

TYPE 23 SUPPORT

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Introduction

It is well known that the Admiralty Board have directed that everyone concerned with the specification, procurement and support of naval material is to ensure that the claims of cost, availability, and performance are accorded equal emphasis. In order to discharge this responsibility DNOR, through the Type 23 Project ARM committee (for Availability, Reliability and Maintainability), tasked DES(N) to undertake two studies on support aspects. It is no good having comprehensive Operational Requirements and a thorough and versatile design if proper and due recognition is not given to all aspects of support.

The first study was to determine the support policy to maximize ship availability at the minimum through-life cost, and the second to identify the base requirements in terms of manpower, facilities, and organization necessary to provide mission support. At a very early stage it was found that the two studies were inter-related and they were therefore combined. The prime tasks were to:

- (a) Formulate Upkeep Policy.
- (b) Define the base requirements.
- (c) Define the requirements for operating out of area, i.e. for longer intervals between support periods.

The major constraints within which the studies were conducted are:

- (a) The complement is to be no greater than 147.
- (b) The availability/upkeep cycle is to be as defined in the Naval Staff Requirements.
- (c) Only routine servicing of up to one month or 1000 hours periodicity and essential corrective maintenance is to be carried out at sea.
- (d) The remainder of the maintenance, including ship husbandry, is to be carried out by ship's staff with base, dockyard or contractor support as appropriate.

Availability and Upkeep Cycle

The Type 23 frigates are not expected to be as capable of self support as earlier ships. They are planned to undergo, in their base port, a Short Support Period (SSP) after every mission—as shown in FIG. 1. The pattern is then similar to that for other destroyers and frigates, with a Base Maintenance Period (BMP) similar to an AMP. This will amount to more assisted maintenance per year than the others receive. The other major upkeep periods are regular DEDs and a restorative refit later in the vessel's life.

The on-board complement has been reduced to the minimum necessary to meet the fighting and watchkeeping task. A breakdown of the ME, WE, and Supply complements is shown in TABLE I. These are adequate for the

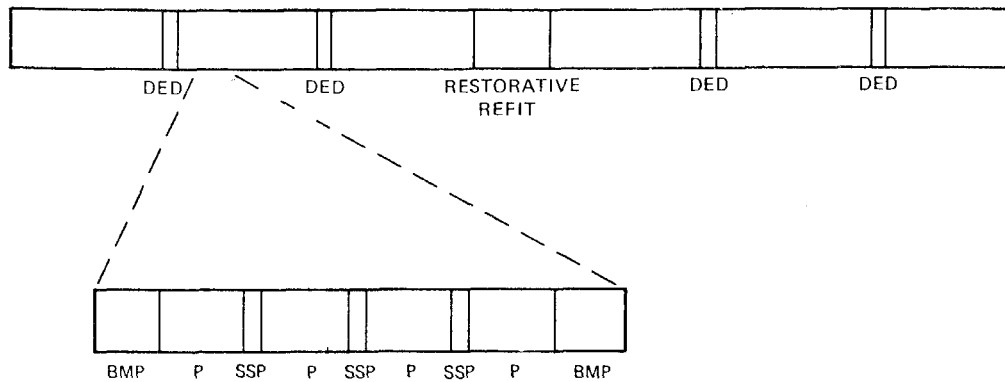


FIG. 1—TYPE 23 AVAILABILITY/UPKEEP CYCLE

DED: Docking and Essential Defects
 BMP: Base Maintenance Period
 SSP: Short Support Period
 P: Patrol

watchkeeping task, and for undertaking the routine servicing plus essential corrective maintenance during a mission. Any work that is not completed during a mission will have to be included in the SSP along with the programmed maintenance and ship's husbandry, to be undertaken by the Fleet Maintenance Base, dockyard or contractor.

TABLE I—Type 23 Engineering and Supply Complement

ME Dept.	WE Dept.	SS Dept.
1 MEO	1 WEO	1 SO
1 CCMEA	1 CCWEA	1 CPOSA
4 CPOMEA	5 CPOWEA	1 LSA
2 POMEA	4 POWEA	1 SA
3 POMEM	2 POWEM	1 POWTR
6 LMEM	6 LWEM	1 LWTR(EOOW)
11 MEM	9 WEM	3 PO(CA/CK/STD)
		2 LH(CK/STD)
		7 AB(CK/STD/CA)
28	28	18

Base Support Unit

The studies investigated the base support requirements and concluded that a Base Support Unit (BSU) would be necessary. The concept of the BSU has been evolved because the unit will be required to undertake more than is currently expected of an FMU. The size of the BSU has been derived from work audits and comparisons with existing ships and their FMU assistance.

The base support unit will be required to:

- Assist with the planned and corrective maintenance.
- Plan the maintenance.
- Hold and manage spares.
- Undertake most of the ship husbandry tasks.
- Augment the ship's company to meet the requirement for out-of-area deployments.
- Provide manpower to supplement ship's staff during maintenance and leave periods.

There will therefore be a requirement for some specialist billets in the Type 23 BSU, requiring some ratings to complete PJTs before joining it. This is a departure from previous practice and adds to the higher training quota. Careful composition of the maintenance teams should develop confidence between BSU and ship's staff, and type drafting will be appropriate.

