

GUARD AND BAND

(Arcadian Photos, Plymouth)

THE TRAINING OF APPRENTICES IN H.M.S. 'FISGARD'

BY

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H.M.S. *Fisgard* is the Part I Training Establishment for all artificer apprentices ; its duty is to provide apprentices, ready in all respects for full scale technical training, to the three Part II Establishments, H.M. Ships *Caledonia*, *Collingwood* and *Condor*. H.M.S. *Fisgard* may, therefore, be regarded as a preparatory school for apprentices, whose age, on entry, is between 15 years and 16 years 8 months.

About 210 new boys, mostly straight from school, arrive each term and remain for four terms—except for those few who are put back a term due to sickness or lack of progress. Thus only a very small number reach the age of 18 before the end of their Part I training ; hence *Fisgard* apprentices are treated as boys in so far as discipline and punishments are concerned. Of the total entry, a typical cross-section shows that 50 per cent come from grammar schools and 50 per cent from technical, private, nautical or secondary modern schools.

Advantages of the Series Training System

Under the 'series training' system, all apprentices do the same basic training for the first year; they are allocated to branches at the end of their third term. The greatest advantage of this is that competitive recruiting amongst the technical departments is eliminated. Another advantage is that the early part of the artificer's training, which consists largely of turning a schoolboy into a naval rating, is carried out in one place; the Part II Training Establishment is thus left free to concentrate mainly upon his training in technical subjects. H.M.S. *Fisgard*, in fact, passes on to the Part II Training Establishments apprentices who have reached a certain minimum standard both in skill of hand and in certain scholastic subjects.

The Raw Material

Boys arrive in H.M.S. *Fisgard* with widely different school backgrounds; in many cases they have severe shortcomings in one or more subjects. It is one of *Fisgard's* main duties to bring all the boys up to the point where they can begin to absorb purely technical instruction.

At the present time poor scholastic background accounts for by far the largest number of discharges from the Part I Establishment. In many cases this poor background is difficult to overcome because the boys have never been taught to work. The bright hard-working grammar schoolboy of to-day gains a state scholarship to a university. Even so, some very good material comes to *Fisgard* and the top apprentices reach a high standard.

Aim of Part I Training

The workshop curriculum is designed to cover three requirements; to help in sorting apprentices into their most suitable branches; to give all apprentices a broad view of, and some slight skill in, a wide field of workshop practice, and to lay the foundation for the real trade training in the Part II Establishments. Thus the training is kept as broad as possible consistent with reaching the educational and skill-of-hand standards required by the Part II Establishments.

The breadth of the workshop instruction comes in for some criticism, mainly from technical officers who have little to do with training. Apart from the manifest advantage of all artificers being able to lend a hand outside the strict confines of their trade in an emergency, a sounder man is produced by laying a broad foundation up to the age of about 17½.

In short, the apprentice has to be educated; he must attain a high degree of skill and a pride in workmanship, and also he must develop his character and powers of leadership. In H.M.S. *Fisgard* these three objects are regarded as the sides of an equilateral triangle that must be developed uniformly and simultaneously as a whole to make the complete artificer.

METHODS USED IN PART I TRAINING

The Divisional System

On entry most boys are typical of their age group and represent a fair cross-section of the youth of the country. The first task is to foster in the apprentice a sense of a united effort by all for the common good. This sense is generally lacking, and divisional activities help considerably in the development of this side of a boy's character.

The Establishment is divided into eight divisions, four on the east side and four on the west side. All games and other similar competitive activities are organized on an inter-divisional basis so that the apprentice is encouraged to represent his division and to contribute what he can to the progress of the division as a whole.

Under this 'house' system each division has a technical officer as divisional officer, two instructor officers as divisional tutors, and a divisional chief or petty officer. At the moment, a Lieutenant-Commander (L) is the senior divisional officer, whilst a Lieutenant (L), three Lieutenants (E), a Lieutenant (E) (O/E), a Lieutenant (E) (A/E) and a Shipwright Lieutenant are the remaining divisional officers. It is the responsibility of these divisional officers, with the assistance of divisional tutors, to watch the progress of each individual in his division and to confer with the other training officers over any apprentice who is particularly weak in any aspect of the training. For his own particular division he watches the development of the three sides of the triangle and encourages extra efforts wherever necessary.

