

CHIEF NAVAL ENGINEERING OFFICER

TO BE FOURTH SEA LORD

Rear-Admiral R. S. Hawkins, C.B., M.I.Mech.E., M.I.Mar.E., the Chief Naval Engineering Officer and Director of Marine Engineering, has been appointed a Lord Commissioner of the Admiralty, Fourth Sea Lord and Vice-Controller of the Navy, to take effect in October, 1963.

In assuming this high office, Admiral Hawkins makes a mark in naval history. To him has fallen the honour of being the first representative of the Engineering Specialization ever to serve on the Board of Admiralty, thus realizing, not only the ambitions of generations of engineering specialist officers, but also the intentions of the Board of Admiralty stated in A.F.O.1/56, that, given the right experience, 'senior officers of the (E), (L) and (S) Branches could and must play a more important part in the higher administration of the future Navy'.

To many it will be particularly gratifying that this distinction should have been attained by an officer who has held the highest professional post in his field, that of Director of Marine Engineering, as well as bearing the responsibilities of the Chief Naval Engineering Officer. A bridge has thereby been established across which the professional attributes required of the Specialist Officer can be brought to bear in full in the highest levels of administration of the Navy as well as the all round ability and wisdom which must obviously be considered a necessity in every Senior General List appointment.

It is, of course, as himself and not because of any office he has held that Admiral Hawkins has been selected for this appointment and it is thus a matter for the most sincere congratulations to him personally as well as a matter for gratitude on our part that he has been chosen.

Our very best wishes go with him.

THE ROYAL NAVAL ENGINEERING COLLEGE, MANADON

A PROGRESS REPORT

BY

CAPTAIN W. T. C. RIDLEY, O.B.E., R.N., A.M.I.MECH.E., M.I.MAR.E.

In Volume 10, No. 2 of the Journal (April 1957), a paper by Rear-Admiral (then Captain) Aylen was reproduced under the title 'Training Engineer Officers'. Admiral Aylen described the then recent changes in officer structure, their effect on the entry of cadets to the new 'General List', and the subsequent selection and training of 'Engineer' (now 'Eng.M') officers. He foreshadowed, in his introduction, the start of a new scheme of training (now known as 'the Murray scheme' after Sir Keith Murray, the chairman of the committee which conceived it). He could not, however, mention one further major change which has since had a great effect on naval technical officers' training—the amalgamation of the old Engineer and Electrical Branches into a single engineering specialization.

This article, which is also being published in the Naval Electrical Review, describes the changes which have taken and are still taking place since Admiral Aylen's paper was written.

It is also a report on the Royal Naval Engineering College, Manadon, one of the Navy's three principal officer training establishments, and fast becoming the Alma Mater of the vast majority of the Navy's technical officers. It is intended that in future years an annual report on College progress and activities shall be published in both the Journal of Naval Engineering and the Naval Electrical Review.

In the period between the two World Wars the R.N.E.C. Keyham was almost entirely occupied in training marine engineer officers for the R.N., R.A.N., and R.C.N. The pattern of training was virtually undisturbed for the whole of the twenty-year period: the syllabus evolved slowly to keep pace with machinery and scientific developments; but on the whole Keyham lived in its own world of undoubted but nevertheless narrow specialized abilities, and the principal variations in the final product—the (Marine) Engineer officer—were those due to personality and individual aptitude.

Since the last war, the changes in officer structure in the R.N. and Commonwealth Navies, the naval requirements of many new Commonwealth and allied nations, and the general advances in technological education and knowledge have all had a profound influence on the life and training at R.N.E.C., which has at the same time been occupied in moving physically from Keyham to Manadon. The transition period from the pre-war type of training to the pattern which is now emerging and which we all hope will remain firmly established for some time to come, has lasted for 15—20 years and it is a tribute to the hard work and determination of successive Commanding Officers and their Staffs that they have succeeded in meeting all the demands made on the R.N.E.C. while operating under such great difficulties.

As a result of the changes mentioned above, Manadon is now concerned with the basic technical education of both mechanical and electrical engineers

and with their subsequent training as marine, weapons and radio, air, or submarine engineers. This has meant that the College and the Schools (H.M.S. *Collingwood*, H.M.S. *Excellent*, etc.) are interdependent as never before ; and this most profoundly effects every aspect of the work at Manadon. Furthermore, the basic education is now starting to aim at the London University external B.Sc. degree standard, which means that many of the facilities and laboratories are being equipped in accordance with London University's requirements. The average age of the students has varied from about 20 (pre-war) through 22 (immediately post-war) and $23\frac{1}{2}$ (C.O.S.T. scheme) to 22 under the Murray scheme. Ever since the war, all officers coming to the R.N.E.C. have served at least a short time at sea in the Fleet, unlike their pre-war counterparts who came straight from the Training Cruiser.

ORGANIZATION OF THE COLLEGE

The organization at Manadon is based on the triumvirate of the Second-in-Command, and Executive Officer, the Dean, and the Director of Engineering. Working under the Captain, these three with the Chaplain are together responsible for every aspect of College life, and although each has his own broadly-defined sphere of interest, co-operation and mutual understanding are, as always in such cases, essential for the smooth running of the establishment.

The Dean

An Instructor Captain, who normally holds the appointment for four or five years, is responsible for the academic work of the College and for the professional administration of the large staff of Instructor officers.

