NAVAL MANPOWER UTILIZATION UNIT

BY

CAPTAIN R. E. ROE, C.B.E., R.N.

As most of the Naval Manpower Utilization Unit's work is at the man/machine interface, the history and present activities of the Unit will be of interest.

In 1967, the Admiralty Board were convinced that a pre-requisite for improving the use of manpower in the Fleet was an analysis in depth of all the work that had to be done in ships. Once the results of such an analysis were available, giving data on the work involved, it would be possible to structure the manning of ships in a manner designed to meet the defined tasks. It was

anticipated that this would enable ships to be managed more effectively, thereby reducing the number of men in the complement and, it was hoped, give greater job satisfaction.

Having accepted the above in principle the Board decided to apply it to one ship and chose a *Leander* Class frigate because of the number of ships in that class. As a result the Naval Manpower Utilization Unit (NMUU) was set up:

(*a*) To analyse and record all the work of a *Leander* Class frigate (H.M.S. *Naiad*).

(*b*) Without being inhibited by present structure or inter-departmental lines of demarcation, to propose a complement.

(*c*) To define a management structure to run the ship using the complement proposed in (*b*) to meet the defined tasks.

(*d*) To indoctrinate and train a ship's company to run their ship on the proposed lines.

(*e*) To assist ship's staff in running their ship on the proposed lines for a period of perhaps twelve months and to monitor this trial period.

(*f*) As a result, to amend the proposals as necessary and produce guide lines applicable to all ships of the class.

It was expected that the principles and lessons learnt from this work and the practical trial could then be widely applied throughout the Fleet with benefit to the Service—not least in the prize of a substantial reduction in ships' complements.

By late 1969 it had become clear that these wide-ranging and imaginative aims, although absolutely sound in principle, could not be attained within a reasonable time scale for a number of practical reasons, the main ones being:

(*a*) That the extent of the task had been underestimated. Experience has shown that the first step alone, namely the analysis of the work of the ship, would take of the order of 300–400 officer/senior rating man-years and this effort simply could not be provided.

(*b*) With the benefit of hindsight (and perhaps this should have been foreseen) the Service is not attuned to digesting too many revolutionary concepts at one bite. The only practical way of making improvements in the use of men is as an evolutionary process; feeding various changes into ships as they come to hand, proving their effectiveness and then moving on to wider application.

When the wide-ranging concept was abandoned, the NMUU concentrated on the task which was within their capability and which was a pre-requisite of all else—namely, the analysis of the work in a *Leander*. At the same time, the Western Fleet Management Team was set up with the aim of improving the management of ships; one of the tools towards such improvement was the data on work analysis being produced by NMUU. The result of these changes was that machinery had thereby been established to make evolutionary improvements in the employment of men at sea.

At about this same time the need for data on the job or tasks of officers and ratings was stimulated from a variety of sources, in particular the requirement to be more objective in naval training and the possibility of a practical move towards the maintainer/user concept. It was natural that those working on these projects should use the data on the analysis of work in a *Leander* that was being produced by NMUU. From these beginnings stemmed the emergence of the NMUU as the 'naval job/task analysis unit', although not so named.

It is of interest that this was the second occasion within a decade that the need for a job/task analysis unit had arisen; in 1960 a unit with similar aims had been established but suffered demise during the manpower crisis of 1962/63.

Present Position

In the capacity of naval job analysis unit the work divides into:

(*a*) Detailed analyses of specific tasks

(*b*) Broader analyses of the job of specified ratings.

These are discussed in greater detail below.

Task Analyses

Some two-thirds of the Unit's effort is devoted to the production of job information cards covering items in the Planned Maintenance Schedule and the cleaning/painting tasks of *Leander* frigates; the former have been incorporated in a modified E2 system, the latter in the X1 management system devised by the Fleet Staff. This use of the NMUU's product for improvement in the use of manpower in the Fleet is a practical example of the evolutionary process which now exists for increased efficiency. The process requires and receives the close co-operation of those concerned, namely the ships, Fleet Staff, SMA and NMUU.

