

THE MANAGEMENT OF MARINE ENGINEERING DEVELOPMENT FOR THE FUTURE FLEET

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ABSTRACT

This article describes the conduct of a study into Future (Marine Engineering) Equipment Policy carried out by the author in 1987 under the direction of the Chief Marine Systems Engineer (CMSE). The study sought to establish a long-term development plan which fitted the new procurement policies and financial procedures. The resulting concept—the formulation of a programme of Marine Engineering Development Objectives, linked to the Long Term Costings (LTC), to be taken forward on a year by year basis—was endorsed by the Fleet Effectiveness Committee in September 1987.

Introduction

A system of discipline for selecting marine engineering equipments for development, not tied to a specific ship Staff Target or Requirement, is being introduced. Many who feel that some outside control of what goes on in Bath is long overdue may be surprised to hear that the initiative came from Bath, not London. The purpose of this article is to explain why a change was considered necessary, how it was brought about, what the system of management is, and what it is hoped to achieve.

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Why was a change considered necessary? The Problem

The re-organization of the Ministry of Defence at the beginning of 1985 led to the introduction of new equipment policy and financial procedures applicable to all three services. Up until that time the Navy's bible had been NAVSTARCODE which used to contain special rules for DG Ships. These rules reflected the shorter development timescales and much lower costs of marine compared to weapon equipment development; however, they are no longer extant and DGME must now abide by the same procedures as everyone else. At the same time as this change began to make itself felt, so did the effect of whole ship procurement with much equipment selection being left to the shipbuilder. Finally, financial stringency has become the order of the day. The combined effect of these and other changes have led to a virtual cessation of development projects in the marine engineering field apart from those directly linked to an endorsed ship Staff Target or Requirement. However, if major long term development is not undertaken, there will be a tendency in the mechanical and electrical engineering fields for the Royal Navy to be forced by timescale to accept whatever (commercial) equipment is available. Two effects would then be likely to occur: firstly, a high cost of ownership in through-life support costs caused by the introduction of a plethora of equipments; and secondly, reduced weapon systems effectiveness caused by scant regard of warship priorities (principally signature control). In short the ship Staff Requirement would be unlikely to be met in the most cost-effective manner and in some cases would not be met at all.

How was the change brought about? The Solution

Early in the study that was established to look into the problem, it was concluded that in order to give any proposed solution the necessary operational and financial credibility, it needed to be endorsed by the Fleet Effectiveness Committee (FEC). Three tasks were then set in train: first, a strategy paper aimed at the Controller of the Navy's Management Board which explained the problem and also argued that evolution of the present machinery in both ships and submarines had reached such a limit that it was timely to look at what step improvements (e.g. in signature control, manpower reduction, etc.) could sensibly be achieved; second, the formulation of a programme of work which is divided into groups on the basis of timescale and cost, and is designed to give the reader a clear indication of the intended development programme for the future fleet and the implications of any reduction in funding related to the LTC; third, a paper for the FEC which set out the financial and operational imperatives of the day as they relate to marine engineering, introduced the proposed development programme, and established a system of programme management.

What is the System of Management? The Method

The package of work items, embracing both propulsion and auxiliary machinery, ranges from the titles and scope of Marine Engineering Development Policy Papers, through improvement of particular items of equipment, to the study of promising areas of new technology. It is titled 'Programme of Marine Engineering Development Objectives', the first, current version being related to LTC89. The programme is targeted at new ships and submarines within the timescale of the LTC and at those beyond this timescale for which long-term machinery development is agreed to be necessary. It is not concerned with ships now in service, or with ships which already have

an endorsed Staff Requirement, or with nuclear steam raising plant in submarines. The aim of the programme will be to develop selected new equipments to the extent that they can be specified with confidence during the formulation of a ship Staff Requirement. It is recognized that the equipments selected for development must fit the philosophy of whole ship procurement and be those, along with weapon sensors and systems, where specification in the ship contract is to the benefit of the Royal Navy and the shipbuilders. The programme will be reviewed annually by a one star steering group, chaired by CMSE and including DN Plans, DOR(Sea), DES(N), DGFMP(N), DRP(WE), DSc(Sea), RP(N), DCNA, DGSS and DGSM; the first such review took place in February 1988.

What it is hoped to achieve. The Aim

Staffing of the FEC paper and the programme of Development Objectives has given marine engineering greater visibility than has been the case in recent years. There is now a far wider and greater appreciation of the contribution marine engineering can make to the effectiveness of the ship or submarine as a total weapon system and to the through-life cost of ownership (manpower, fuel, support costs). This is a useful achievement in itself and a necessary pre-requisite to persuading the Steering Group members to support the proposed programme. In broad terms, the intention is that low cost (less than £100K) Objectives should be funded from within the existing provision by adjusting priorities across DGME as necessary, but that Objectives costing more than this figure should be the subject of individual Alternative Assumptions, which, if taken, will mean an increase in DGME's provision for development. Finally it is hoped that, by involving the Defence staff in the decision-making process and giving them a greater understanding of marine engineering, they will support the funding of programmes they have endorsed against arbitrary cuts. Only time will tell if the initiative brings success in this area. Meanwhile CMSE now has an endorsed programme of development work which can be used as the vehicle to ensure that Bath and London move forward together.
