

## CHAPTER 5

### EDUCATION IN THE ROYAL AIR FORCE

THE ROYAL AIR FORCE is the youngest of the three Services. It was born out of the Royal Flying Corps during the first world war; the first educational element in it arose from the setting up of the Royal Air Force College at Cranwell in 1919, shortly after the termination of hostilities. The scheme and structure of education in the Service is not an artificial product. It is not unusual, when embarking upon a new project, to plan and organise it in a complete sense, and to create an approximation to a theoretically perfect structure. In the present era of reconstruction following the upheavals of the second world war, this kind of planning and organisation is indeed happening from time to time in various parts of the world and in one connection and another, but not as regards education in the Royal Air Force. Relatively young as the Service is, its educational structure has developed more or less steadily from small beginnings to the vigorous and comprehensive service of to-day.

Following the creation of a small staff of civilian education officers to assist in training of cadets at the College to become the permanent officers of the Service, a start was made in 1920 on the training of aircraft apprentices, who in their turn were to become the skilled technical tradesmen necessary for the maintenance and servicing of aircraft. Primarily, therefore, education was introduced rather in the utilitarian sense to serve the training needs of the Service. These needs have not only remained, but with the press of scientific progress in all directions have grown and intensified. Of necessity the Royal Air Force has had to recruit from civil life as highly intelligent a body of personnel as possible, and to incorporate in practically all its schemes of training the considerable body of scientific theory necessary to provide the essential background for the engineering and aeronautical practice so vital to an efficient air arm.

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After the beginning of the steady extension in Service training courses, it was not long before a start was made with the provision of more general education facilities to meet the individual needs and requirements of Service personnel. Thus was born what has come to be known as the "General Education Scheme." Its benefits, as will be seen later, were rapidly extended as education officers gained experience of its working, and with the increasing appreciation by all officers and airmen of what it could offer. The General Education Scheme was and is to be found in operation at all stations and all units both at home and abroad.

As the "between wars" years passed, therefore, there came into being a steadily increasing body of education officers who collectively constituted what was known as the Royal Air Force Education Service. This, as has already been indicated, was a civilian organisation of university graduates, and it will be understood from the foregoing that the activities of its members fell into two well-defined divisions. One half was engaged in whole-time teaching duties at the various training schools and centres of the service; they worked in staff teams, each under a Senior Education Officer, their duties being to carry out the theoretical elements of instruction in the training schemes. The second half of the education service comprised individual educational officers, each working single-handed at an R.A.F. station, who were charged with the duty of administering the General Education Scheme, partly through the medium of administration and the day-to-day organisation of educational needs, and partly by giving actual instruction. The station education officers were naturally responsible to more senior officers at the higher formations at Group level, known as Group Education Officers; these in their turn were responsible to and administered by the senior education officers at Commands, whose duty it was to advise and assist Commanders-in-Chief on all matters relating to education. This still remains the broad picture as it exists to-day.

The war years from 1939-1945 have already been referred to in earlier chapters. But from the point of view of the Royal Air Force it is significant to note that although at the outbreak of war it was decided to suspend all activities relating to the

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General Education Scheme, and to confine educational instruction exclusively to the urgent requirements of war training, it was nevertheless not long before the press of circumstance and necessities of morale brought about an early reintroduction of general educational activity. Another circumstance following the experience of the war period should be mentioned. During the war years it was deemed essential for education officers to assume service ranks and to wear uniform. Apart from those among them who had been transferred to war duties outside the educational field, education officers were not actually mobilised, but to all outward appearances they formed part of the mobilised structure of the Royal Air Force. It had been the growing conviction of many during the pre-war period, when education officers were working in and with a military body, that there were disadvantages involved in doing this under civilian conditions, and as a logical outcome the Royal Air Force Education Service was formally converted on October 1st, 1946, into the Education Branch of the Royal Air Force, fully integrated into the Service as a combatant branch of professional officers.