Parade Training

Parade training plays an important part in the divisional side of Part I training though relatively little time can be devoted to it after the first month.

All new entries wear gaiters so that they can readily be recognized at all times and corrected with due allowances made, until they reach, usually four weeks after entry, the satisfactory standard of the new entry parade. The first step in changing the civilian schoolboy into an accepted member of a naval community is thus achieved.

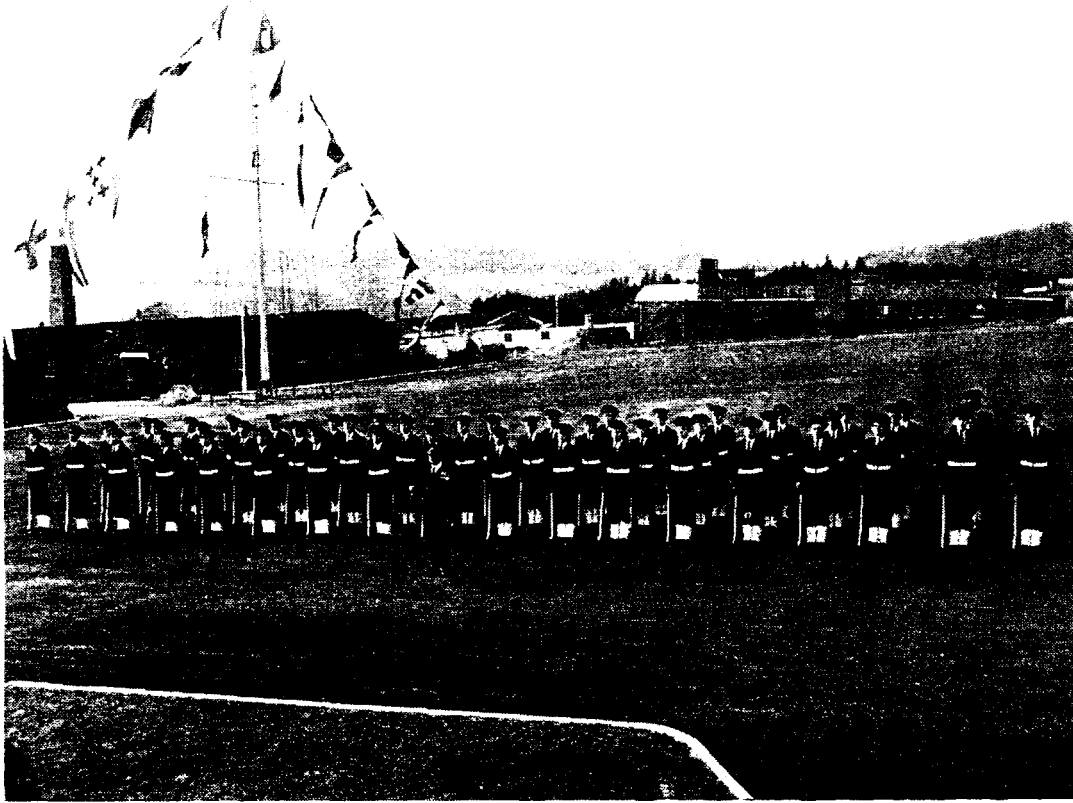
After the first month, parade ground instruction is confined to 45 minutes each week. This is consolidated by full divisions every Sunday with each division in turn providing a ceremonial guard. Physical training improves the boy's general bearing and deportment. Finally, to encourage still further the sense of working for the common good, the normal establishment duties are also run on the divisional basis. In all this the divisional officer watches the progress of the trainee and for any signs of the development of potential powers of leadership.