The Executive Officer

A General List Commander, the second-in-command of the College is responsible for the general organization and administration of the College except in the instructional field. His responsibilities include the conduct and discipline of all officers, the administration of the civilian staff and the maintenance of grounds and buildings (other than instructional). He is of course President of the Wardroom Mess, and deals with the accommodation of officers and ratings.

An important part of his responsibilities is concerned with officer training, which, as all naval officers will know, covers a wide variety of activities, including sport, expedition training, etc., in addition to the more formal parade training.

The Executive Officer is assisted by the First Lieutenant (at present, and normally, a seaman) ; the Maintenance Officer, a retired Engineer Lieutenant ; and the Catering Officer.

The Director of Engineering

A General List officer (at present, and for the first time, an Eng.L specialist) is responsible for the professional training of all officers and for disciplinary matters within the instructional field. In this context professional training covers all application courses, workshop and drawing offices and S.D. officers courses.

The various sections of the Training Department (e.g. chemistry and metallurgy, mathematics, marine engineering, workshops) are administered by Instructor commanders for the academic group and General List lieutenant-commanders for the professional group.

The Training Officer, (a General List Lieutenant), assists both the Dean and the Director of Engineering in the organization and running of the Training Department.

Due to changes in training policy discussed later (mainly increased length of courses, and the training of the majority of Eng.L officers at Manadon instead

of Cambridge and Greenwich), the number of student officers is now on the increase, and by 1965 will have reached a total of about 480. This has inevitably led to large increases in staff : the total naval officer staff is now about 60, divided roughly into 40 per cent G.L. and 60 per cent Instructor officers. In addition there is a civilian instructional staff of over 30, and a further 12 in the secretariat and similar posts. With wardroom attendants and industrial staff (groundsmen, labourers, etc.) the total numbers are now :

Naval Staff Officers	:	67
Civilian Staff Officers	:	45
Student Officers	:	326
Civilian Industrial Staff	:	239

and in 1965 will be about :

Naval Staff Officers	:	80
Civilian Staff Officers	:	50
Student Officers	:	480
Civilian Industrial Staff	:	275

In addition, there is a small ships company, of about 45, more than half of whom are Fleet Air Arm ratings. They assist with professional instruction, and with the maintenance of instructional equipment.

The size of the staff may surprise some people ; but Manadon is a large place covering 100 acres, requiring a great deal of work just to keep it tidy, quite apart from the normal jobs of feeding, housing and instructing more than 300 officers of varying nationality, age, and academic and practical ability ; the numbers are in fact cut to the bare minimum required to do the job.

THE TRAINING TASK

The principal task of the R.N.E.C. is of course to produce technical officers for the Royal Navy and certain Commonwealth Navies. During the present period of transition, this alone is a fairly complicated business : two very different schemes of training are operating simultaneously and even within the limits of the two main courses—for the 'C.O.S.T.' entries and the 'Murray' entries—there are groups which fall outside the general pattern. In addition, officers from various foreign navies are also trained at Manadon ; they suffer, in many cases, from very considerable language difficulties, and their educational qualifications often differ from those of their British contemporaries. (In a lesser degree this also applies to some Commonwealth officers).

Apart from the main task of training officers to professional standards there are a number of other regular commitments—for example :

S.D. Officers Courses

All ME, AE, and OE S.D. officers and shipwright officers do a course of about six months at Manadon shortly after promotion.

Special Courses for Commonwealth and Foreign Officers

One- or two-year courses in engineering are held for certain officers whose academic qualifications are not high enough to enable them to compete in the normal Long Engineering, Degree, or Diploma courses.

Ship Management Courses

There are about six of these a year, each lasting a week ; they are designed for officers about to take over as ME officers of ships, and cover general subjects such as organization of the ME and WR departments, planned maintenance, etc.

Junior Constructor Officers

Young men who join the R.C.N.C. direct from school spend two years, and other new entrants one year, at the Constructors' Training Office in Devonport

before joining the Constructors Course at Greenwich. During this time they are accommodated at Manadon and share the communal life of the naval student officers. Parts of their studies are also undertaken at Manadon.

Fourth-Year Seamen and Supply Officers Engineering Courses

All fourth-year seamen and supply officers come to Manadon for a short period—the seamen for a week, the supply officers for a day-and-a-half. The aim is to show these officers how their engineering counterparts are trained and to give them general interest lectures on naval engineering subjects.

Many of these special courses are extremely ‘costly’ in terms of staff effort in that the numbers are small and, often, the syllabuses are specialized. On the credit side, however, they keep the College from getting stuck in a rut, and the presence of such a wide variety of officers is undoubtedly an advantage as far as athletic and social activities are concerned.

The Long Engineering Course

This is the ‘Present Scheme’ in FIG. 5 of Admiral Ayles’s paper, and the ‘C.O.S.T. Scheme’ in FIG. 1 of this article. It is the standard course for engineer officers who joined the Royal Navy between 1955 and 1960. The course itself began in 1958 and the last classes to take this course will not leave Manadon until 1967. From 1958 to 1961 it overlapped with the previous scheme of training and from 1962 has overlapped with the scheme which eventually is to supersede it, so it has had a comparatively short independent existence.

