


HIGHWAY FOR YOUTH



as an Apprentice

in the **Royal Air Force**



‘**THE ROYAL AIR FORCE** must be able to place the same reliance on the technical skill of its tradesmen as on the gallantry of its pilots and the experience and imagination of its commanders. Halton was the first school to be started for this purpose, and today it gives you not only technical skill but a spirit which is acclaimed wherever the Royal Air Force serves in defence of our Country and our Commonwealth.

‘It is right, therefore, that Halton should be the first Apprentice School to earn the award of a Colour, and I am sure that you will always remember this occasion, as I shall, as a great day for yourselves and for your Service.’

HER MAJESTY THE QUEEN,

*on the occasion of the presentation of the Queen's Colour
to No. 1 School of Technical Training, R.A.F. Halton,
on July 25th, 1952.*

Highway for Youth

SILVER WINGS of aircraft glittering in the sunlight, vapour trails lazing behind jet aircraft—what boy has not felt a thrill of pride at such sights as these? For, just as those who sailed with Drake symbolised the first Elizabethan age, so the Royal Air Force expresses the spirit of the Elizabethan age of today.

But interest does not die as the aircraft disappear beyond the horizon. His thoughts dwell on the fliers, the exciting array of dials and instruments at their command, the way the aircraft are built, how they are flown and navigated.

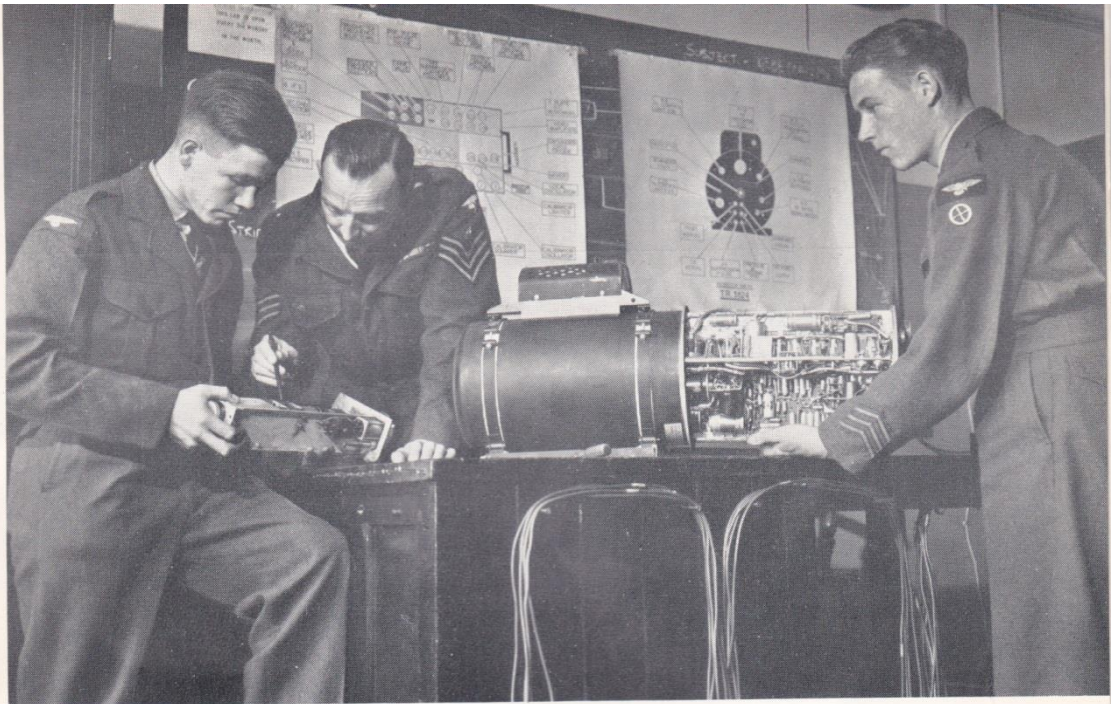
If he has an inquiring mind, he learns that behind the men who fly stand teams of men whose jobs are as varied as they are interesting. He learns that in the Royal Air Force are craftsmen who have learned a trade under first-class instructors in the finest schools, who live in a world always abreast of the latest technical developments. And that with these things go adventure, a healthy life and the sterling friendship of good companions.