There is no further need to dwell on the past. As has already been indicated, the post-war world of to-day is still struggling through a formative period of reconstruction in terms of a general revolution in outlook and in the sense of values of its citizens. Practically every element of public and private life is charged with its own special set of problems, separated from each other in one sense but necessarily interrelated in terms of a formula and an ideal of unity; and in these respects the three Services are no exception. In one sense there is common ground between them. There is general recognition that those who man the Services, whether they do so for a short time as National Service entrants, or for a long period as regulars who are making their careers with the Services, all belong nevertheless to the nation and to the world, and are entitled to the opportunities and benefits of those educational facilities that are relevant to this relationship. In the Royal Air Force, however, perhaps even to a greater extent than in the other Services, there have been tremendous advances recently in the scientific field relating to the design, performance, protective armament, and offensive

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weapons of Service aircraft. As a consequence the training needs of the Service for its own special functions and purposes have been greatly intensified, but have of course called for modification and adaptation appropriate to these changes.

From the point of view of education, therefore, it may be said that in the Royal Air Force there is a twofold aim. On the one hand there is the educational requirement for service training, and on the other there is the need to provide for the general educational wants of the individual. Obviously, since both these aspects remain educational, they are interrelated. Each must help the other, and to that extent they are mutually inclusive. Nevertheless they involve two separate approaches. Education for the Service, by its very nature, is an R.A.F. responsibility, and its training schemes must of necessity be imposed as a compulsory element in the preparation of an officer or airman for his subsequent Service career. Courses of instruction in the basic principles appropriate to the Service branch or trade concerned is therefore compulsory, and is given wholly in Service time. Such instruction on the educational side will almost always include some mathematics, English, mechanics and physics, with the addition of particular specialist subjects which naturally differ from branch to branch in the case of officers, and from trade to trade in the case of airmen (e.g., aero-engine theory, the strength and properties of materials, principles of flight, and so on). Education for the individual, on the other hand, is primarily the responsibility of the individual. The Service readily accepts the duty of provision, but it is for the individual to make what use of it he will. Such education is therefore mainly optional, and is undertaken largely in the airman's own time. The Service outlook in this respect is completely liberal, as commanding officers are authorised and indeed encouraged to provide Service time for individual instruction under the General Education Scheme whenever they are satisfied that the instruction in question is equally to the advantage of the Service and to that of the individual.

There is one exception to the optional character of this aspect of education in the Royal Air Force. It has already been indicated in Chapter 2 that with the establishment of the

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principle of national service, the R.A.F. equally with the other two Services has assumed a responsibility for the provision of "further education" in respect of "young persons," which otherwise has fallen to the local education authorities. It is to meet this responsibility that the Air Council has laid down the principle that two hours of Service time per week shall be set aside for compulsory instruction (one hour in general educational subjects and one hour in citizenship and current affairs) during the first year of service, and one hour per week only during the second year of service.

The training of personnel for the many aircrew categories and ground trades of the Air Force has entailed the setting up of a great number and variety of training schools. In the main, though not entirely, the schools in Flying Training Command are concerned with the training of aircrew, both officers and airmen, and those in Technical Training Command with the training of personnel for ground duties.

The educational element necessarily varies both in content and amount according to the purpose of the course, the type of training, and other factors. It will range from elementary studies for the lower trade groups to advanced instruction of university standard for some of the officer courses. In particular it will be appreciated that for those airmen of the regular Air Force who are of high mental calibre, it is important that they should be given the best possible training in fundamental principles, since they represent the high-level reserve from which in any large-scale expansion in an emergency the officers and senior non-commissioned officers would be drawn.

In some schools, such as those giving practical flying training, the educational element finds little place. On the other hand, in schools for the training of officers for the technical branch, and of airmen for the technical trades, the educational element assumes a considerable importance. The relationship between educational and technical instructional staffs at such schools has been very clearly defined in the following terms: "the former, with their educational competency, should be responsible in general for theoretical, mathematical, scientific and engineering instruction, and the latter, with their user knowledge, should be

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concerned with the practical and applied aspects of training.” This is a formula of unity which works admirably in practice.