Local Defence

H.M.S. *Fisgard* provides a battalion for the Cornwall group of the Plymouth Local Defence organization. Under a Battalion Commander each division forms a company with the divisional officer as company commander and the divisional tutors as platoon commanders. The apprentices are instructed in fieldcraft which they put into practice at regular intervals. They receive instruction in infantry arms and are encouraged to become proficient in the handling of weapons. An inter-divisional rifle shooting championship once again fosters the divisional spirit in this side of the training, and teams are entered in local competitions.

Petty Officer and Leading Apprentices

As the apprentice spends four terms at H.M.S. *Fisgard*, the senior or fourth-term apprentices of each division provide a divisional Chief Petty Officer Apprentice and three Petty Officer Apprentices, while the third-term apprentices provide a number of Leading Apprentices. These apprentices, selected for their powers of leadership, are given a certain amount of responsibility and compensating minor privileges; they carry out their duties with varying degrees of



GUARD TRAINING

(Arcadian Photos, Plymouth)

capability. As the entry age is $15-16\frac{2}{3}$ and the length of each term is four months, the age of these senior apprentices is rarely greater than $17\frac{1}{2}$. There is thus not a large difference in age between the various classes; hence the responsibility that can be accepted by the Chief and Petty Officer Apprentices is somewhat limited. In exceptional cases it is possible to find a fourth-term apprentice younger than a first-term boy!

Educational Training

Early in the new entry period the apprentices are given an examination which consists of a mathematics paper and a technical paper. On the results of this examination, each apprentice is graded, for school purposes only, into one of four grades. For other parts of his training he attends in his term and division.

In school he is taught, so far as is possible with a graded class, by his divisional tutor; otherwise the divisional tutor watches the educational progress of all members of his division. Should an apprentice show signs of weakness in school subjects the divisional tutor arranges extra instruction as necessary and keeps the divisional officer informed of the apprentice's progress.

Subjects taught are mathematics, mechanics, science, electricity and English; the work increases in scope and standard with the term, and, as far as is possible, is allied to his training in the workshops. In addition, an outside lecturer talks to the senior term once per week on subjects of current interest. All apprentices, irrespective of branch, cover the same syllabus; fourth-term electrical apprentices, however, in addition to the normal instruction, have $6\frac{1}{2}$ hours per week extra instruction in electricity, part of which is spent in the electrical laboratory.

Throughout each of the four terms the time allocated to school instruction is 10-11 hours per week. This is done mainly in the forenoons, but each class spends one evening each week in school.

School Examinations

There is no major examination at the end of the first term ; instead, tests are given by the tutors so that weaker apprentices can be singled out at an early stage.

The first major examination is at the end of the second term ; this is a local examination set and marked by the instructor officers. As a result of this examination an apprentice can be up-graded or down-graded as necessary within his term and a general indication of progress is obtained. Those who fail badly may be back-classed. These results are incorporated in the personal docket of each apprentice, together with termly reports by his divisional officer, tutor and workshop officer. A home report by each of the above officers, together with remarks from the Captain and Training Commander is sent to the parents of apprentices so that they may learn how their son is progressing in his training and, which is also very important, may see that a personal interest is taken by the Navy in their son's welfare.

The second examination, also a locally set and marked one, is held at the end of the third term. A further report is submitted in the personal record of the apprentice.

Finally, the Admiralty Examination, Part I, is held at the end of the fourth term. This consists of four technical papers and an English paper. A home report is rendered for this examination. In all examinations a failure can mean that the apprentice, if he is likely to benefit from an extra term's work, can be put back one term, or, alternatively, given extra study in his weak subject or subjects. In some cases both are necessary.

Laboratory Work

As far as possible, practical demonstrations in physical subjects and in mechanics are carried out in the demonstration laboratory by an instructor officer borne for this purpose. The demonstrations are designed to illustrate the theory taught in the classroom and to encourage a technical approach to the subjects. As well as the fourth term electrical artificer apprentices, all apprentices make use of an electrical laboratory for practical experiments in electricity.