By the time he leaves school the attractions of the Royal Air Force may have become so strong that he wants to join. This booklet explains how he should set about it.

He becomes eligible to join, as an apprentice or boy entrant, between the ages of 15 and 17½. As an apprentice or boy entrant he will learn a highly skilled trade. Aircraft apprentices train at Halton, Buckinghamshire, or at Locking, near Weston-super-Mare, Somerset. Administrative apprentices train at Hereford and Boy Entrants at Cosford, near Wolverhampton. His training will be both theoretical and practical and will include general school subjects and instruction in the organisation and traditions of the Service.

When he completes his training he becomes a fully qualified tradesman—one of the men responsible for the efficiency and *esprit de corps* of the Royal Air Force. Nearly all who enter the Service in this way will reach senior N.C.O. rank, and some, if they are of exceptional ability and possess the highest qualities, may be selected for appointment to a commission.

In other words, an apprentice or boy entrant gets a flying start in life.



An instructor shows aircraft apprentices how to 'fault find' airborne radar equipment.

Apprentices learn about the mechanism of a turbo-jet engine.



Three Forms of Service for Youths

THERE are three ways in which you can join the Royal Air Force as a youth. The first is the **Aircraft Apprentice Scheme**, open to boys between 15 and 17. It offers training in one of the following trade groups :

AIRCRAFT ENGINEERING
RADIO ENGINEERING
ARMAMENT ENGINEERING
ELECTRICAL AND INSTRUMENT ENGINEERING

The second is the **Administrative Apprentice Scheme**, open to boys between 16 and 17. It covers two trade groups :

ACCOUNTING AND SECRETARIAL
SUPPLY

The third is the **Boy Entrant Scheme**, open to boys between 15½ and 17½. The trade groups covered by this scheme are :

AIRCRAFT ENGINEERING
RADIO ENGINEERING
ARMAMENT ENGINEERING
ELECTRICAL AND INSTRUMENT ENGINEERING
GROUND SIGNALLING
CATERING

The age limits may be varied in exceptional cases.

The difference between the apprentice and boy entrant schemes is that the apprentice undergoes a much longer and more comprehensive training than the boy entrant. On successfully completing the course of training the aircraft apprentice is granted the rank of junior technician in an advanced trade, whereas the boy entrant is granted the rank of leading aircraftman in a skilled trade—see the career diagram on page 23. He has every opportunity to progress to the advanced trades as he gains more experience and theoretical knowledge.

Candidates for apprenticeships have to pass a qualifying examination and attend a selection board before they can be accepted in the Royal Air Force.



Training for a Career

THE training given to apprentices and boy entrants develops character and provides a first-rate technical and general education.

Theory is taught in the class-room and laboratory before practical work in the workshop. Beginning with elementary theory and simple practical work, the courses progress to the use of the most up-to-date equipment and techniques with the background theoretical knowledge required. The technical education provided in certain aircraft apprentice courses is recognised for the award of the Ordinary National Certificate in Mechanical or Electrical Engineering, or for the City and Guilds of London Institute's Intermediate Certificate; and in the administrative apprentice course for the award of the Royal Society of Arts' Intermediate Certificate.

At the same time subjects of general educational value, such as English, History and Geography, are included in the courses.



The courses of instruction for apprentices combine both practical and theoretical studies.



The most outstanding apprentices are awarded prizes at the end of each course. Presenting the prizes above is Air Marshal Sir Dermot Boyle, Air Officer Commanding-in-Chief, Fighter Command, R.A.F.

As every airman must be a fighting member of the Royal Air Force as well as a tradesman and a member of his unit, what is called 'General Service Training' forms part of the courses—this consists of fieldcraft, the use of weapons, drill and physical training.