The first two years of the Long Engineering Course are common for officers of all sub-specializations, and approximate to the old ‘Basic Course’; the third year corresponds very closely to the old sub-specialist courses in which AE, OE and ME separated to go their own ways. Satisfactory completion of the three-year course gives exemption from the graduate membership examinations of the Institution of Mechanical Engineers.

The Murray Scheme

As a result of the recommendations made by the Dartmouth Review (Murray) Committee in September 1958, a new scheme of entry and training for General List officers was introduced. The principal differences between this and the 1955 (C.O.S.T.) scheme are as follows :

- (a) The academic standard on entry is raised for all specializations to the level previously in force for L officers only. Under the C.O.S.T. scheme, the bulk of X, E and S cadets took the Civil Service Commissioners’ examination at an average age of about 18.

Two attempts were permitted, and the general level of the papers (six in all) was very little higher than that of the G.C.E. ‘O’ level, which is normally taken at about 16.

Under the Murray scheme the G.C.E. examinations serve to define the entry standard, and the requirement is for five passes including two at ‘A’ level. For engineering candidates, the ‘A’ level subjects are, compulsorily, mathematics and physics. English language and chemistry must be included at ‘O’ level.

It will be noted that, with this standard for engineering specialists in force, entry as in the C.O.S.T. scheme ‘for duty on the General List’, with choice of specialization coming later, is no longer practicable. Cadets accordingly enter Dartmouth as X, Eng, or S—although, exceptionally, changes of specialization are allowed during the first two years of training. No distinction is made at this stage between Eng M and Eng L.

- (b) All cadets now undergo a common training for one year at Dartmouth and in the training squadron. The syllabus is almost entirely professional and practical, the academic content being virtually nil. This replaces the C.O.S.T. seven terms (later eight) at Dartmouth and in the Squadron (during which, in addition to the naval training, the aim was to bring officers up to approximately the academic standard now required on entry).
- (c) On leaving Dartmouth, officers go to sea in the Fleet as midshipmen for one year, where they obtain a Certificate of Competence and certain other qualifications. Thereafter, the engineers, still undifferentiated as to L or M, are appointed to Manadon, while their executive and supply contemporaries return to Dartmouth.
- (d) All engineering specialists who are eligible are then registered with London University for an external B.Sc. degree course in engineering. Certain educational qualifications are acceptable to the Admiralty for entry as engineering specialists, but not to London University for registration. (This applies principally to Scotland and certain Commonwealth countries where the educational system differs from that in England).
- (e) After the three-year Degree (or Diploma—see below) course at Manadon, by the end of which they will have gained exemption from the examinations of one of the professional institutions, all officers do a further 'Application' course, of about a year's duration, with the aim of studying the application of theory to practice and of qualifying in one of the three main sub-specializations—Marine Engineering, Weapon and Radio Engineering or Air Engineering. Officers destined for the submarine service are drawn from the first two of these main groups, and are given training appropriate to their future, although at Manadon this amounts to only some 40 or 50 hours during the application course.
- (f) For officers who are not eligible, under the University of London rules, to take the degree course, a parallel Manadon diploma course will be set up, covering a syllabus which is more specifically directed to naval ends and which is treated with a slightly less academic approach. At the end of this (also three-year) course, diploma officers will join their B.Sc. contemporaries on one of the application courses. It is intended that the grant of the Manadon diploma in mechanical or electrical engineering will confer exemption from the graduate membership examinations of the appropriate Institution.

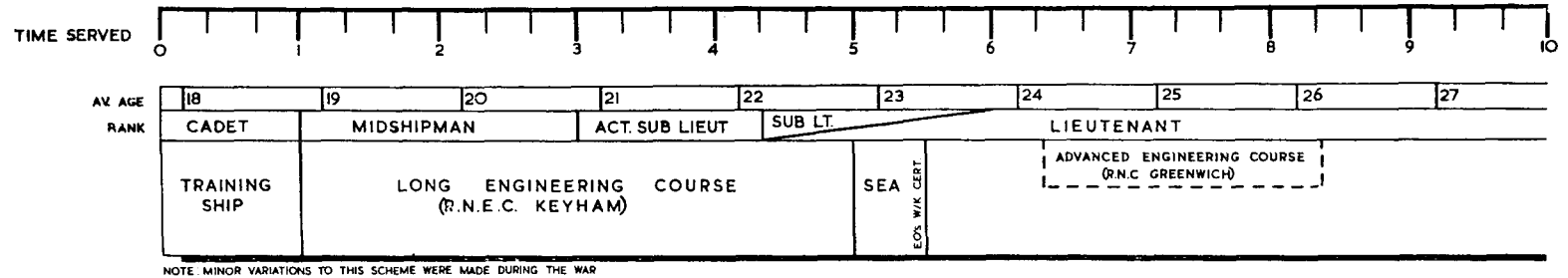
FIG. 1 shows the relative ages, times under training, etc. for the Murray scheme compared with the C.O.S.T. and earlier schemes.

