

SMALL SHIPS' ADMINISTRATION

BY

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One of my responsibilities on the Western Fleet Technical Staff is to inspect technical administration in frigates and destroyers, and I was, therefore, particularly interested in Lieutenant Morrison's article in the *Journal of Naval Engineering*, Volume 17, Number 3, dated June, 1968, and Lieutenant-Commander Bowen's letter in Correspondence of the same issue.

Before the war and right up to the 'fifties', machinery was fairly standard and technical administration was a much simpler task than it is today. It was common practice for an ERA or Stoker PO on being drafted to a ship to commence watchkeeping on his own right away without any double banking. Machinery Pre-Commissioning Courses were unheard of.

The 'fifties', however, brought radical machinery changes into the Fleet, and as the Weapons and Radar equipments became more sophisticated and larger, so the marine engineers were required to design propulsion units that were more efficient and had better power/weight ratios. Diesel propulsion, high pressure and high temperature steam plants, gas turbines, controls, etc., all were introduced in rapid succession. This inevitably complicated life for the engineer officers in the Fleet beyond all recognition to what it was in the 'thirties' and 'forties'.

As if this was not enough, during the same period the Navy became smaller and ship usage steadily increased. Today it is considerably greater than pre-war, and above war-time level. With all these design changes and increased ship usage, it was recognized that if we were going to keep our machinery in an efficient state we would have to improve our organization for maintenance. As a result, the Standard Documentation System for Planned Maintenance was introduced, Fleet Maintenance Units were set up and Books of Reference had to be written to acquaint our technicians with the various complex machinery, systems and equipments. Spare gear could no longer be adequately supplied by dockyards. SPDCs had to be set up, etc., etc. Most of these revolutionary changes occurred within the span of a mere decade.

I have endeavoured to explain briefly the historical background to show how the things described by Lieutenant Morrison came to plague us. While agreeing with most of his criticisms, in this article it is hoped to show that something is being done to remedy the situation.

Before dealing with the points raised in Morrison's article, it is important to comment on technical paperwork in the Fleet generally. Everywhere one hears the familiar cry 'too much paper' (with slight variations) and although

it is the aim of the WFTS to cut down paperwork to the absolute minimum commensurate with efficient administration of the Fleet, is the Marine Engineer Officer's volume of paperwork quite as bad as a lot of people make out? May I dare suggest that if it does nothing else it could provide a useful 'smokescreen' from time to time.

To assess the amount of technical paperwork MEOs have to deal with, a survey was recently carried out in two *Leander* Class frigates in full commission and out of refit. The technical papers coming to the MEO (including those addressed to the Commanding Officer) and those requiring action by him were noted over a three-month period, and the results are listed as follows:

<i>Frigate 'A'</i>	<i>Frigate 'B'</i>
	<i>Correspondence IN</i>
19 MOD(N) letters	8 MOD(N) letters
4 CinC WF letters	3 CinC WF letters
12 other letters	5 other letters
144 S.2022a Defect Acquaints	80 S.2022a Defect Acquaints
—	—
179 Total	96 Total
—	—
	<i>Correspondence OUT</i>
2 MOD(N) letters	1 CinC WF letter
6 CinC WF letters	32 SMA (includes 26 in number
6 SMA (includes 3 in number	S.2022s raised)
S.2022s raised)	8 other letters
7 other letters	
—	—
21 Total	41 Total
—	—

Neglecting S.2022s and S.2022a's, Frigate 'A' received 35 letters and sent out 18. Frigate 'B' received 16 letters and sent out 15. Frigate 'A' also rendered 4 technical returns during this period and Frigate 'B' 3. It is appreciated that the MEO would be required to see and comment on a number of Ship's Office packs on non-technical subjects. The difference in numbers of S.2022a's received is due to the fact that Frigate 'A' is a Y.136 *Leander* and Frigate 'B' a Y.100.

It can readily be seen that approximately 80 per cent of all technical paper going to the MEO is from SMA in the form of S.2022a Defect Acquaints. The MEO has to take a decision either to raise a job card or to pass the S.2022a for information and file away. Most come under the latter category and do not impose a serious administrative load on the department. S.2022a Defect Acquaint forms are issued to equipment holders only, and therefore each form, although perhaps not of immediate interest to individual MEOs, does provide valuable user experience in other ships.