The courses themselves differ in length : that for the aircraft apprentice lasts three years, for the administrative apprentice 20 months, and for the boy entrant 18 months.



Aircraft engineering apprentices at Halton set to work overhauling a Meteor jet fighter.

Aircraft Engineering Trade Group

ENGINE FITTER
AIRFRAME FITTER
ENGINE MECHANIC
AIRFRAME MECHANIC

Aircraft Apprentices

” ”

Boy Entrants

” ”

WITHOUT the work of the engine fitters and mechanics, Service aircraft could not fly. On these and other vital ground tasks depend the lives of the aircrew and the success of an operation. Their main task is to keep the engines and the subsidiary equipment of the aircraft working faultlessly.

As the Royal Air Force must be in the forefront of aviation progress, it will always be developing its technique and keeping its skill up to date. Each advance in aviation calls for new skill, a skill which has a related demand in civil

life. The engine built by the Wright brothers in 1903 weighed 20 lb. for every single horsepower unit of output ; today the latest jet engines weigh as little as one-tenth of a pound for every horse-power unit. That is only one instance of the constant progress being made. Engines are produced today which are scheduled to run for 600 hours—equal to about 120,000 miles—before a change is necessary.

Working on aero-engines in the R.A.F., the engine fitter and mechanic will see aviation history in the making. They may even help to make that history themselves. They will receive every encouragement to do so, as did Air Commodore Sir Frank Whittle, the pioneer of the jet engine, who was once an aircraft apprentice.

Just as aero-engines have become more complex, so too have the airframes. In the early days of flying the airman who looked after the airframe was called a rigger. This was appropriate enough when aircraft were small biplanes of wood and fabric structure. The structure of the modern aircraft has developed almost out of recognition, and with it the airframe fitter's skill.

In addition to the basic structure and the flying controls—elevators, ailerons and rudder—an aircraft has innumerable mechanical devices made necessary by higher speeds and altitudes, all-weather flying and crew comfort. To mention only a few of them—heating, pressurising and ventilating systems, wing flaps, and power-operated controls.

All these devices, as well as the aircraft structure itself, are the responsibility of the fitters and mechanics working on the airframe. As with all the fitter and mechanic trades, they carry a high degree of responsibility.

An instructor explains the layout of a Vampire cockpit to a group of keen apprentices.





An instrument fitter concentrates as he adjusts a faulty boost pressure gauge.

intricate bomb and gun sights, and navigation instruments. Bombs can now be aimed with much greater precision ; guns can be trained with automatic allowance for deflection and angle of flight ; navigation instruments show the navigator how far and on which headings he has travelled, and, after allowing for wind, the exact position of his aircraft. The vast strides in aerial photography over recent years have added further interesting equipment to the growing list of instruments. All these must be kept at the peak of efficiency by the instrument fitter and mechanic.

It is precision work which is vital to the Royal Air Force, fascinating in itself, and the skill it develops is a permanent asset.