Eng L and Eng M

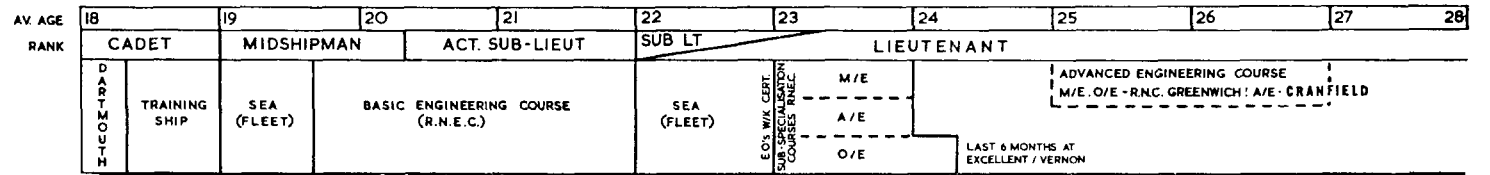
It will be seen from this brief outline of the Murray scheme of training that Manadon is now, for the first time, concerned with training electrical engineers. In fact, since the scheme has only been running (as far as R.N.E.C. is concerned) for under a year, and the first year of training is common for both, there are as yet no separate Eng L classes; but 'Murray' officers now in their first year are aware of their future 'colour'.

From 1963 onwards Murray scheme officers will join Manadon as 'Eng', and not until the end of their first year will the M or L be added. They will be further split into their sub-specializations at the end of their second year so that their choice of subjects studied in their third year may be matched to

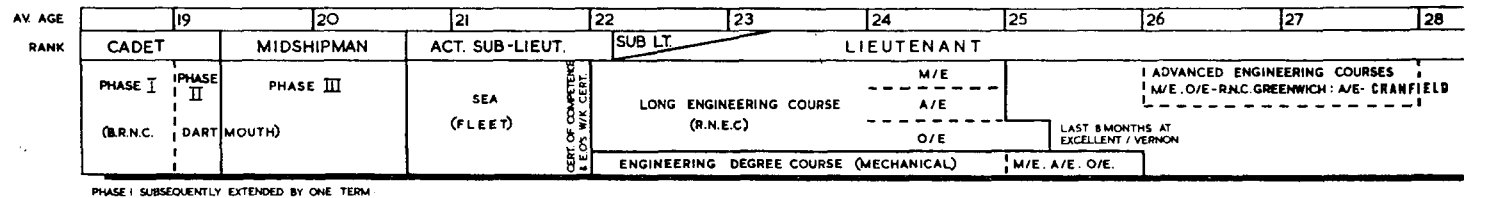
PRE-WAR SCHEME



POST-WAR (1948) SCHEME



C.O.S.T. (1955) SCHEME



MURRAY (1960) SCHEME

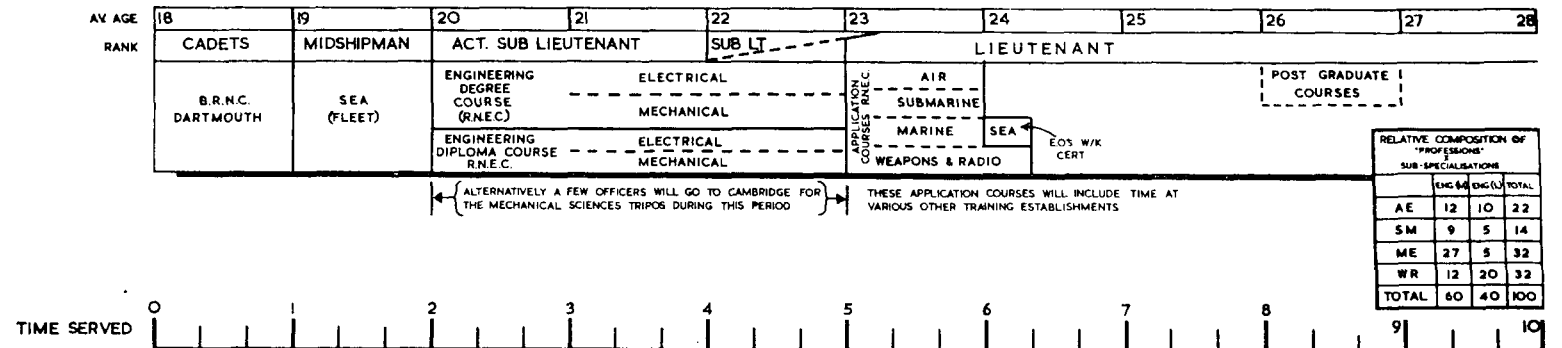


FIG. 1.—COMPARISON OF TRAINING SCHEMES FOR ENGINEER OFFICERS

their application course : this latter split is not irrevocable and does not tie an officer to a particular sub-specialization.

The small table in the bottom right-hand corner of FIG. 1 shows the original thoughts on the ratio of numbers in the two professions and the various sub-specializations. At present, it is not intended to train any Eng L (ME) officers. Clearly, there are liable to be major changes in this table as time goes by.

Dagger Courses

Following the introduction of the degree and diploma courses at Manadon, much thought has been given to the need for a post-graduate course corresponding to the old 'Dagger' course. The continuation of the two-year course which was aimed, *inter alia*, at bringing officers up to roughly honours degree standard, is clearly unnecessary ; but there is a continuing requirement for giving a number of Eng officers a deeper insight into the problem of machinery and equipment design and production than is gained during the Manadon course. It is probable therefore that a one year's course will be taken, after the first appointment in a complement billet, by at least a proportion of officers of all sub-specializations.

The Present Situation at Manadon

The last C.O.S.T. entry left Dartmouth in December, 1962, and the engineering specialists will join the R.N.E.C. in August, 1963. The last Long Engineering course will not therefore be completed until 1966 or, allowing for back-classing, 1967.