Humanistic subjects are included in most of the training courses of the Service for a number of reasons. They provide background relief and give variety to the main technical elements of the courses, they help to develop varied interests outside the utilitarian sphere, they help to encourage and train adult thinking, and with it the ability to interpret experience, and generally they encourage and satisfy the moral and intellectual aspirations latent in all thinking human beings. In the courses that are addressed to the potential leaders of the Service, as at the R.A.F. College at Cranwell, and at the Officer Cadet Training Units, this broader element in the instructional programme is extended to training in capacity for leadership through a broad study of contemporary problems and events. All concerned are taught to express themselves lucidly in speech and writing, and are given practice in the exercise of initiative and judgment in appropriate group activities, and in the creative use of leisure.

It is now appropriate to turn more specifically to the main aspects of the various training schemes. For the permanent officer of what is called the General Duties (or Flying) branch these training schemes really begin with his cadet course at the R.A.F. College at Cranwell in Lincolnshire. The cadet enters Cranwell through the medium of the Combined Entrance Examination conducted by the Civil Service Commissioners on behalf of the three Services, and for a period of between two-and-a-half and three years he is taught to fly and to understand his aircraft completely, and trained in all aspects of his duties as an officer. To this end there is provided a considerable body of theoretical instruction in mathematics, physics, principles of flight, the theory of the internal combustion engine, the strength and structure of materials, and other related technical subjects. As indicated above, there is also a course in the humanities—English, history and geography, and current affairs—all studied from the specialist angle of the future officer of the Royal Air Force. Each cadet is also encouraged to study a language. The standard reached is approximate to that achieved at the end of the second year at a university. The

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course at Cranwell is in fact a fully balanced and integrated scheme of practical and theoretical instruction which, allied to the general build-up and development of character through the medium of games and other corporate and individual activities, is designed to produce that high spirit of service and duty which has come to be regarded as synonymous with the Royal Air Force. It should be added that at Digby, close by Cranwell, there is what is known as the Secretarial Wing of the R.A.F. College, devoted to the training of officers of the secretarial branch of the Service. Educationally cadets of this branch take the same course in the humanities as do those of the General Duties branch, but their specialist subjects are those appropriate to their professional duties.

Officers of the technical branch of the Royal Air Force are differently recruited, and are therefore also differently trained. Some are drawn direct from the universities as graduates with appropriate degrees in science or engineering, in respect of whom a preliminary Service training will have been provided through the medium of the university air squadrons which are associated with most of the universities of the United Kingdom. Others are drawn from the more senior and experienced Group A tradesmen of N.C.O. rank. In all cases those concerned first attend an O.C.T.U. (Officer Cadets Training Unit) for a short general course of officer training, and then pass, according to which of the three sections of the technical branch—engineering, armament or signals—they elected to serve in, to one or other of three training centres for an appropriate Junior Officers' Specialist Course. A Senior Specialist Course is taken later after an interval of a few years' service and experience as a junior technical officer. At all these courses there are, needless to say, Education Officers responsible for the theoretical aspects of the instruction.

It is hoped before long to co-ordinate the three technical centres above referred to, at present dispersed, into a combined R.A.F. Technical College.