Standards of dealing with the paper and technical administration generally, vary from ship to ship. As a result, a great deal more attention is now being paid to the introduction of standard methods of administration. The first real steps towards this was the Ship Management Course at Manadon, and the 'Guidance Notes on the Practical Aspects of Management of Marine Engineering Departments of Destroyers and Frigates' prepared by Flag Officer Sea Training and sent out to all frigates and destroyers by the Fleet Marine Engineer Officer. As a result of this, and advice from WFTS to ships refitting followed by Post Refit Inspections, standardization is being achieved. We are improving our methods and are certainly better than we used to be.

As stated previously, Lieutenant Morrison's criticisms and the problems facing him in his ship are generally recognized and it is important that the current thoughts on these subjects be publicized for the benefit of all concerned.

Master Record

Some time ago the Captain, SMA, started a work-study investigation into Master Records and the result of this was a recommendation that the record should be abandoned altogether in favour of an Equipment Pack System. A trial is already in hand for this recommendation to be implemented as a pilot scheme in two new Y.160 *Leanders*. These ships are not being supplied with Master Records but will have an equipment filing system consisting of one properly designed vinyl file for each equipment/system. These files would contain a pocket for the correspondence pack and a number of polythene envelopes containing 'Diary of Important Events', 'Modification State', 'Dimensional Inspection Chart', etc. If the pilot scheme proves successful it is hoped that this system can be universally introduced throughout the Fleet. Master Records cost £25 each without the forms, and as each ship is supplied with five (ME, Hull and 3 WE), equipment pack systems in lieu would also be a much cheaper proposition.

Correspondence

It is WFTS and FOST policy that the MEOs in frigates and destroyers should keep all correspondence on ME matters, whether addressed to the Commanding Officer or not, in his own equipment pack system. The system should be indexed by planned maintenance 'M' numbers and is available in the Technical Office when required. Most ships now have this, and if they haven't, they are advised to do so when they commence refit and are visited by WFTS. In ships where the correspondence is split into the MEO's and Ship's Office files, a person seeking information is required to go to two sources, neither of which independently gives a complete picture. In fact, the system should be worked exactly as stated by Lieutenant Commander Bowen in his follow-up letter on 'A Small Ship's Administration'—JNE Volume 17, Number 3, of June 1968, page 516. DCI 40/68 introduced the Naval Pack List numbers and although the subjects listed for the technical departments is not comprehensive enough, it was intended that sub-division would be required (by 'M' numbers), and to come within the letter of the law the Naval Pack List number should be inserted before the 'M' number on each pack, e.g., 412/M.111b. The 'No Master Record Trial' is merely a refinement of the present policy, the MEO's equipment correspondence pack being inserted in the pocket provided in the vinyl file.

Ship's Book

This is now generally considered to be an unnecessary and outdated document from the technical aspect. It is another source of technical information, the contents of which could well be absorbed into the technical pack system. It is hoped to make recommendations on this if the 'No Master Record Trial' proves successful.

Master Log

If properly compiled this is an excellent management tool. By making a close daily scrutiny of the various entries the MEO can see how the departmental organization is working, e.g., evaporator outputs, boiler water readings, Diesel generator lubricating oil tests, fuel and lubricating oil consumptions and quantities remaining, etc., etc. If the Master Record eventually disappears the logistic pages in the Master Log will require slight amendment to cater for cumulative totals.

E2 System

This is basically a very good system but a number of criticisms have arisen as a result of WFTS ship inspections. Quite a lot of Senior Rates responsible for running E2 systems do not fully understand it. The Servicing Plans do not stand up to wear and tear that they are subjected to in machinery compartments, and the information content is sometimes inadequate, without specific details such as the number of lubrication points and where they are. Servicing Plans when issued by SMA are protected by plastic sleeves and bound in stiff ring-backed files by compartments. Some difficulty has been experienced in the past in providing ships with replacement sleeves due to supply shortage, but this has now been overcome. The identification of lubrication points must be done at present by the ships themselves. The biggest single complaint from the Fleet concerning E2 is the volume of schedule amendments they receive. It is agreed that the present system of issuing annual amendments can cause disruption of the planning system at inopportune moments, such as Work Up or immediately prior to refit. SMA therefore intend in future to issue non-urgent amendments at 4-monthly intervals, the smaller quantity received making for easier assimilation into the system. Urgent amendments will continue to be raised as at present, immediately the need arises. It is of interest to note that by far the greater number of S.2021 Amendment to Maintenance Schedule forms received by SMA propose either corrections or additions to the Schedules; few propose extension of periodicities with consequent reduction in maintenance effort, a far greater reward for the chore of incorporating amendments.

