



EDITOR'S CURRICULUM VITAE

Professor C G Hodge FEng

Chris Hodge served for 26 years in the Royal Navy gaining a BSc degree in mechanical engineering, an MSc in electrical engineering and a post graduate diploma in nuclear engineering. Among other sea appointments he served as the Marine Engineer Officer in HMS ORPHEUS and HMS CONQUEROR. Subsequently he served in the UK MoD as the Head of both the Mechanical and Electrical Nuclear Steam Raising Plant Design Authorities and completed his naval service as the Head of the Electrical Power Systems Specialist Group.

After leaving the Royal Navy he joined Rolls Royce Marine in various positions before joining BMT DSL as the Chief Engineer - Electrical. He has experience across much of marine engineering including operation, maintenance, in-service support and design of systems and equipment for both surface ships and submarines. He has a significant international reputation for his breadth of knowledge and understanding of marine electrical power systems. He is recognised for his work associated with the topology and application of innovative power electronic converters, the issues relating to novel torque dense propulsion motors and the stability determinants of marine electrical power systems.

He has published widely; winning numerous awards and has been invited to deliver keynote addresses in several international engineering conferences, including ones in Japan, China, the USA and Europe. He has delivered Prestige Lectures for both the Institution of Mechanical Engineers and Institution of Electrical Engineers and was awarded the Institute of Marine Engineering, Science and Technology's Gold Medal in 1996. He has served as an elected Fellow of Council and an appointed Vice President of the Institute of Marine Engineering, Science and Technology and remains on its Board of Trustees. He is currently serving as an elected member of council of the Royal Academy of Engineering.

A Chartered Engineer, he is a Fellow of the Institute of Marine Engineering Science and Technology, a Fellow of the Royal Society of Arts, a Fellow of the Royal Academy of Engineering, a Visiting Professor at the Universities of Glasgow and Strathclyde and an Honorary Professor of Engineering at the University of Warwick.

THANKS TO THE FORMER EDITOR

Notwithstanding the announcement of John Shear's retirement in Volume 42(2) of the Journal of Naval Engineering it is considered that heartfelt thanks should go out to him for 13 years excellent stewardship of the Engineer's journal.

We all wish him well in his retirement.

EDITORIAL POLICY

The principal purpose of the *Journal of Naval Engineering* is to contribute to the continuing education and technical updating of the chartered engineers and naval architects, naval and civilian, of the Royal Navy. A secondary purpose, which does not conflict with the first, is to assist in the education of both naval engineers and technicians. The *Journal* will meet these purposes by publishing articles (and correspondence) with a specific naval connection; it will seek to achieve a standard associated with journals, while generally avoiding excessively mathematical or technical presentation.

Overall the *Journal* should provide engineering information and reasoning in every field of naval engineering, including management; it will also relate personal experiences, both recent and historical, so that the reader can take these into account, when making professional judgements. Above all, the *Journal* should cause the reader to think.

The main readership is Naval Engineer Officers and their civilian counterparts, together with the more senior technical ratings and civilian technicians. Whilst most articles are written with this readership in mind, they are likely to be of interest to others also. Ship designers of other specializations, naval scientists, Commonwealth and NATO navies and to some extent industry, also make use of the *Journal*.

The content is designed to be wide. Beside articles that go into considerable technical detail on their subjects, there are others that aim to provide the framework within which technical decisions are made. Accounts of actual experience in design, trials and repair are invaluable for any engineer, and hence for the *Journal*. Even more vital for the naval engineer is feedback from sea. History is part of the context of engineering life and the successes and failures of the past can often illuminate the problems of the present. Thought-provoking suggestions and responsive published correspondence are desirable. Deeply specialist papers, of interest only to those who are themselves specialists, are not appropriate.

Not every article is expected to interest every reader, nor should it. On the other hand, most of the articles should have an active life of up to ten years, remaining as the latest authority on their subjects until superseded.

Whilst many of the articles appearing in the *Journal* are specially commissioned for it or are offered by the author who has something to say, there are occasions when a paper written for one of the Professional Institutions or a Symposium is so directly suitable for *Journal* readers, that it is reprinted here. Several unclassified articles, commissioned for the *Journal*, are used first outside the Navy, in order to reach a wider readership.

Comments and criticism are always welcome.

CONTENTS

	PAGE
1. Developing the all Electric Marine Gas Turbine LT I Timbrell RN	1
2. To what Extent can Existing Inert Gas Technology be used to Provide Fire Protection on RN Surface Ships Lt Cdr P Clark nee Mountford RN	11
3. Future Ships Concepts for Repair and Maintenance at Sea A Kimber	25
4. Intelligent Fluid Systems LT Cdr M A Goodall RN	41
5. Naval Marine Engineering – The challenges and Opportunities - A personal perspective Captain J Newell RN Cdr G Little RN	59
6. The Application of Gas Turbine Engines to Small Craft J Buckingham LT Cdr N McCallum RN LT I Timbrell RN	70
7. The Evolutionary Growth of INS Shivaji – Some Notable Landmarks Commodore M.K.Banger VSM... ..	83
8. Implication for a Navy from the Transformation of Naval Procurement and the Use of a Classification Society R.M. Simpson	88
9. M.Sc. Marine Engineering Ship Design Exercise 2006	102
10. Powering the Weapon System: Options arising from ESTD	115
11. Some Classic Vibration and Structural Problems	129
12. Book Reviews	144
The Battleship Bismarck.	144
Phantom Leader – the life and times of a flying sailor.	144
The Ships of Trafalgar. The British, French and Spanish Fleets October 1805.	145
The 44-gun Frigate USS Constitution 1812.	146
Shattered Sword: The Untold Story of the Battle of Midway... ..	146
Teddy Suhren Ace of Aces.	149
Ancient Boats and Ships	150
13. Personal News	151
14. Notices	153
15. Other Abstracts	154