Passing from the training of officers to that of airmen personnel, it should be noted that the Royal Air Force shares with the other Services in the provision of schemes of recruitment for the youth of the country. There are two such schemes

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in the Royal Air Force. One is known as the Apprentice Training Scheme, and the other is the Boy Entrant Scheme. The Apprentice Training Scheme is perhaps the better known. Indeed in many respects it has earned considerable distinction in the country. There must be very few secondary schools indeed which have not at one time or another provided a quota of boys for this scheme. The Aircraft Apprentice Scheme of training was begun in 1920 through the inspiration of Marshal of the Royal Air Force the Viscount Trenchard, then Chief of the Air Staff. Its most notable home has been the School of Technical Training at Halton in Buckinghamshire, where apprentices of the engineering trades are trained, but it should be known that apprentices of the signals trades are trained at Cranwell, and administrative apprentices (clerks and equipment assistants) at St. Athan, in South Wales. On the 25th May, 1945, Lord Trenchard attended at Halton as the inspecting officer on the occasion of the "passing-out" parade of the 46th Entry. This was the jubilee celebration of 25 years of aircraft apprentice training in the Royal Air Force. Halton's record during this period has been inspiring and distinguished. Up to May 1945 no less than 18,499 apprentices had passed into the Service as skilled tradesmen, 4,143 ex-apprentices had been granted commissions, and a stirring record of honours had been earned, including one Victoria Cross, one George Cross, two appointments as Commander of the Order of the British Empire, 174 Distinguished Flying Crosses, 83 Air Force Crosses and 249 Distinguished Flying Medals. The country owes much to this scheme of training in the Royal Air Force, a scheme which has not only reflected on the technical side the high standards of skill associated with the ex-apprentice airman concerned, but has also made the phrase "the Halton Spirit" very well known. It may fairly be claimed that the Education Branch has contributed in very large measure to this success. Aircraft apprentices enter for three years' training, either at Halton for the engineering trades or at Cranwell for the signal trades, under conditions comparable with those at a public school. Here they undergo a thorough grounding in theoretical principles and their practical application. For this purpose a considerable staff of education and technical officers



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is provided. The time given to educational instruction (in mathematics, physics, mechanics, and the appropriate theoretical subjects especial to the particular trade selected, together with a liberal course in the humanities) amounts to approximately 10 to 12 hours per week over the whole three years. Aircraft apprentices have the opportunity of qualifying for the National Certificate in Engineering during this time, and for those who do this further opportunities will, it is hoped, be available to proceed in later years to the Higher National Certificate.

The Boy Entrant Scheme is designed on a somewhat lower plane. Entrance to the aircraft apprentice scheme is firstly by nomination, followed by a qualifying educational examination, and then by a series of appropriate intelligence, aptitude and medical tests. As the Boy Entrant training scheme involves a course of instruction of eighteen months as against the three years of the Apprentice Scheme, the qualifying examination is dispensed with. Successful Boy Entrants are trained in one or another of a variety of trades which, because they involve a lesser standard of skill and knowledge, do not contain the same amount of educational training. The scheme nevertheless has very wide appeal, and for boys who leave school less well equipped educationally offers an excellent alternative to the Apprentice Training Scheme described above.

After enumerating the training schemes for apprentices and boy entrants it is convenient to summarise the scheme for training airmen, numerically the largest element in the R.A.F. Nowadays airmen recruits may either be volunteers who seek a career in the regular Service, or entrants under the National Service Act. Volunteers for regular service are carefully selected and only those who reach a specific standard are accepted. Selection for training in a particular trade is in accordance with a carefully planned procedure, which takes into account both the personal inclination of the recruit and the needs of the Service. It will be appreciated, however, that where all entrants, whether regulars or National Service, are subjected to similar batteries of intelligence, aptitude and other tests, the allocations to trades in the case of National Service entrants is naturally confined to those which do not involve long courses

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of training. The problem of the National Service entrant is indeed difficult. The importance of developing a policy of continuity between his pre-Royal-Air-Force trade training, if any, and his intentions as to his future career when he leaves the Service is fully realised. Every endeavour is in fact, made to take this fully into account when allocating the National Service recruit to his trade. This matter of allocation is not easy. Primarily the needs of the Service must prevail, and of necessity the period of his useful availability is so limited that except in the case of the entrant whose civilian trade training is sufficiently advanced an allocation must be made to a trade the training for which will leave a reasonable balance of time for useful operational service.