Armament Trade Group

ARMAMENT FITTER *Aircraft Apprentices*
ARMAMENT MECHANIC *Boy Entrants*

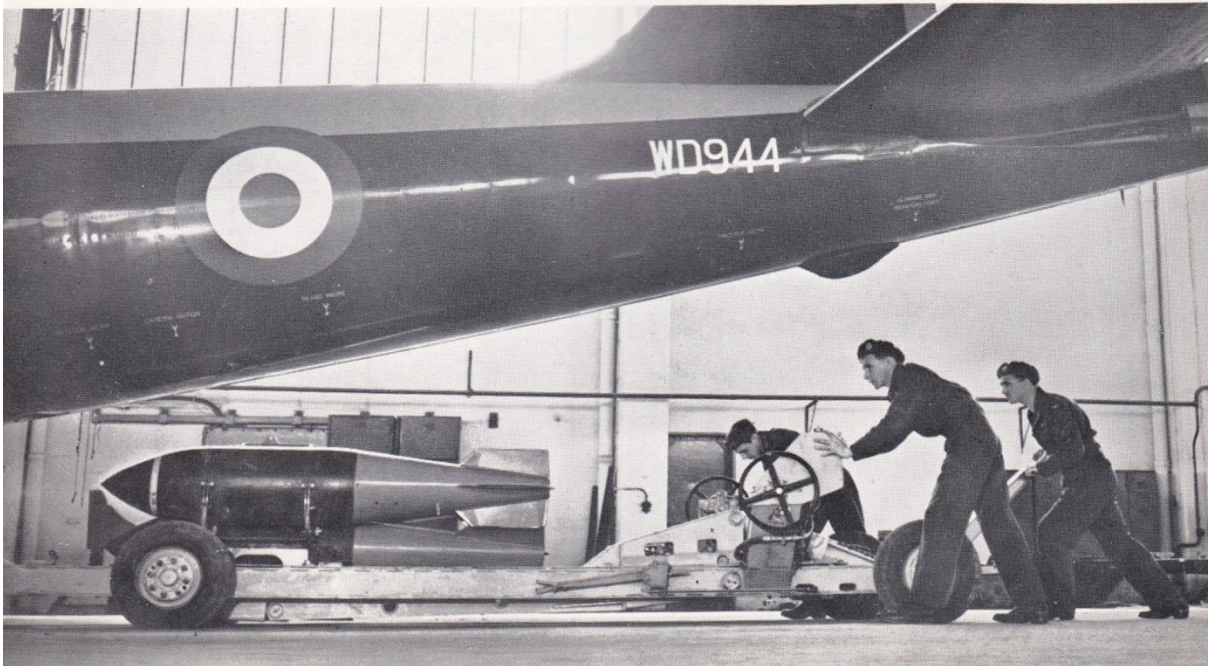
‘WITHOUT armament there is no need for an air force,’ said Marshal of the Royal Air Force Lord Trenchard on one occasion. Aircraft armaments are in fact the teeth of the R.A.F. These teeth—bombs, guns, rockets and the rest—must still be kept sharp and effective. So armament training is particularly thorough, and varied.

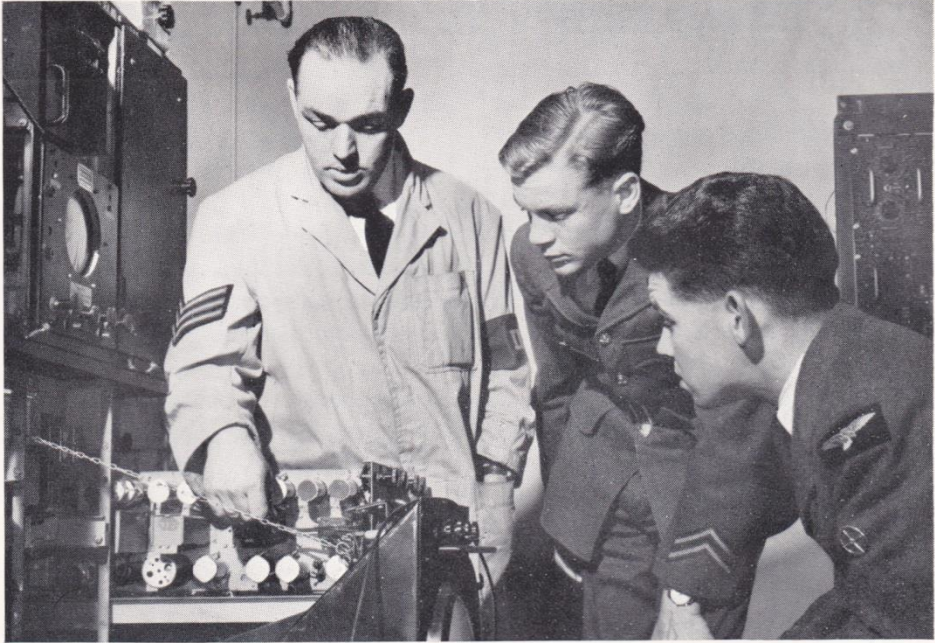
The armament tradesman is responsible for seeing that bombs and gun ammunition are in perfect order; he services the guns, as well as rocket projectiles and their carriers, gun turrets, bomb-carriers and release gear, pyrotechnics, flares and markers.