The cleaning/painting JICs were completed before November, 1969, and are in use in the Fleet. JICs have now been produced for more than 30 per cent of the planned maintenance schedules of *Leanders* and all *Leander* E2 systems have been or are being modified to incorporate JICs. Thirteen ships of the class have JICs installed and most of the remaining operational ships of this class will be fitted out by the end of 1972.

Some ships have now been using JICs for a year or more and there is evidence that the JIC:

(*a*) Improves management in that it shows on one piece of paper all the requirements of the task, e.g., safety requirements, tools, stores, tolerances, job method, etc.

(*b*) Improves job satisfaction by allowing more junior ratings to be employed as mechanics, thereby releasing their seniors for managerial or diagnostic work.

As well as these advantages the critical examination of the Planned Maintenance Schedule, necessitated by JIC writing, has, in conjunction with the SMA, resulted in a very significant reduction in the work content of the schedule.

In the E2 system, modified to accept JICs, a feedback system is incorporated providing information to the SMA on the amount of work done on preventive maintenance; this is the first time that such information has been available and the results will be analysed. From a manpower viewpoint this will show 'who does what' in planned maintenance in *Leander* frigates—a very useful contribution to job analysis.

When the SMA's returns or job analysis provides information on 'who does what', the JIC can give to the trainer useful information on what to teach each category of man. JICs are already being used in this respect in some schools, notably H.M.S. *Collingwood.*

Another form of detailed task analysis is the Operational Sequence Diagram showing at a glance operating drills and how each man is employed at any given moment. This method has been successfully used in analysing A/S weapon drills and has led to reductions in crews; H.M.S. *Vernon*, in particular, has adopted the technique to replace the traditional drill book.

Job Analysis

As indicated earlier, a complete task analysis of all work in a reasonable time scale is impracticable; while such task analyses are used as a contribution

towards analysing the whole job, some speedier, if less detailed, method must be devised.

This can be achieved by taking a cross-section of those under analysis and finding out in detail what their job is at sea. As a result it is possible to produce a job specification for the man to do the present job; no attempt is made to propose a new approach to the job. These job specifications give the trainers a firm base from which to initiate objective training syllabuses. Job analyses:

(*a*) Have been carried out for
- (*i*) All communications ratings including WRNS
- (*ii*) Steward ratings including WRNS
- (*iii*) Stores accountant ratings including WRNS
- (*iv*) Cook ratings including WRNS
- (*v*) Caterers
- (*vi*) Seamanship and general duties of seamen petty officers and more junior ratings
- (*vii*) Semi-skilled task of ratings in the maintenance of A/S and surface weapons
- (*viii*) MEMs 1 and 2 (non-AMC) in surface ships;

(*b*) Are in hand for
- (*i*) LMEMs in surface ships
- (*ii*) LCEMs and LOEMs in surface ships
- (*iii*) The tasks of surface weapons operators;

(*c*) Are proposed for the immediate future for
- (*i*) The seamanship task of CPO/FCPO/junior officer
- (*ii*) SQ task of RPs and sonar operators
- (*iii*) ME ratings in 'O' and 'P' Class submarines
- (*iv*) WRNS—regulating, quarters and steward (G).

The most important product of these analyses is the job specification; when this has been considered (and possibly amended) by the sponsor of the study and the MOD(N), it will be issued as approved doctrine. Although primarily aimed at providing a basis for objective training clearly an approved job specification would be of wider use; for instance, in the Fleet, in manpower structure planning, entry standards and job evaluation.

Conclusion

The Board were correct in their supposition in 1967 that analysis of all work was a pre-requisite to significant improvement in our employment of men; it is equally a pre-requisite of efficient or objective training. We at the NMUU, some three dozen of us, believe we are making significant contribution to this aim.