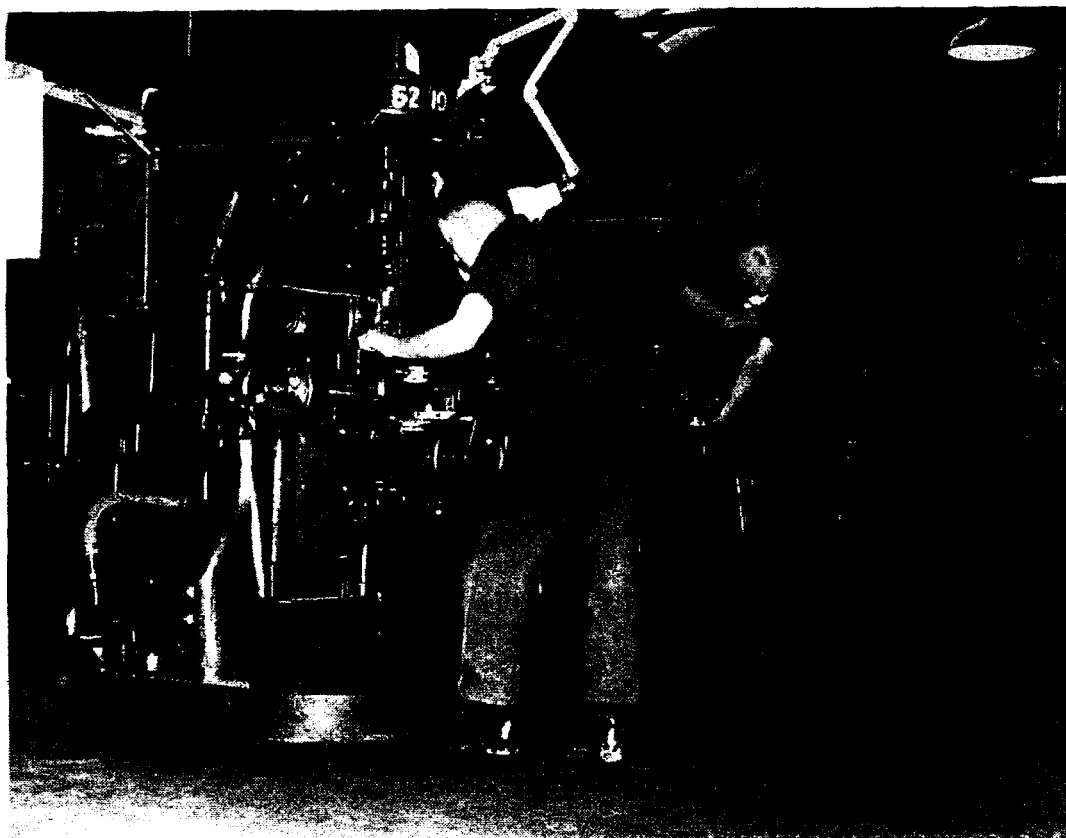
Other Examinations

Tuition in preparation for the following examinations is given to those interested, on one evening per week :—

- (a) Royal Naval College, Dartmouth, 16 year-old entry.
- (b) The Special Entry Examination.

Some limited success is usually obtained in each of the above examinations. In addition to these competitive methods of entry into the R.N. College, Dartmouth, it should be mentioned that every apprentice obtaining a first class pass, 75 per cent or over, in his Admiralty, Part I, examination, may appear before the Preliminary Selection Board as a candidate for a direct entry cadetship.

- (c) General Certificate of Education (University of Cambridge, Local Examinations Syndicate). This examination is, incidentally, an essential qualification for Special Entry. The ability to take this examination in *Fisgard* has considerable recruiting value with headmasters.



PART OF THE MILLING BAY

School Staff

To carry out its school instructional routine, the school staff consists of an Instructor Commander, an Instructor Lieutenant Commander for administrative duties, 16 instructor officers as lecturers (and divisional tutors) and an instructor officer as a Demonstration Officer.

Religious and Moral Training

Though hardly a school subject, the instructional programme includes religious instruction for $\frac{3}{4}$ hour per week, given by chaplains of the respective denominations to each of their apprentices. The chaplains include in this time the instruction in, and discussion of, the Faith, and endeavour to make some headway in the moral development of the adolescent mind. In addition they try to keep a close liaison with the apprentice's home parish and by a card index system effect an introduction to the chaplains of the Part II Establishments.