In the Station Armoury it is his duty to look after all rifles, pistols and other weapons. At times he may make parts for guns or other pieces of armament, calling for a high degree of skill and precision.

To achieve the standard of knowledge required he is given a sound basic engineering education and a working knowledge of such subjects as metallurgy, electricity and the chemistry of explosives.

Armourers at work on a Canberra, the fastest light bomber in the world.





An instructor at R.A.F. Locking, Somerset, explains the servicing of a radar console to radio engineering apprentices.

Radio Engineering Trade Group

AIR RADIO FITTER

GROUND RADAR FITTER

GROUND WIRELESS FITTER

AIR RADAR MECHANIC

AIR WIRELESS MECHANIC

GROUND RADAR MECHANIC

GROUND WIRELESS MECHANIC

Aircraft Apprentices

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Boy Entrants

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Signals—radar, wireless telegraphy and the rest—are indispensable to the efficiency of the Royal Air Force. There is scarcely any Service activity in which radar or wireless does not play a part. Britain's frontier is now her radar chain and without it fighters and guns cannot be given early warning or directed



to the attack. Nearly all forms of navigation depend on wireless or radar. Precision bombing through cloud, guiding an aircraft to base and enabling it to land in bad visibility, locating enemy submarines, carrying out air-sea rescues, are all examples of the operational uses of radar and wireless.

Apprentices and boy entrants training for any of the radio engineering trades are taught mathematics and mechanics, engineering and drawing, electricity, and the basic theory of wireless and radar. Their practical work includes the installation, alignment, testing, inspection, fault diagnosis, servicing and repair of the equipment which is their particular concern.

This equipment ranges from the massive aerials and arrays of ground radar stations to the small radio-telephony sets carried by fighter aircraft. In the field of radar alone an air radio fitter may be called upon to deal with as many as eight different forms of apparatus varying from a comparatively simple radio altimeter—for showing the height of an aircraft above ground—to the highly complex air interception equipment of a night fighter. Radio fitter apprentices build a civilian type wireless receiver as part of their training and this becomes their personal property on passing out.

Boys who enter the Radio Engineering trade group get a valuable introduction to the new and exciting development of electronics, with all its possibilities for future advancement and expansion in the fields of radio, television, broadcasting and computing.



Airborne radar equipment is of the greatest importance in these times of high-speed flying.



Teleprinter operators send out signals : an efficient communications service depends on their skill and accuracy.

Ground Signalling Trade Group

TELEGRAPHER II

Boy Entrants

AN efficient signals service is of the greatest importance to the Royal Air Force, and so a considerable number of skilled tradesmen are needed to keep the service in continuous operation.

Boy entrants trained as telegraphists learn to operate both wireless and line telegraph equipment. They must therefore master morse signalling and teleprinter operating, signalling procedures and the signals office routine.

Wireless direction finding stations are often used by aircraft as navigational aids, and the operation of direction finding equipment is an interesting and important part of a telegraphist's training.



Rhythm in typing is all-important. Administrative apprentices learn by typing in time to music from a radiogram.

Accounting and Secretarial Trade Group

PAY ACCOUNTANT
CLERK (SECRETARIAL)

Administrative Apprentices

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THE Royal Air Force is one of the biggest and most complicated businesses in the country, with commitments all over the world. It naturally requires a large clerical staff to undertake a great variety of duties.