The first Murray entry joined Manadon in August 1962, and the first 'full' degree course is therefore now under way (but still in its first year).

When the Murray (degree) scheme was approved in 1959, it was at once apparent that the R.N.E.C. should gain experience in teaching to degree standard as soon as possible. Accordingly, volunteers were called for, from those C.O.S.T. officers with the necessary qualifications, to undergo the mechanical engineering degree course. Eighteen officers volunteered and started Part I of the degree course in the Autumn of 1959. Five fell by the wayside during the first two years ; the remaining 13 took their Part III examinations in June, 1962, and between them obtained one First Class, 8 Upper Seconds, 3 Lower Seconds, and one Pass Degree.

This very creditable result compares most favourably with the national figures for honours degrees ; but it would perhaps be over optimistic to expect the future Manadon results always to fall into the same pattern.

Volunteers, suitably qualified, from subsequent C.O.S.T. entries are following the same programme ; in the case of those joining R.N.E.C. in 1962, they are of course working in the same classes as the first Murray entry.

Owing to the heavy load on the staff, consequent on setting up the degree courses, it has not yet been possible to start the Manadon diploma courses. The first of these is timed to begin at the start of the 1963/64 academic year—i.e. in the autumn of this year. Meanwhile, the whole of the Murray entry which joined R.N.E.C. in 1962 has been entered for the degree course.

The R.N.E.C. Academic Year

The system of entering officers term by term was abandoned at Manadon in 1958, and since then there has been a single annual entry at the start of the autumn term.

The introduction of the degree course, where the holding of examinations during June (under the aegis of London University) is inescapable, led to the present rather unbalanced Manadon year, with a 17-week autumn term, (broken by a week's leave during October), and two terms of 11 weeks in the

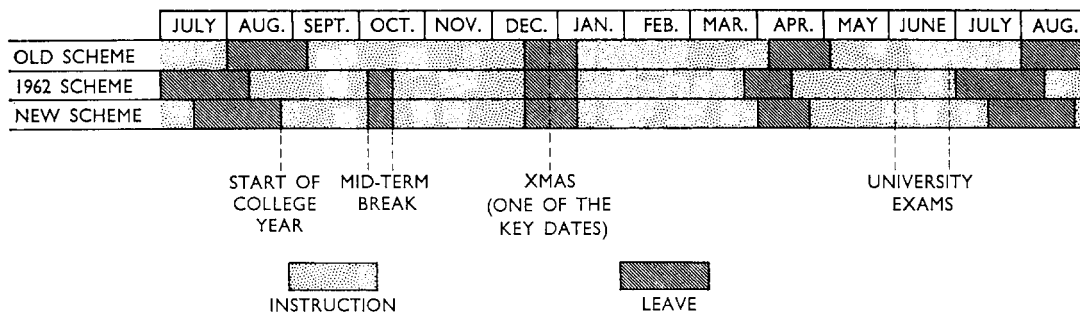


FIG. 2

spring and summer. The object of this was to avoid the long interval during the summer term between the completion of examinations in late June, and the normal start of summer leave at the end of July. (See FIG. 2).

A year's trial of this scheme has shown that the numerous disadvantages, both at Manadon and elsewhere, outweigh the advantages. The short summer term, effectively made even shorter by the examinations programme, ruined the sporting programme; many staff officers with children at school were virtually unable to take their summer holidays with their families; and most important of all from the official point of view, the time available for midshipmen's training in the Fleet was seriously curtailed by the need to fit in with a Manadon autumn term starting in mid-August.

To allievate these difficulties, without unduly prolonging the potentially 'dead' time after the examinations, the academic year is henceforth to consist of an autumn term of 15 weeks (still with a week's break), followed by two terms of 12 weeks.

A further lightening of the load in the summer term will be achieved if the intention to hold the first and second-year diploma course examinations in the middle of the autumn term proves practicable.

Officer Training

Student officers arriving at Manadon have already undergone a great deal of officer training both at B.R.N.C. and at sea, and are well aware of the qualities expected of an officer. Individuals vary, of course, in the extent to which they have developed these qualities; but in general they are already responsible officers and the policy at the R.N.E.C. is to treat them as such and at all costs to avoid a 'schoolboy' approach.

In all internal Service and official matters, (other, of course, than actual 'instruction') the prime responsibility is placed on the students, the staff officers being available for guidance and help when needed. This has resulted in the College running more smoothly, and it is hoped that the experience gained will be useful to the officers when they leave. In the same way, most 'outside' activities—games, canoeing, social events etc.—are organized and controlled principally by the students themselves, with assistance from a staff officer when required.

Expedition training is compulsory for all students during their second year in the College, and many and varied are the plans produced for this activity. Lack of money sometimes interferes with the more ambitious schemes, but it is hoped, for example, to mount an expedition to the Himalayas this summer if R.A.F. transport can be obtained for the journey to Pakistan.