Workshop Training

The workshop syllabus has been designed to give an apprentice, before he is finally allocated a particular branch, as much experience as possible in the various trades allied to the five different artificer branches. This enables the individual to decide which type of work best suits him, and his results are available to the Allocating Officer who will then, in doubtful cases, be able to allocate the most suitable branch. It also has the advantage of giving every apprentice a very brief course in trades other than those he will meet in his future branch and thus assists in making him a more versatile artificer.

Throughout the syllabus the exercises and test jobs are designed, as far as is possible, to do away with a great deal of the hard and unnecessary drudgery which was the hall-mark of many of the jobs of the earlier days, e.g. the long double hexagon. The emphasis now is on several small jobs, rather than a few large ones, and it is considered that this contributes to maintaining interest and keenness—twin essentials in any system of training—and towards fostering in the mind of the modern boy a more correct attitude towards working with his hands.

First Term Workshop Training

During their first term in H.M.S. *Fisgard*, all apprentices work mainly in wood. This has given rise to some controversy. It is argued that in an already overcrowded syllabus it is inexcusable to waste the time of the future E.A. or O.A., by making him work in wood. It must be remembered, however, that very few, if any, boys have had any serious pre-entry training in the use of their hands and it is considered that woodwork is the quickest and safest method of teaching boys to handle tools and of developing in them a sense of workshop discipline and pride of achievement. Much careful thought was given to this part of the syllabus which is by no means unique to *Fisgard*.

The first two weeks of instruction in this term are devoted solely to planing and sawing exercises : the remaining eight weeks' woodwork instruction are spent on the methods of securing and fastening wood surfaces. Besides copious exercises on the cutting of joints, articles made include a small panelled door, a dovetailed drawer, a frame with mesh grating and a tool box which is subsequently used by the apprentice concerned for storing his tools. Each apprentice also has a week's instruction in drilling and a week on the marking-off table during this term.

Second Term Workshop Training

During the second term the apprentice spends the majority of his workshop time in the fitting shop, working at the bench to develop his skill in the use of hammer and chisels, files, the square, calipers and precision rule.

In this term thirteen weeks are spent at the fitting bench, and one at drilling. After filing a mild steel block to given dimensions, and fitting another one to an aluminium plate, articles made include a male and female limit gauge, tool-maker's clamps, and double-ended spanners of various sizes. The test job done in this term is usually a block and plate cut to very fine limits.

Third Term Workshop Training

Third term work consists of short courses in coppersmithing, sheet-metal work, welding, engine-smithing and toolroom practice, and a day is spent in the foundry where the apprentices are shown how castings are produced. There is time for each apprentice to ram up a simple pattern, cast it, and to see the final result.

In the toolroom, the apprentices learn to use a micrometer and opportunity is afforded each apprentice to establish his error in using calipers and steel rule. Many engineer officers will be surprised to learn that the average degree of accuracy attained by an apprentice with calipers and rule is of the order of plus or minus $\cdot 004$ in by the end of the second term and plus or minus $\cdot 002$ in by the end of the fourth term of training.

Normally the workshop term is divided as follows :—

Coppersmithing	..	..	..	5 weeks.
Sheet-metal work	..	..	..	2½ weeks.
Engine-smithing	..	..	..	2½ weeks.
Welding	..	..	..	2 weeks.
Toolroom	..	..	..	2 weeks.

The jobs done on each course are appropriate to the particular trade.

Fourth Term Workshop Training

Since branch allocation takes place towards the end of the third term, during the fourth term the work has a definite bias towards each of the particular branches. The E.R.A.s, O.A.s and E.A.s spend their time in the machine shops ; the Air Artificers do further advanced fitting and light sheet-metal work and the Shipwrights do heavier sheet-metal work. Some of the E.A.s' workshop time is taken up in the electrical laboratory and they also do a week's course in advanced soldering practice.