An apprentice training as a pay accountant is taught the principles of book-keeping and accounts and P.A.Y.E. income tax to enable him to look after air-men's pay and allowances and officers' allowances accounts, to prepare and maintain the civilian pay and P.A.Y.E. records and to keep the official accounts of



Pay account clerks use the latest office machinery in making out the pay sheets.

the dispersement of public monies. He is also instructed in the treatment of correspondence and files, in office routine and procedure, and in the operation of office machinery. All these duties naturally call for a high standard of accuracy and integrity.

The clerk (secretarial) apprentice is taught, among other things, shorthand, typewriting, the treatment of correspondence and files, and office routine and procedure. His duties include the keeping of officers' and airmen's personal records and documents and the general clerical work of various offices. He may have to prepare documents for courts of inquiry and courts martial, and he may in addition be given specialist work on statistics, maps, flying and technical records, air publications, postal services, medical and hospital administration and mechanical transport.

Apart from the variety of the work, another feature which distinguishes this from most administrative and office work is the amount of outdoor activity and overseas life associated with it. Not every young man may wish to fly, but those with a liking for administration can in these trades be associated closely with the adventure of flying and the life of the Royal Air Force.

Supply Trade Group

SUPPLIER I

Administrative Apprentices

WITHOUT the Supply trade group no unit could be fully efficient. The supply organisation procures and distributes all equipment and stores, from aircraft to clothing, and organises the moving of all R.A.F. freight and personnel by air, land and sea. It is manned chiefly by suppliers who act not only as storemen but also undertake related clerical duties such as equipment accounting and provisioning.

A few figures give an idea of the size of the supply organisation. It has over 800,000 different items of equipment from airmen's boots to complete aircraft. During one year, over two million orders for the supply of equipment were received by Maintenance Command Supply Units, 130,000 tons of equipment were shipped overseas, and 750,000 tons of equipment were handled by Storage Units in Maintenance Command. In the United Kingdom alone, the main Supply Units use 36 million square feet of covered storage space. Nearly 2,000 contractors are producing equipment for the Royal Air Force.

The supplier receives and issues all Service equipment. He is also engaged on skilled packing and packaging, on duties involving the safe and scientific loading of transport aircraft, and the movement of all personnel. His training is given a technical bias so that he can better meet the needs of technical tradesmen. After his training he may go to an operational station where he will help supply the needs of the squadrons and personnel. He may work at a large base depot, at a seaport in an Embarkation Unit, or in the Passenger and Freight section of a Transport Command airfield.

'The right equipment in the right place at the right time' is the motto of the supply organisation of the Royal Air Force. The supplier is mainly responsible for achieving this aim.



Administrative apprentices in the Supply trade group must be familiar with all types of aircraft equipment.

Catering Trade Group

COOK II *Boy Entrants*

THE efficiency of the Royal Air Force depends on the well-being of its officers and men, and the part played by good food in maintaining a high morale cannot be exaggerated.

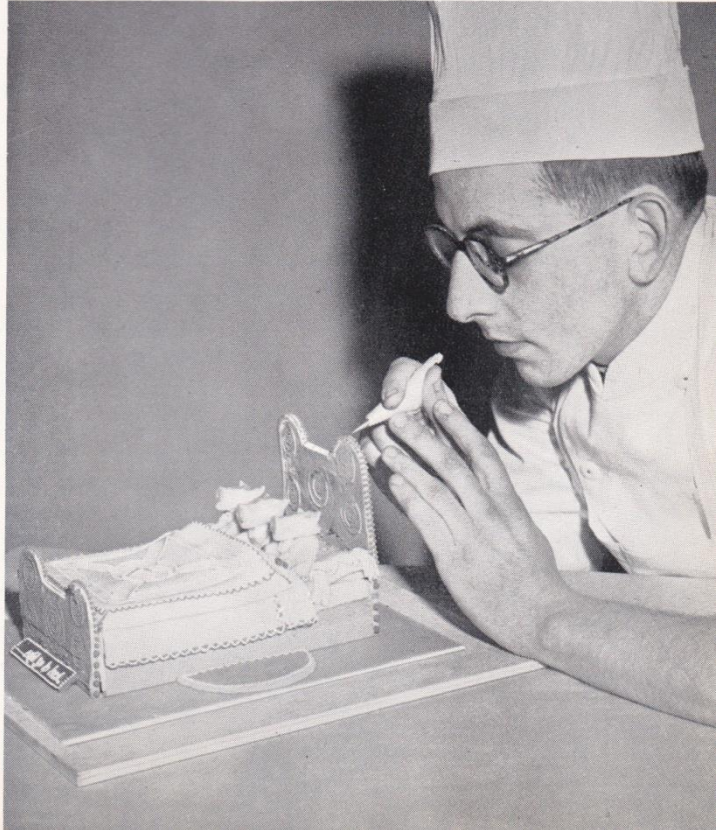
The Catering trade group has won a high reputation for the skill of its catering staff and the high standard of the food in Royal Air Force messes. For boys who are interested in the catering trade this is an excellent means of gaining a first-class training and the necessary experience.