Master Index and Ship Equipment List

A Master Index for technical information in ships is not provided at the moment. The SMA Ship Equipment List was intended to fulfil this function by listing all equipments fitted in the department and identifying them by maintenance schedule number. The SEL can be used as a Master Index provided all other information sources are indexed by maintenance schedule numbers. However, the format of the SEL is not considered ideal and the two *Leanders* not being provided with Master Records are being supplied with a 'ready ref.' type binder in lieu of an SEL, and this would be a true Master Index for all points raised in Lieutenant Morrison's article. It will not only list and identify the equipments fitted, but also list the relevant BRs, PILs, etc.

Drawings

These are in book form in Type 81 frigates and are generally not considered to be particularly ideal. Most ships of the class have accumulated a vast number of extra 'as fitted' drawings and there is an acute stowage problem. As pointed out by Lieutenant-Commander Bowen, 'micro-film drawings' appear to be the real answer to this problem. H.M.S. *London* is currently conducting a trial of a micro-film system and has a printer/viewer and micro-film library covering all 'as fitted' drawings. Any drawing can be selected for viewing and, if required, a disposable copy can be produced in a matter of seconds. The shortcomings revealed so far highlights the need for the films to be produced from better quality drawings, and the development of an improved index system. Notwithstanding these points, from the user point of view the system is more than satisfactory and has considerable potential for further improvement.

Defect Lists

The unsatisfactory defect list method is felt by the dockyards as well as the Fleet, and a joint Working Party has been set up to find a mutually acceptable solution which will fit in with the other modern management systems which are being introduced.

Handbooks and BRs

These are constantly being referred to by ships staffs and it is important that they are kept fully amended by the MEO's writer. If the ship's internal BR organization is efficient, there should be no real problem, provided the BRs held in the department coincide with the BR Officer's records, and that his records in turn agree with what the ship is listed as having. Assuming this is functioning correctly and the amendments are being inserted, the other ship administrative requirement is to see that they are properly indexed. This can be done by maintenance schedule number or by the allocation of a simple numerical index number, e.g., 1, 2, 3, etc., and posting an index alongside the stowage. Of the two systems the latter is simpler and preferred to the former. The main disadvantage to the former is, as Lieutenant Commander Bowen points out in his letter, not all BRs (or PILs) can be slotted into a maintenance schedule number.

Spare Gear

Criticisms of spare gear arrangements when under the charge of the MEO are well known and rationalization was introduced to overcome them. Rationalization of spare gear and placing it under the charge of the Supply Officer has been MOD(N) policy for some years. The complete change-over from the old system is obviously long term, but all new ships are provided with rationalized outfits and long refitters change over during the course of the refit. This system relieves the MEO from accounting, storage and supply responsibilities. S.151b ledgers are made out in Adrefno. order for the Supply Officer by SPDC. Although there have been a great number of teething troubles, mostly due to late supply of spares and PILs, the rationalized system is considered to be infinitely superior to the system it replaced. The prime concern of the ME Department, however, must be 100 percent PIL coverage so that all spare gear items can be identified by Adrefno. Inspections reveal that, provided an Adrefno is quoted and that the item is an 'on-board' spare, the efficient Naval Stores system of accounting and stowage will produce the item required in seconds. Can all MEOs who have control of their own spares say the same in all sincerity? PIL coverage is admittedly not good but is improving all the time and in most ships fitted with rationalized spares the outstanding PILs are considerably less than ten per cent of the total. The Bath Spare Gear Section are currently producing approximately 100 PILs a month, but priority has to be given to Polaris.

Engine-Room Registers

As a result of recommendations made by FOST, rough engine-room registers have been drawn up on a class basis for frigates and destroyers, and are now in the course of printing. When available these will promote standardization of recording which at present tends to vary quite considerably from ship to ship.

Night Rounds Reports

These have been drawn up on a class basis and, like the engine-room registers, will shortly be available as 'S' Forms.

Watchbills

These have also been drawn up on a class basis by FOST, and are issued by WFTS to all frigates and destroyers during refits. In the past MEOs and ChM(E)s have organized their departments in a variety of ways, but experience at Portland has revealed the need for standard methods. This information is given to ships refitting and is checked during Work Up.

Conclusions

Ships technical departments over the past ten years or so have had to readjust rapidly to the advanced technological changes which modern warfare demands. With more complex machinery and much higher ship usage we can no longer get by on the old simple methods of administration, which of course worked admirably in their day. Efficient management, planned maintenance, BRs, rationalized spare gear, technical records, information feed-back to the design authorities, all play an important role in the modern Fleet. Having gained experience in all these things we now require to streamline our methods and, as outlined in this article, we are slowly moving in the right direction.