The time is allotted as follows :—

E.R.A., O.A. and E.A. apprentices :—

Milling	..	..	..	3 weeks.
Fitting	..	..	..	2 weeks.
Turning	..	..	..	9 weeks.

Air apprentices :—

Turning	..	..	..	1 week.
Fitting	..	..	..	6 weeks.
Sheet-metal work	7 weeks.

Shipwright apprentices :—

Light plate work	14 weeks.
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Throughout each of the four terms, lectures, instructions and demonstrations are given by the instructors to cover all phases of workshop training. Films are shown where applicable and correlated with the lectures. One evening a fortnight is devoted to workshop practice instruction and to writing up note books.

Workshop Personnel

Under the Training Commander, a Commander (E), who is responsible for two sides of the 'training triangle,' the Senior Engineer, a Lieutenant Commander (E), is responsible for the overall organization of the workshops and instructors, and for the maintenance and replacement of workshop buildings and machinery. He is assisted by three workshop officers and by a civilian foreman who is responsible for the welfare and discipline of all civilian instructors.

Since all the apprentices, 840 in number, may be in the various workshops at the same time, the workshops are necessarily large and a large staff is required for instructional purposes. For efficient instruction, workshop classes are kept, as far as possible, to an average of twelve apprentices per instructor. At the moment there are 75 instructors of whom only 18 are active service ratings ; the remaining 57 being either civilians or pensioners. In addition, there are five leading instructors for supervision in the various workshops and one instructor who marks all fitting and turning work and the test jobs—a particularly full time occupation.

Extraneous Activities

Into this group we can classify those miscellaneous activities which assist in the development of one or more of the sides of the triangle of progress. They, too, can be classified into divisional, school and technical though, in many cases, the sub-division is not clearly defined. Every apprentice has one organized recreation afternoon, one divisional afternoon in which his divisional officer has a free hand, and one evening free after tea each week.

Sports and Games

Sports and games in H.M.S. *Fisgard* are keenly competitive and, in addition to individual trophies, the 'Cock' is awarded to the division with the largest all-round points score. The 'Cock' competition runs throughout the term and each division has to field 90 per cent of its strength in different teams on its weekly recreation afternoon. But participation in competitions for the various cups is not limited to divisional games. As many activities as possible are run to enable the not-so-good apprentice to 'have a go' at one or more games. These games include cricket, tennis, squash, soft-ball, athletics, rugger, soccer, hockey, basket ball, cross-country running and commando courses. An apprentice's greatest achievement is to be selected to play for the ship and thus to win further honours for all by the efforts of the few.

In addition to the sports listed above, all of which are carried out in the afternoons, the apprentices are doing much of the preliminary work on the building of an 'open-air' swimming bath in the Establishment. At present the only swimming bath is a double static water tank three feet deep.

Interest is consolidated by a weekly broadcast in the form of a 'Sports Report'; in this, forthcoming features are discussed, past games analysed, quizzes conducted and members of the various teams encouraged to talk about their matches. This very popular item is broadcast over the Tannoy system under the guidance of an instructor officer.

Indoor sports are not neglected: chess and table tennis are among the games that are played in the Establishment and representative matches are played against local clubs.

In addition to team games, sailing, pulling and shooting are organized—also on an inter-divisional basis. A large number of apprentices get some knowledge of sailing and a few become quite proficient coxswains. The windfall yacht, *Planet*, usually sailed by two officers and a crew of apprentices, is very active during the summer and stimulates a keen interest in both racing and cruising.

Boxing is a more specialized activity, but large numbers enter for the inter-divisional championship and the ship's team is usually very good. The standard attained is remarkably high and in 1953 and 1954 the apprentices' team won the Navy Boys' Championship. In 1953 when the Navy team won the Inter-Service Championship, half the team were *Fisgard* apprentices: a similar contribution was made in the 1954 Championship.

Military Bands

A military band, some 30 strong, plays on all ceremonial occasions and also, voluntarily, at local parades, sports and fetes. A drum and bugle band has recently been formed to absorb those keen apprentices unable to get into the military band. Both bands practise on a 50-50 instructional and free-time basis and the keenness of their members is such that many more unofficial than official practices are held.



