producing appropriate tactics to use the new equipments.

Germany followed a different line, concentrating on a remarkably fine passive sonar, and the author clearly believes that the R.N. was remiss in not pursuing this line of development. The causes of ship noise and its effect on asdic were identified in U.K. as were the effects of reverberation.

During World War II the effectiveness of asdic was increased when a depth-finding set was developed and this, together with the use of ahead-throwing weapons, much increased the rate of U-boat sinkings. The story continues with post-war developments up to the 184. The illustrations are well selected and very few have been published before.

Dr Hackmann also deals with the organization of scientific research and the career of scientists in the Admiralty, and in these aspects his treatment is somewhat debatable. There is frequent reference to the inevitable conflict between the Navy's wish to get a new equipment into service and that of the scientist, aware of the problems likely to follow an over-hasty introduction of under-developed equipments. The author's treatment of this real dilemma is less than impartial, as he sees the scientists' viewpoint as always right. This inability to see both sides of an argument recurs when the Constructor's reluctance to cut away the keel to accommodate the sonar is mentioned. The conflict between the Navy and science is overdramatized with too many examples of personal ill feeling.

Seek and Strike is very detailed in its coverage of technical matters but Dr Hackmann is very good in explaining scientific matters. His grasp of the

Navy and ships is less certain and there are irritating minor errors. It is not an easy book to read because of the depth of detail but the effort needed is well justified.

The author has now made clear the vital contribution made to victory in World War II by the scientists who developed asdic. The time must surely be ripe for a new history of the Battle of the Atlantic incorporating this work on asdic, and for others on the contribution made by Ultra and by HF/DF.

Conway's All the world's fighting ships, 1906-1921. London, Conway Maritime Press. 1985. 439 pp. Price £35.00. ISBN 0 85177 245 5 (reviewed by Lieutenant-Commander John M. Maber, R.N.

This volume, dealing with the years 1906-1921, completes the originally planned series detailing the development of the world's warships, other than auxiliaries, from the launch of H.M.S. *Warrior* in 1860 through to 1982.

The period covered was an innovative one stemming from the construction of H.M.S. *Dreadnought*, the first single calibre gunned battleship and the first to be engined with steam turbine, direct drive machinery. In fact, the Royal Navy led the way in the field of machinery development; the *Dreadnought*, like contemporary battleships built for the R.N., was equipped for mixed firing, that is, 1120 tons of furnace fuel oil were carried in addition to 2900 tons of coal, the former being sprayed over the hot coals to enable some increase in endurance while cutting down the physical demands on the stokehold crew when steaming at high powers. At the same time, delivery was taken of the first of the wholly oil-fired turbine engined ocean-going destroyers of the TRIBAL Class, plus the first of a class of oil-burning torpedo boats, latterly known to the Fleet as 'oily wads'! The first battleships to burn oil fuel only were the QUEEN ELIZABETH Class of 1915-16, its adoption to permit an increase in power for 25 knots sea speed being largely inspired by Admiral of the Fleet Lord Fisher and the then First Lord, Winston Churchill.

Geared turbine machinery, in which field the R.N. again led the way, came with the launch in 1911 of the partially geared destroyer *Badger* (h.p. and cruising turbines only were geared) followed thereafter by the all-g geared destroyers *Leonidas* and *Lucifer* in 1913. Machinery of this type was first adopted for major warships in Fisher's large 15 inch gunned (19 230 tons) light cruisers (no one really knew to what category they belonged!) of the COURAGEOUS class which joined the Fleet in 1917. The U.S. Navy, on the other hand, largely at the behest of the General Electric Company, turned to electric transmission for capital ships.

The U.S. Navy pioneered the submarine as a practical fleet unit and indeed the first submarines built by Vickers for the Royal Navy were of American 'Holland' design. Boats of Laurenti (Italian), Laubeuf (French), and Vickers, in addition to Admiralty, design were built for evaluation in later years, but eventually development, insofar as the R.N. was concerned, stemmed from the 'H' (coastal) and 'L' (overseas) Classes, the survivors of which served with the Fleet through the Second World War. Other developments included the large geared steam turbine driven 'fleet' submarines of the 'K' Class, capable of 23½ knots on the surface, and the anti-submarine 'hunter-killers' of the 'R' Class built in 1918 and capable of 15 knots submerged. As for the 12 inch gun (ex-MAJESTIC Class battleships of the eighteen-nineties) armed 'M' Class, no one really knew for what they were intended, although from a drawing (not reproduced in this volume), the wardroom with arm-chairs and occasional tables appears to have been quite comfortable by contemporary submarine standards.

As in the case of the submarine, the U.S. Navy took the initiative in the development of naval aviation, the first trials being undertaken from the scout-cruiser *Birmingham* in 1910. The R.N. was not far behind, however, and in 1912 wheeled seaplanes were successfully launched from the battleships *Africa*, *Hibernia*, and *London*. Then, in 1913, the ageing protected cruiser *Hermes* was recommissioned as the first seaplane carrier, with canvas hangars for two aircraft, a launch ramp forward, and stowage for 2000 gallons of aviation fuel. Following the outbreak of war in August 1914, a number of mercantile conversions joined the fleet as seaplane carriers but it was not until 1918 that H.M.S. *Argus*, the first true aircraft carrier with a full-length flight deck, went to sea. Laid down by Beardmore as the Italian liner *Conte Rosso*, the *Argus* had been purchased for conversion in August 1916 and when commissioned embarked 18 Sopwith Cuckoo torpedo-armed aircraft. She was followed in 1922 by the purpose-built Japanese aircraft carrier *Hoshu*, a 9499 ton vessel based on an oil tanker hull design.

Apart from the aircraft carriers, the majority of major warships were equipped to operate wheeled aircraft from 1917, the launch being achieved from ramps mounted atop one or more turrets in battleships, so that the mounting could be trained into the wind for take off, or from a platform forward of the bridge or abaft the funnels in cruisers. The aircraft in general use were the Sopwith 1½-Strutter and the Sopwith Pup which could achieve lift-off in about 20 feet! Elsewhere, the U.S. Navy pioneered the development of the catapult, initially powered by compressed air and first tested afloat in the armoured cruiser *North Carolina* in November 1915.

Anti-torpedo bulge protection was developed in the wake of experiments carried out between 1911 and 1914 with the long out-dated battleship *Hood* of 1893, and saw its first practical application in the battleship *Ramillies* completed in 1917. Further improvements in the protection systems of capital ships followed in the aftermath of Jutland although they were too late in the day to help the battlecruiser *Hood*, which was to be destroyed in a brief encounter with the German battleship *Bismarck* on the 25 May 1941.

Mine warfare and asdic (now sonar) were developed through this period as was the Coastal Motor Boat (an innocuous-sounding cover for the Motor Torpedo Boat) which achieved resounding success at Kronstadt in July/August 1919 when, under the command of Lieutenant Augustus Agar, they sank the Russian cruiser *Oleg*, the battleship *Petropavlovsk* and the submarine depot ship *Pamiat Azova* and damaged other vessels.

Much was achieved in the brief fifteen years spanned by this book, but in fact the long-term gains stemming from these beginnings were the considerable developments which were to follow during and after the Second World War. The whole series published by Conway Maritime is an essential reference for anyone with a serious interest in warship history since, being put together with the benefit of hindsight, it far surpasses contemporary publications such as 'Jane's', 'Flottes de Combat' and 'Weyer'. A further volume—taking the story back to the introduction of steam—is planned and thus eventually the chronicle will be complete.