Broadly, trades in the R.A.F. are graded in three categories or groups, the A group of trades involving the highest degree of skill and technical knowledge, with lesser standards in the lower groups. Most of the technical trades are of course in Groups A and B.

All entrants naturally begin with a course of recruit training, at present of two months' duration, at one or other of some six training schools. Educationally the course is planned to include elementary calculation and English and a broad appreciation of current affairs. Exceptionally, those specially qualified may pass straight to a course of training for a Group A trade, but more generally the airman, especially in the engineering groups, will go to a school of technical training or to one of the radio schools for what is known as a trade mustering course for his Group B trade. Here the Education Branch contributes instruction in mathematics, general physics, mechanics, and, where appropriate, workshop drawing and electrical theory. Subsequently—and this will naturally apply more especially to the regular airman—he is encouraged to re-muster to the Group A trade corresponding to his Group B trade. Thus an instrument repairer may be accepted for a conversion course to the trade of instrument maker, a flight mechanic to that of a fitter, and so on.

Enough has been said in the foregoing to give an outline sketch of the general ramifications of education in the training of the officer, airman, apprentice and boy entrant. The following

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considerations show what the Service offers to the airman as an individual under what has already been referred to as the General Education Scheme. This scheme has been devised as the broad means for providing anything and everything educational, apart from the training schemes, that may be required by any member of the Royal Air Force, whatever his rank and whatever his trade. The charter from the outset has been broad and generous. In King's Regulations and Air Council Instructions as far back as the 1920's the aim has been expressed as including "education in a wider sense intending to raise the level of general intelligence and to develop those qualities of mind and character which go to form an efficient disciplined Force under modern conditions." When the whole matter of both aims and provision for education in the Royal Air Force was brought under review with the changed outlook of the post-war world, it was found unnecessary to deviate from the above statement of aim in any respect whatsoever. This fact stands as testimony to the wisdom and vision of those who helped to plan the scheme in the pioneer days.

To give a more detailed enumeration of the scope and intentions of the General Education Scheme, it is only necessary to quote from the official Air Ministry Order of December 23rd, 1946. This reads as follows :

- "3. The General Education Scheme will cover the following :
- (a) Assistance to officers, airmen and airwomen in the study of subjects of an educational character bearing on Service requirements, including general and technical education related to air force branches and trades and, where appropriate to the scheme, preparation for service examinations.
  - (b) Education in a wider sense, aimed at raising the level of general intelligence and developing those qualities of mind and character which go to form an efficient disciplined force under modern conditions, including, *inter alia*, practice in self-expression with a view to clear thinking and accurate statement; general reading and study for self-development, and the study of modern world problems.
  - (c) Assistance to officers, airmen and airwomen who wish to prepare for business or professional careers or industrial occupations in civil life, including the provision of information, guidance and advice on such careers and employment.

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- (d) The study of current affairs and citizenship.
- (e) The provision of facilities for practical activities such as handicrafts and hobbies of educational value and for the cultivation of music, art, drama and other cultural subjects.
- (f) The provision of library facilities.
- (g) The oversight of the arrangements for the education of the children of Service personnel."

To carry out this very generous charter, we have mentioned that at least one station education officer is to be found at every unit of the Royal Air Force both at home and overseas. Actually the provision of education officers for this scheme will in future be on an even more generous plan, in proportion to the station's strength, at the approximate scale of one education officer per 450 airmen and airwomen. Each of these graduate officers, following commissioning and appointment, will have undergone a preparatory course of training in the many-sided problems and duties of a station education officer at what is called the R.A.F. School of Education, located at Wellesbourne Mountford in Warwickshire. When he (or she, since, where appropriate, education officers of the Women's Royal Air Force are now also being recruited) reports to his commanding officer for duty, he will find available to him on his station the appropriate requisites for his task. It is intended that when the scheme has developed fully, what may collectively be described as the station education centre will include education offices for himself and a clerk, an education library, perhaps a recreational library (since recently the responsibility for recreational libraries in the Royal Air Force has passed to the education officer), a quiet room for private study, a station information room for the provision of both pictorial displays and appropriate literature on current affairs in international, national, local and station matters of interest, a number of classrooms appropriate to the demands of the station for formal class instruction, a comfortably furnished room for informal discussion-group gatherings, and suitable workroom accommodation for handicraft practices of various kinds. Ideally, one would like to see all the above housed in one block. This will rarely be found to be the case. It represents the ideal. After the second world war the Royal Air Force shares with the rest