RECREATIONAL SAILING

(London News Agency)

Clubs and Information Rooms

It can be said that every apprentice who is really keen to take up some activity can do so and is encouraged to participate in as many as possible. His participation in these activities fosters the house pride and team spirit that is essential for his mental and physical progress. In all this development the divisional officer watches the schoolboy change into a self-confident artificer apprentice.

A clubroom is being fitted out to accommodate the other clubs that are organized in the evenings after instruction has ceased at 1915. Since the apprentices are here only for four terms and there is no superior age group, these clubs are sponsored by officers, though the apprentices run their affairs as much as possible with only guidance and assistance from the sponsoring officer. Such clubs and societies include the Photographic Society, the Dramatic Society, the Choir, the Music Club and the recently formed Bell-Ringing Society. If a club loses membership it is allowed to lapse until demand from the apprentices themselves is sufficient to warrant its revival.

Two information rooms and a library are kept up to date with local information, current affairs publications and items of general interest. Apprentices are able to borrow books from any of the 1,000 novels or 300 reference books.

Magazine

A magazine is published each term at a cost of 2/- and although instructor officers accept the posts of responsibility, much of the material is provided by the apprentices. The articles, cartoons and reports show the talent that is latent in many of the boys.

Leave

Short leave is given from 1230 on Saturdays and Sundays and from 1630 on Wednesdays. Leave is allowed until 2200 without any bounds apart from public houses, on the principle that the sooner apprentices learn to look after themselves the better. Long leave consists of a fortnight at Christmas and Easter and three weeks in the summer.

BRANCH ALLOCATION

The allocation of apprentices to the particular artificer branches has always presented a tricky problem. The Captain's instructions are to ensure, while taking the apprentice's own preference into consideration as far as possible, that there is an equitable distribution among the branches of the talent available. The difficulty is increased by the quota system : some branches take only a small number of apprentices, whilst others take larger numbers. For instance, the very popular Air Branch requires only about 8 per cent of the total output of apprentices whilst the Engineroom Branch, relatively unpopular at the moment, requires some 30 per cent.

Each apprentice has to make his final choice of branch towards the end of the third term. It is often found that his preference is based upon the oddest and most irrelevant foundations and that his parents' wishes and reasons are frequently no more soundly constructed.

Before he makes his final choice the apprentice, throughout the first three terms, has had an equal number of lectures on the life and work of each branch. These lectures are given by officers or ratings of the particular branch in lecture rooms specially equipped with working models to illustrate the work done by the branch. In addition, he has visited ships and an air station, been to sea in a destroyer, and spent a day at a gunnery school and at an electrical school. So he is generally sure, in his own mind, of the branch he intends to select.