The Divisional System

In the days of termly entries, it was inevitable that the divisional structure should be more or less the same as the class structure; and this system continued

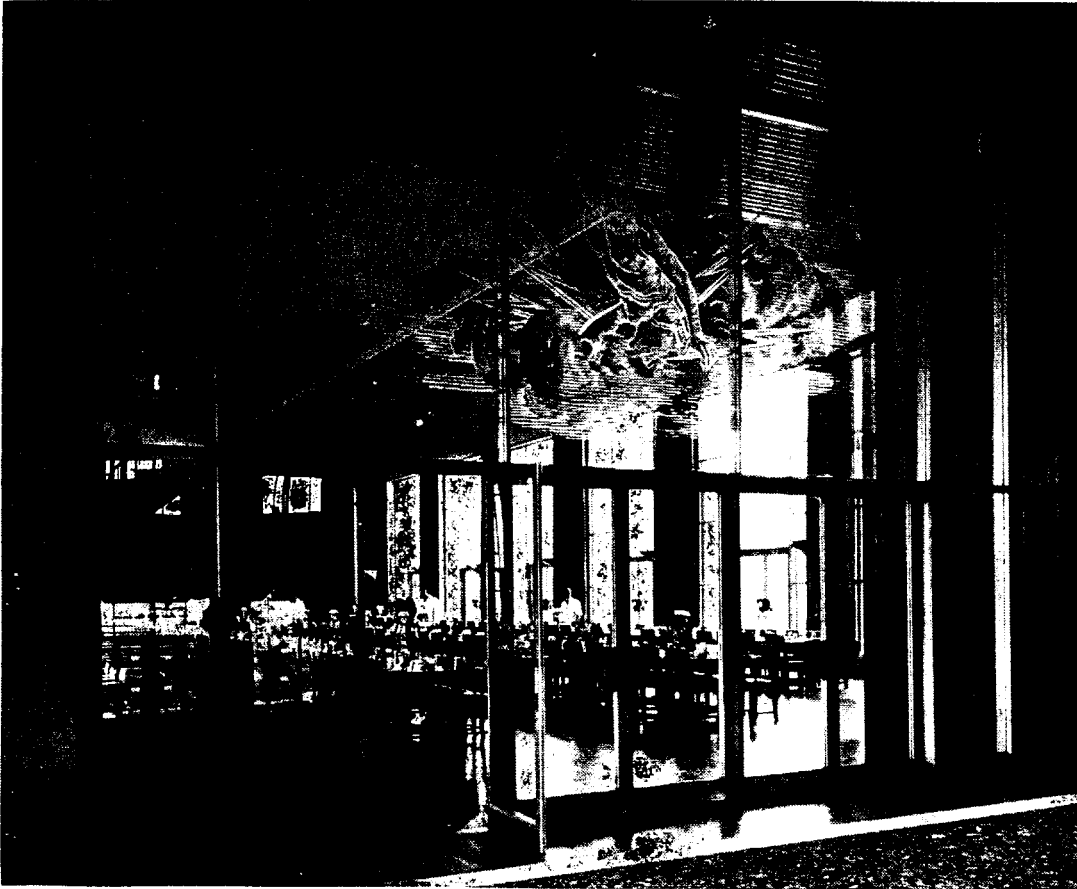


FIG. 3—THE GREAT HALL, FROM THE ENTRANCE

during the days of the C.O.S.T. Long Engineering Course. The number of classes has recently increased, and the same officers no longer stay together in a class throughout their time in the College.

To avoid constant changes from one division, and consequently divisional officer, to another, annual entries are split into groups of roughly 35 and these officers stay together as a division throughout their time in the College.

A new system of nomenclature has also been introduced. Divisions have in the past been known either by the year in which they joined (e.g. 1961) or by their seniority (e.g. Year I, II, etc.), followed by a distinguishing letter or number. Both these systems are uninspiring, and the second one changes a division's title every year. Divisions are now named after famous (past) engineers, the basis on which the names were chosen being that they must be well-known, sound reasonably British, and not be too difficult to shout when giving orders. Needless to say the names chosen include those of famous electrical engineers.

BRICKS AND MORTAR

Living Accommodation

Many readers will by now have seen the Great Hall of Manadon which, together with about 100 double cabins, and extensive ante-room accommodation, etc. formed Stage I of the building programme and was completed in the summer of 1958. The building was opened by H.R.H. the Duke of Edinburgh*, deputizing for H.M. the Queen who was unfortunately prevented by illness from visiting Manadon in person. Views of the Great Hall are shown in FIGS. 3 and 4.

* The opening ceremony was described in Vol. 11, No. 3 of the *Journal*.



FIG. 4—VIEW FROM THE MUSICIANS' GALLERY

The final plan for the mess and accommodation block is shown in FIG. 5. Unfortunately, the addition of Stage II ran into financial and other troubles, and work did not start until nearly four years after completion of Stage I—viz, in July, 1962, for completion in mid-1964. This has meant that much of the sub-standard accommodation in the huts has been constantly occupied and now that the numbers at the College are increasing so fast there is little prospect of any of the huts being finally vacated for at least three or four years. The cold weather in January of this year vividly showed up the poor state of many of the 'temporary' buildings and services: with the present numbers it was possible to take emergency action during the worst of the weather by 're-shuffling', but next year nearly all available cabins will be full, and plans are on foot for making good the worst of the deficiencies. Meanwhile, final approval for Stage III still seems some way off.

The lack of space is likely to be worse than appears at first sight, since with the advent of the Murray scheme, the average age of the student officers is gradually reducing; which means that a smaller proportion are likely to be married and allowed to live out.