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of the nation an urgent need for more suitable accommodation ; consequently the educational housing referred to above is often scattered. Generally speaking, however, it may be claimed that to a greater or lesser degree provision is made on the lines indicated above ; and in terms of that provision the senior station education officer and his colleagues are charged with the duty of carrying out the General Education Scheme as laid down in the above-quoted Air Ministry Order.

So far as the personnel are concerned, each person is invited to discuss his or her special needs with the station education officer, preferably as soon after arrival on the station as possible. Where, as so often happens, these needs fall into a pattern common to others, classes are arranged, either on the station or at an external technical or other institution. Where the need is purely individual, it is met by guided study, possibly by correspondence courses or by attendance at an external institution. The need may be related to the individual's ambition within the Service or to his plans for return to civil life. It may be strictly utilitarian, or strictly cultural, or it may be both. It may lie in the direction of formal study, or find expression in such organised cultural activities as a music circle, a discussion group, an art group, a handicrafts class, or a drama society. The General Education Scheme caters for all of them, and it is because of these varied and many-sided activities that provision has been made as enumerated above for the various types of rooms.

Special reference must be made to one element in the General Education Scheme. This is the provision of what is called the R.A.F. Education Certificate. Its purpose is to provide a tangible incentive to study, and in this respect it has a twofold application. On the one hand it sets a specific objective for the earlier stages of education. It is addressed to a definite syllabus on a prescribed range of subjects, culminating in an examination (held twice yearly) and, for those who succeed in reaching the appropriate standard, in the award of a certificate. On the other hand it constitutes a prescribed avenue to advancement and promotion within the Service. The examination is in two parts. Part I is in English, elementary mathematics, and general knowledge, and Part II requires a minimum of three

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subjects selected from additional mathematics, practical geometry and workshop drawing, general or engineering or household science, social studies, modern history, geography, and elementary French or German.

It is an accepted principle in the R.A.F. that as a preliminary condition for advancement all airmen and airwomen shall have reached a suitable standard of educational competence. What were known broadly before the second world war as promotion examinations were accordingly prescribed for all who aimed at reclassification to "leading aircraftman," and for all corporals who aimed at promotion to the rank of sergeant. These examinations were naturally suspended during the war years, but a return to the principle has now been decided. In future the passing of Part I of the R.A.F. Education Test is to be a prerequisite for reclassification to leading-aircraftman (or aircraftwoman), and the passing of Part II for promotion to the rank of corporal.

Such, in broad outline, is the framework of the educational plan in the R.A.F. of to-day. It follows closely the pattern foreshadowed for it by the present Director of Educational Services when, shortly after the conclusion of the Armistice in late 1945, he presented his proposals for the future to the Member of the Air Council to whom he was responsible ; he concluded with these words :

"The object is practical in the sense that such a basis is indispensable to a first-class and efficient Air Force ; idealistic in the sense that all fighting services, as part of the body politic, are made for men. What happens when the theory is applied that man exists for the State has been painfully obvious in recent years. To attract men of the best quality from all classes of the people in future the fighting services must provide a life and mental environment in keeping with the highest standards of the national community. There is no finer task than that which the Educational Service must perform in breaking down internal and external barriers of ignorance and prejudice, and in balancing professional skill with broader notions of citizenship. In these respects it is the aim to place the R.A.F. Educational Service high in the esteem of its parent organisation and in the forefront of educational progress."