

## CORRESPONDENCE

### WARSHIP PROPULSION SYSTEM SELECTION

SIR,

I was very pleased that my book entitled *Warship Propulsion System Selection* was reviewed in the last issue of the *Journal* and would like to respond to some of the comments made in the review.

To clarify what appears to be a misunderstanding, there was certainly no intention on my part that the book should be a reference work that could be used as a checklist during a propulsion system selection, but more as a work that surveyed the arguments and interactions inherent in the subject. Selection of a propulsion system occurs early in the design process when there is a limited definition of the vessel and features of the propulsion system. A designer must decide what features must be defined, and to what degree, so that the minimum of resources can be devoted, in the most efficient manner, to the selection. The features to be investigated and the extent of investigation, will depend entirely on the design being studied. It is unlikely that any book could be comprehensive enough to cover all possible features of every possible propulsion system selection, but by highlighting issues, it was hoped that my book would be of value as a springboard into a particular propulsion system selection study being undertaken now, or in the future. I believe that Vice-Admiral Sir Hugh Thompson recognized this point in the foreword, when he emphasized that the book is appropriate for those entering this area of marine engineering, as they are the ones most likely to appreciate insights which will enable them to decide where to concentrate their efforts.

I went to pains to make it clear in the book that it addressed issues that were relevant during the selection of a propulsion system. All the other aspects of propulsion systems that must be studied before a propulsion system becomes a reality at sea were not discussed as they were outside the scope of the book. Nuclear safety is clearly very important and a very large subject in all its facets. However, during a propulsion system selection, only parts of the safety scene are relevant and discussion in the book was restricted to their impact.

It was certainly an interesting thought put forward in the review, that the traffic density in a localized sea area such as the Dover Straits, could be more relevant than the immense technical, Military and political issues involved in considering the selection of nuclear power in a surface ship.

Chapter 11 of my book covered a study into the *need* to develop a new marine gas turbine. The need must be justified and, as discussed in the chapter, when justifying the need there has to be a process of assessing what new forms of propulsion could be developed. These can be compared with engines either currently in service or that could be evolved from types in service. Thus, as the reviewer says, the *choice* could well be limited by the gas turbines already developed for aero applications, but that was not the point of issue in that chapter.

(Sgd.) C. M. Plumb

### H.M.S. 'WARRIOR'

SIR,

I have deliberately omitted one aspect of Lambert's book from my review so that, by my raising it in the correspondence columns, the author may reply. Lambert maintains, in several places, that *Warrior* was not seen as a

line of battleship but rather as something akin to a prototype battle cruiser, a view from which I strongly dissent.

By the definition of the day, *Warrior* was, of course, a frigate, with one gun deck under the upper deck. She was, however, designed to defeat the most powerful enemy 'battleship' *Gloire*, and Lambert is quite clear that *Gloire* was indeed a battleship. To this end *Warrior* was given the most powerful guns available, limited in number because of their weight and space requirements, and armour invulnerable to *Gloire's* guns. She was then made fast enough to catch *Gloire*. (There is good evidence that she came out faster than intended.) This combination of heavy guns, thick armour and speed, able to destroy the most powerful enemy ship is far removed from the battle cruiser concept.

*Warrior* may be seen as the prototype of the fast battleship—*Queen Elizabeth*, *Iowa*, etc.—but she was more directly the first of a strange breed of 19th century ship—the single 'Champion'. *Warrior* was to sink *Gloire*; *Inflexible*, the *Italia*; and *Powerful*, the *Rurik*. A strange idea in the vast spaces of the sea.

(Sgd.) D. K. Brown

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