Instructional Accommodation

Apart from the Engine Test Shop and the Electrical Test Shop, the move of instructional accommodation to Manadon was completed about six years ago. The new Steam Test Shop at Manadon is due to complete trials in August 1963, and the Electrical Machines Laboratory (replacing the Keyham E.T.S.) in April 1963; thereafter, except for the Constructor Officers, who spend a large proportion of their time in the Constructors' Training Office (the north end of the main Keyham building) there will be no further instructional link with Keyham.

Much of the laboratory and classroom accommodation at Manadon has recently had to be altered, to comply with the London University requirements for the degree courses, and also to meet the new commitment for training electrical (AE and WR, to date) engineers.

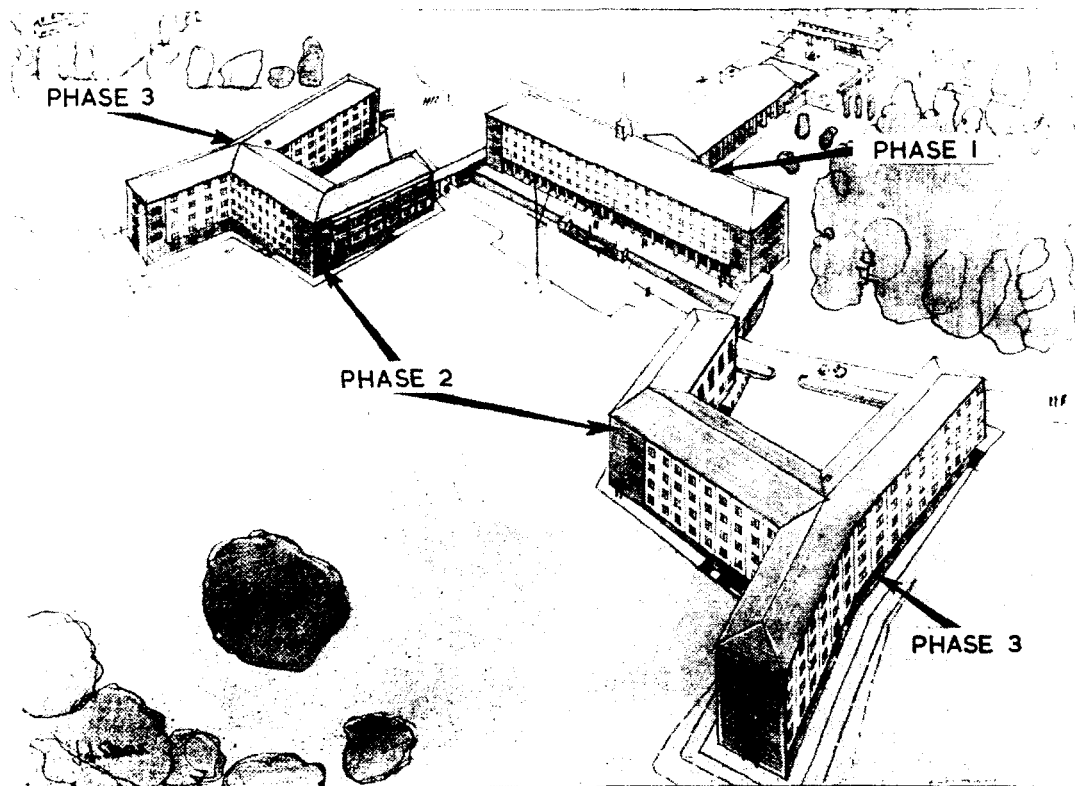


FIG. 5—THE FINAL PLAN FOR THE MESS AND ACCOMMODATION BLOCK

The big increase in numbers has brought many problems in its train ; not only are the individual classes tending to be larger, but the number of classes has also risen steeply and will rise still further. Plans are going forward to build additional lecture rooms, laboratories, and drawing offices, principally by the addition of a second storey over part of the existing instructional block ; but once again approval for this work was received too late, and the lack of space has to be made up by the use of temporary classrooms in the old mess (known as the ' Recreation Block '). There is a conflict here between living and instructional requirements, and extraordinary measures may be needed to resolve the problem.

Offices, etc.

The plans for the second storey of the instructional block include the construction of new administrative offices over the existing main entrance, and also a rather more imposing ' new look ' for the entrance doors and hall themselves. While this work is going on, the senior administrative staff will be moved into part of the accommodation now used by the ships company.

Completion of the new offices and classrooms is promised for May, 1964.

The Chapel of St. John and St. James

Not least of the notable achievements in building during the past eighteen months is the face-lift and transformation of the oldest edifice left on the Manadon estate. Through the joint efforts and inspiration of a succession of Captains and Chaplains of the College, the vision of Mr. Robert Potter, F.R.I.B.A., of Messrs. Potter and Hare, Architects, the excellent co-operation of Navy Works, and the prayers, good wishes and support, financial and otherwise, of several generations of serving and retired officers of the Royal Navy and Commonwealth Navies, the seventeenth century tithe barn has now become the Chapel of SS. John and James, (who were nicknamed by their Master ' The

Sons of Thunder'). Unlike most new buildings there is a ready-made 'atmosphere'—that indefinable quality which can transform (usually after several centuries of prayer and worship in it) a church building into the House of God. In the case of the College chapel, perhaps this is due to its similarity of function in its two roles—formerly garnering the fruits of the earth, and now a harvest of souls. Its interim usage as a derelict building sheltering vintage cars is now hard to imagine, as the photographs reproduced in Vol. 12, No. 2 of the *Journal* will show.