The Royal Air Force School of Cookery is fitted with the latest types of electrical equipment such as is installed in the most modern hotels. A Royal Air Force Catering Officer, assisted by experienced N.C.O. chefs, instructs the boys during their eighteen months' course, and the trade training covers all branches of catering. In addition to the preparation and cooking of soups, sauces, sweets, pastries, vegetables, meats and yeast products, the course includes both practical and theoretical training in the care and maintenance of kitchen equipment and the control of stock. Instruction in dietetics and hospital dietary is also given.

Training takes place under the best possible conditions, but the boys are also taught to carry out their trade under conditions such as they might encounter in the field.

The training given is recognised for the purpose of the qualifications required for the award of City and Guilds Technological Certificates.

A boy entrant training as a cook decorates a catering exhibit.



Promotion Prospects

THERE are three separate stages in the ordinary tradesman's career. They are :

TRADE ASSISTANTS
SKILLED TRADES
ADVANCED TRADES

During your training as an apprentice or boy entrant, you will already have covered the 'Trade Assistant' stage. As you have read in a previous chapter, apprentices start their career in the regular R.A.F. in advanced trade groups, and boy entrants in the skilled trades, with pay accordingly.

The main object of the R.A.F. Apprentice Scheme is to provide the Royal Air Force with a core of highly skilled technicians and senior N.C.O.s, on which the foundations of an efficient ground staff depend.

If you look at the diagram on the opposite page you will see that, under the Trade Structure in the R.A.F., two roads of promotion lead to the highly paid jobs. If you possess the ability to lead others there is the normal command career through the ranks of corporal, sergeant, up to warrant officer. But if you are a good technician, promotion can also be gained through the technician ranks of corporal technician, senior technician, chief technician, up to master technician.

If they are really outstanding, aircraft and administrative apprentices may be offered cadetships leading to a permanent commission. It should be stressed that only apprentices of extraordinary merit are selected for cadetships, but those not selected will of course have the same opportunities as all airmen in the Service of being selected for commissions in one or other of the ground branches.

In addition to these opportunities, apprentices or boy entrants who want to fly may at the end of their course apply for commissions in the General Duties (Flying) Branch as pilots or navigators, or for a place as an N.C.O. air signaller. But again, only those who come up to the high standards applied by the Aircrew Selection Centre will be considered for flying duties.

See how your career goes ahead

COMMAND CAREER



SKILLED TRADES
(Lower Pay Scale)



ADVANCED TRAINING



COMMAND CAREER



ADVANCED TRADES
(Higher Pay Scale)



TECHNICIAN CAREER



APPRENTICE

BOY ENTRANT



A display of physical training by administrative apprentices.

Apprentices and Boy Entrants Lead a Full Life

ONE great difference between working in industry and being apprenticed in the Service is that a civilian firm will teach a young man a trade and is not usually concerned with him outside working hours : but in the R.A.F. an apprentice or boy entrant leads a life which is in every respect full and complete.

