

Introductory Remarks

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Introductory remarks

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The Royal Society, which from the seventeenth century onwards has acted as a centre for whatever has been of excellence in British science and technology, is participating more than ever today in those processes by which science and technology are recognized as integrated into the fabric of society in general, and into the industrial life of the country in particular. To this end, The Society's Committee for Industrial Activities, of which I am Chairman, is organizing an extended series of discussion meetings under the general title 'Technology in the 1980s'. There was an excellent attendance for the exciting first meeting of the series, held last November, on 'Building technology in the 1980s', and I am delighted to welcome another large and distinguished audience to this second meeting on the subject 'Ship technology', one that has been dear to the Royal Society's heart from the early days of Fellows such as Samuel Pepys.

The general aim of our series of meetings on 'Technology in the 1980s' is to promote, in the context of each major industry or group of industries, the formation of some integrated forward look by those engaged in research, development and forward planning. We want to ask not only to what extent the research and development now in progress may succeed in improving the industry's future prospects; not only how the changing world patterns of demand and other economic factors will modify the kinds of research and development needed; we aim to go beyond those two questions into the field of integrated techno-economic planning which seeks to combine the best available technological and economic information to produce as clear a map as possible of the industry's future; a map with the features of Britain's own industry emphasized, but seen in the context of world developments.

We were guided in these processes for building technology by leaders of the construction industry as well as by designers and researchers and distinguished speakers from overseas, and the resulting survey of that huge field, a survey which is now being finally processed by our editorial department, is a quite fascinating piece of reading. On the other hand, the special glamour of the sea will perhaps make our proceedings today and tomorrow still more fascinating. At first sight they appear as some sort of 'marine parallel' of the earlier meeting, but really our scope is wider since two separate industries are here involved: the shipping industry, with its emphasis on the operational problems of marine transport systems, as well as the shipbuilding industry, with its emphasis on naval architecture and marine engineering.

Of the two industries it is the latter in which I feel myself more at home, both as a hydrodynamicist, and also as a former member of the Geddes Committee of Inquiry into the Shipbuilding Industry: in fact, the member who composed those parts of its report concerned with research and development. I have recently been delighted to make contact again with valued advisers and colleagues on ship research and development from those days, and especially Dr Hurst, the director of the British Ship Research Association who for this Meeting is my co-organizer with special knowledge of shipbuilding research and development. I should like to add at this point that the Royal Society, in all its industrial activities, has won the most

cordial cooperation and encouragement from C.E.I. and its member institutions: in the present instance, the Royal Institution of Naval Architects whose president, Sir Alfred Sims, I am happy to welcome, and also the Institution of Marine Engineers, whose president, Mr Munton, is one of our speakers tomorrow.

From the shipping industry, I have been most heartened and encouraged by the ready co-operation of the Chamber of Shipping, particularly in the person of my other co-organizer, Mr F. B. Bolton. His advice has been invaluable in planning presentations to give all of us insight into the future of the British shipping industry, as Mr Denholm will shortly be doing for us, as well as to place that in the context both of the global future for marine transport as our distinguished Norwegian visitor Mr E. F. Lorentzen has agreed to do, and of agreements for environmental preservation as Mr Meek will do. The challenge posed to designers by the complex pattern of international and other regulations for environmental protection as well as for safety and structural integrity plays a key role in this meeting as it did in our building technology meeting, and Mr Prosser of D.T.I.'s Marine Division and Mr McCallum of Lloyd's Register will show what a close two-way interaction there is between regulation-centred researches and design-centred researches.

In the design field itself we are once more welcoming an outstanding overseas speaker in the person of Professor C. Chryssostomidis of M.I.T. who in his paper with Professor Mandel will highlight the systems approach to design, in which the ship is seen as part of an integral marine transport system. A different type of integration, this time between design and production, will be described by Mr Atkinson of B.S.R.A., while the impact of specialized scientific researches now in progress upon the designs of the future will be outlined by Mr Paffett, Superintendent of N.P.L. Ship Division, and Professor Caldwell of the University of Newcastle upon Tyne.

We organizers decided to lay principal emphasis in this discussion upon the future of *civil* marine transport. We should therefore like to suggest that naval developments are brought into the Discussion not so much for their own sake but rather *where* they appear indicative of future civil developments. We considered this to be especially likely in the field of marine engineering, and therefore asked Rear Admiral Dymoke to give us the benefit of his great experience in the area of naval ships' engineering systems (excluding, of course, weaponry). His presentation is complemented on the civil side by that of Mr Munton of Cayzer, Irvine & Co.

The last part of the meeting will seek to peer deep into a cloudy ball and try to discern what is indeed the future for shipbuilding, and what will be the nature of the shipyards of the nineteen eighties? On the world scale, no-one could be better qualified to help us find the answer to this question than Mr I. Takezawa of Mitsubishi Heavy Industries Ltd, and we feel the warmest and sincerest gratitude to him for having taken so much trouble to come here from Tokyo and present his outstandingly interesting paper. He will be followed from the standpoint of the British industry by Dr Fred Taylor, the technical director of Swan Hunter Shipbuilders Ltd, a firm that has successfully established on the River Tyne something of a model of the type of Shipbuilding organization recommended by the Geddes Committee!

May I finally emphasize that the organizers will encourage a lively discussion from the floor at the end of each paper. I ask our main speakers to speak for not more than 25 minutes each, leaving ample time for other discussion contributions. These should, I stress, be aimed as far as possible *at* the problems of the 1980s, however pressing and serious today's problems undoubtedly are!