The chapel is *used*—both in the daily services held during term time, and privately by members of the College. Although primarily for the use of staff and student officers, it is attended also by wives and older children, and a tradition of family worship continues. It has already been necessary once or twice to turn people away from the Sunday service for lack of space, and this problem is likely to become more acute as the numbers in the College increase.

It will be essential to increase our accommodation in the near future, and the architect has already produced a plan for the addition of an extra aisle and bay, and a new roof more worthy of the beauty of the rest of the building than the present utilitarian structure.

Many engineer officers unable to be present at the dedication of the chapel, or to visit it through service overseas, already take the opportunity of doing so when they visit Plymouth; and despite shortage of space those who wish to attend the Sunday service at 10 a.m. can usually be found places, and are very welcome.

SPORTS AND PASTIMES

The growing number of students, and the return to a continuous three- or four-year training programme, have resulted in an increase in the number of different sports at which the College is adequately represented. To those who remember the great days of Keyham rugby, and who consider other games to be a waste of time, it may seem that the standard at Manadon is lower rather than higher: but the Manadon horizon is a far wider one, as the following brief survey will reveal.

In the present winter season five players have represented the Navy XV, two of these playing for the Combined Services; the fencers have two Navy representatives; in the summer one of the Navy tennis doubles champions, and both runners up, were from the R.N.E.C.; the Navy cricket XI had one College player, and at squash the Navy number two was from the College. The Command teams (particularly hockey and squash) and Devonport Services, draw heavily upon College players, while the Command shooting trophy rests safely in our possession. Badminton and basketball, both virtually unknown a few years ago, are flourishing. The Rowing Club, started from small beginnings back in 1952, now has a considerable following, and the College eight will be seen in London, Reading, Bristol, and Exeter this year. The number of dissolute weekends spent sailing to the Channel Islands in the summer has increased now that the College has four yachts; the dinghy sailors are more dedicated, and two helmsmen have represented the Navy. Soccer has a considerable following and two teams are regularly fielded, the first XI being comparable with a good ship's team.

The Australian contingent are the backbone of a strong surf life-saving club, while the Sub-Aqua Club, as a change from their chilly dives in the Channel, are going to the Mediterranean in the summer. The Moor Rescue Unit has been called out on a number of occasions and has earned the thanks of the local Police in various districts for their help in searching for people lost on Dartmoor.

Mechanically minded officers busy themselves building go-karts and race them around the College roads ; while in contrast a canoeing group either speeds noiselessly down the moorland rivers, or in bad weather surf-canoes on the many sand beaches around the coast.

The grounds within the College have undergone much change in recent years. A nine-hole golf course now skirts the perimeter ; a new athletics track will be used this summer ; from a new pavilion the cricketers will emerge onto the new cricket pitch (the outfield being used for hockey in the winter). In 1964 the final stage of the Manadon playing fields will be started, with levelling of the present soccer and rugger fields to provide two rugger, one soccer, and one all-weather hockey pitches, and a first eleven square. Keyham meanwhile remains the venue of all first team games (except soccer) and the Manadon grounds are unlikely to reach a high enough standard to allow us to relinquish those at Keyham until 1970, at the earliest.

To those officers who have not known the modern luxuries of life at Manadon, the number of activities seems overwhelming. These include the Quart Club, which has widened its traditional lines of activity to include help to local welfare clubs, and a Bachelors Club which thrives on traditional bachelor pursuits, including weekends in Paris. The literary fringe group themselves as the 'Dissenters' Debating Club, while the actors now have their own theatre, the Manadon Theatre—officially designated a 'combined lecture hall and cinema'. The Motor Club, with its professional appeal of mechanical and electrical engineering, and its demands of physical fitness and intelligence on its rallies, best exemplifies the old and the new. The Photographic Society, the College Orchestra, the Choir, Scottish Country Dancing, the *Thunderer* magazine, the Engineering Society—the list is endless ; and it is difficult to believe that any officer can fail to find some flourishing activity, club, or society to absorb his surplus energies and interest. There is perhaps a danger that some people may attempt too much ; but better this small risk than a narrow-minded self-absorbed establishment containing a large number of square pegs looking hopelessly for non-existent square holes.

Finally, although perhaps not entirely appropriate to the heading 'Sports and Pastimes', mention should be made of the intention to open the College and grounds to the public one day this summer. This, we hope, will enable the citizens of Plymouth to gain a better idea of the establishment which broods over their City from its eminence at Crownhill, than they could from the words which recently appeared in a local paper—'the Navy engineer student's camp at Manadon'.

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It will be apparent to the reader that the ties, both physical and spiritual, binding Manadon to Keyham have become progressively fewer and weaker in the last few years. By the end of 1963, the only memorials of the old Keyham days, apart from the memories of senior Eng (M) officers, will be the boathouse, the playing fields, and some (we all hope, the best), of the Keyham traditions. Manadon is now a place in its own right—a bigger, more modern, better equipped, and above all different, place which is gradually acquiring its own atmosphere and traditions ; but it is still dedicated to the same broad aim : the education and training of a corps of technical officers second to none.