Because of the greater dependence of the Type 23 on shore support, the resources required by the BSU are necessarily extensive and demanding:

TABLE II—Type 23 Base Support Unit Complement

Officer in charge Deputy		Lieutenant ME/WE Fleet Chief WE/ME	
ME Dept.	WE Dept.	S & S Dept.	General Support & Husbandry
2 CCMEA 17 CPOMEA 4 POMEM 7 LMEM 26 MEM	2 CCWEA 10 CPOWEA 1 CWEM 2 POWEM 4 LWEM 6 WEM	1 POSA 1 SA	2 CPO/PO 12 WEM/MEM 9 S & S 13 AB
56	25	2	36
Total: 121			

- (a) *Manpower.* A breakdown of the BSU complement is shown in TABLE II. The proportion of ME and WE is similar to that of current FMUs, though the numbers are greater. The unusual part of the unit, called 'general support and husbandry', is discussed later.
- (b) *Facilities.* To accommodate the increased manpower an equivalent extension of offices, common facilities, and workshops will be required. Some of the shore-side facilities should be adjacent to the Type 23 berths.
- (c) *Logistics.* Test equipment, stores, ASE, CRETE, and RATs must be readily available to the BSU for the SSPs. This logistic requirement will be much greater than for previous classes of ship.
- (d) *Services.* The Type 23 will require the same basic facilities as any other ship, and they must be available on demand.
- (e) *Berthing.* The long term berthing plan will need to be kept under review to ensure these facilities and services are provided and made available for maintenance periods as the class increases in numbers. As a first step, berths have already been allocated in the 1984 long-term berthing study.
- (f) *Planning.* It is quite clear that with the greater dependence of the Type 23 on base facilities, great care will be required in planning ships' programmes.

General Support

Within the total estimate of BSU manpower, provision for some unconventional aspects of support have been made. These are:

- (a) Manpower for shipkeeping during leave periods.
- (b) Manpower for supplementing fire and emergency parties.

- (c) Manpower to supplement duty rosters in harbour.
- (d) Manpower for 'augmentation' of ships complement, as discussed later. This will come from the maintenance element of the BSU, not the general support group.
- (e) Manpower for stores support.

Ship Husbandry

Reduced manning in existing ships has already highlighted the need for considerable shore support to ensure satisfactory ship husbandry standards. A similar policy will have to be practised for the Type 23. The limited ship's complement will only be able to maintain the basic ship husbandry standards during missions and a sizeable team will be required in support to aid them. However, this will still leave a shortfall of 400 manweeks per year of husbandry effort which will have to be made up by the dockyard or contractor.

Out-of-Area Deployment

The NSR calls for the Type 23 to be 'capable of world-wide deployment' but has restricted both the complement and the logistics to a limited mission time for normal operations. The two major practical consequences of this are:

- (a) A requirement for additional personnel to undertake the maintenance, due to the lack of SSPs while away.
- (b) Additional stores and test equipment will have to be carried in an accompanying RFA.

'Augment'

In order to meet the requirement of such a deployment, provision has been made for augmentation of the complement. This 'augment' has been derived by taking the shortfall in maintenance due to the loss of SSPs on deployment. The complement augment will be drawn from the BSU, except for those elements for operations and aviation.

Storing to achieve Specified Availability

The ship will normally be stored for the specified standard period of operations plus a contingency margin. This requires careful planning for on-board stores. The specified availability targets for weapon and platform assume that the spares are available. The ARM studies being conducted should identify the spares required for repairs that are to be carried out at sea, so that these are carried. Equipment Related Stores Usage Information (ERSUI) is providing a more comprehensive data base for the equipments presently fitted in the Fleet. This data, combined with Sparedex III, should ensure that the Consolidated Allowance List (CAL) is representative of the requirements.

Since the SSPs occur quite frequently, demands for stores will have a greater urgency than for the present Fleet support. Because of the short timescale involved between the end of one SSP and the beginning of the next, the BSU will have to manage this spares provision.

Control of Maintenance

In order to provide the onboard management teams with the maximum opportunity to concentrate on day-to-day problems, the central maintenance plan should be established ashore. OASIS III will be particularly valuable in this area, where the transfer from ship to shore of maintenance data,

condition monitoring, and hours run will be simplified. A complete up-to-date Maintenance Management System (MMS) could then be loaded into the ship's OASIS computer for out-of-area deployment.

The main advantages of managing maintenance ashore will be to:

- (a) Relieve ship's staff of the task.
- (b) Provide the BSU with control of all the resources so that they can manage the task with economy and effectiveness.
- (c) Consequently, give less probability of exceeding maintenance periods, thus ensuring maximum operational time.

Conclusions

The upkeep policy outlined represents a major change from that of previous ships. It has been dictated by:

- (a) The reduced complement.
- (b) The concept of a totally new operating cycle.

It has resulted in the requirement for:

- (a) A Base Support Unit.
- (b) The Short Support Period.
- (c) Complement Augment.
- (d) A change in training and drafting.
- (e) Control ashore of engineering maintenance requirements.
- (f) Control ashore of stores requirements.

Therefore the support of the Type 23 depends on the proper setting up, manning, and management of the Base Support Unit and its logistics arrangements. The Type 23 is not a simple ship; when compared to the Type 22 Batch III it has many similarities but there will be many differences in support.