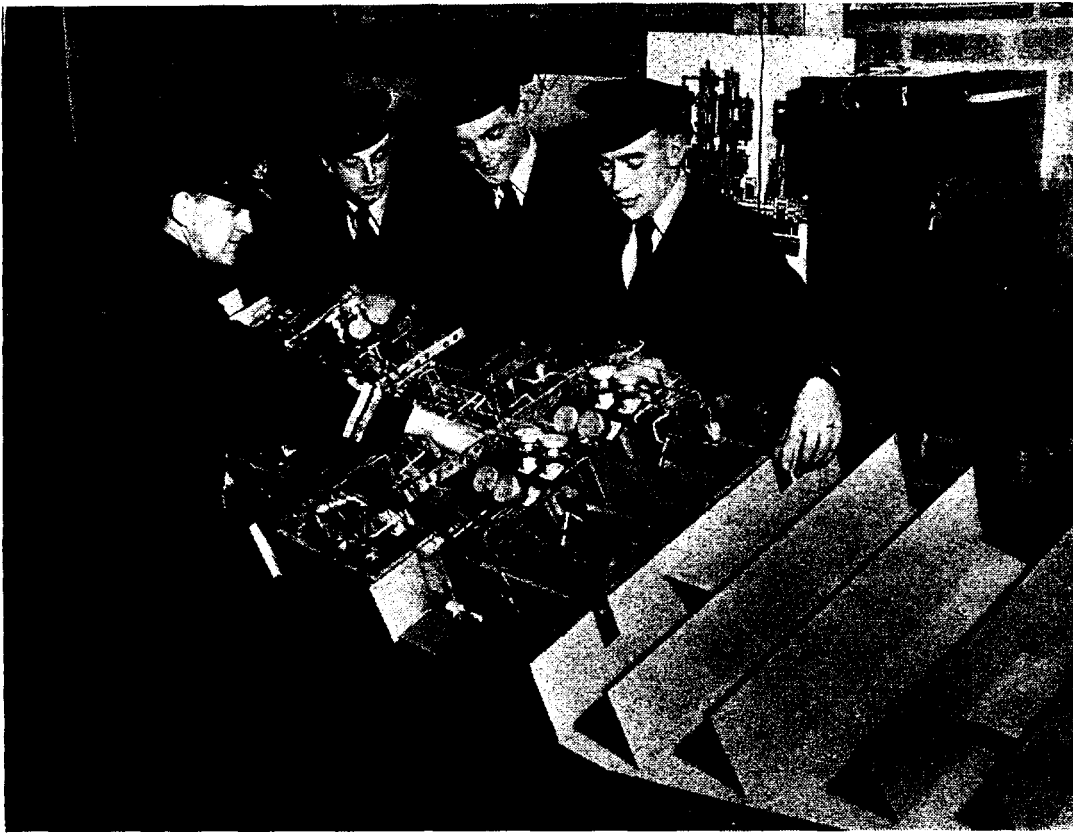
Each apprentice is required to state two choices and up to the present 85 per cent of the apprentices have been sure of getting either their first or second choice. However, since preference has been the governing factor, a high proportion of the better boys opt for the electrical branch, and thus the quality of the apprentices going to the different branches has been tending to get out of balance.

To overcome this, selection methods are now being slightly adjusted but since there is no clear yardstick of talent, the problem is difficult to solve. The final distribution of talent is being watched under the respective headings of 'School Record,' 'Workshop Record,' 'Divisional Report on Progress and Petty Officer Qualities' and 'T2 Score'.

However, another difficulty arises—it is by no means certain that every branch places the same values on each of these records.

Recruiting

In the final analysis everything depends upon maintaining an adequate intake of the right type of boy because it is impossible to build on faulty or non-existent foundations. Apprentice entry does not come within the responsibility of the Director of Naval Recruiting ; it is organized through the Youth Employment officers and headmasters. Serving officers and men can do much to help recruiting by discussing the advantages of apprentice entry with suitable boys and their parents.



ENGINE ROOM BRANCH LECTURE ROOM

Conclusion

It has been attempted in this article to give a general overall picture of Part I training in H.M.S. *Fisgard*. To deal exhaustively with any side of the training would, in itself, require a further article of equal length. But the sixteen months spent in *Fisgard* are very important, if not vital ones, in an artificer's life. It is here that a schoolboy is changed into a naval rating ; it is here that the foundations are laid of a man that the Navy wants.

Yet it is extremely difficult to estimate the degree of success attained in Part I training. Boys, both on joining and on leaving *Fisgard*, vary widely in development. No attempt is made to produce a finished article ; that is more correctly left to the Part II Establishments. Reports and criticisms from these establishments give some idea of how this early training is working.

Apprentices who are clearly unsuitable, or clearly unable to reach the school or workshop standard, should be discharged before the end of Part I training. This is normally achieved by discharging apprentices as ' Unsuitable for further training ' if they have failed, after warnings and after—when this is likely to help—being put back a term, to reach the required standard. Even so, a certain number inevitably fail during Part II training since it is so obviously right to give the benefit of the doubt whenever there is a reasonably good chance of later development.

The objectives of Part I training are fairly well defined ; the methods used are continually being modified to attain them. The greatest influence of all, however, is the example given to them by the officers and men with whom they come in contact.