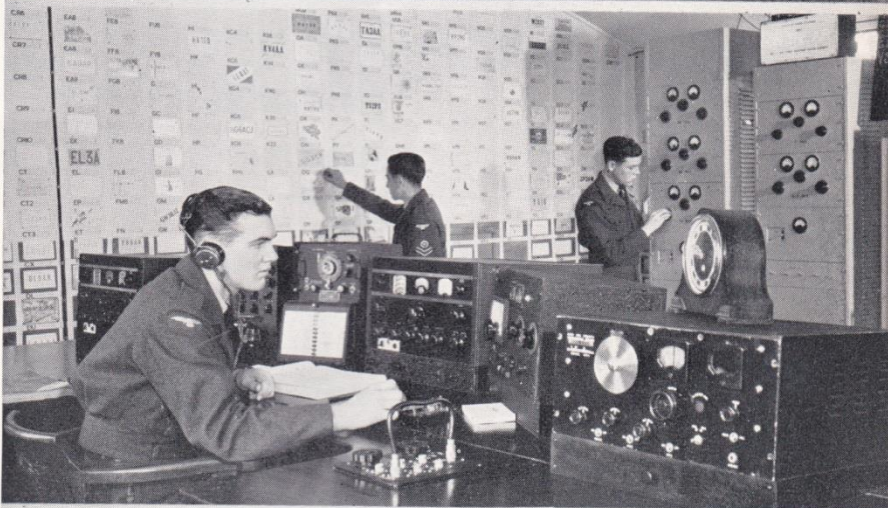
All the Apprentices' Schools are housed in fine buildings and stand among acres of their own grounds and playing fields. The apprentices' living and off-duty quarters are planned to allow the maximum of light and air. The boys sleep in dormitories and eat in clean, spacious messes of their own. Four good meals a day are provided, and an apprentice usually gains a stone or two in his first year. Buildings are also provided for their clubs—canteens, reading and writing rooms, libraries and recreation rooms equipped for billiards and other games.

One afternoon each week is devoted to sport, and in addition all apprentices are encouraged to play games as often as they can. All the schools have extensive, well-kept playing fields—football and cricket pitches, and magnificently equipped gymnasiums. In addition, the schools at Halton and Cosford have swimming

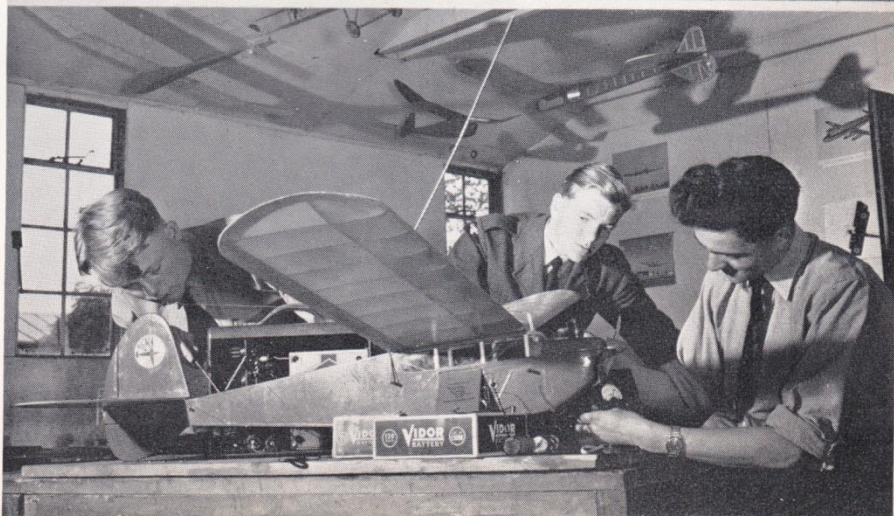
Apprentices enjoy a game of football on their sports afternoon.



At No. 1 Radio School, Locking, Somerset, there are many keen amateur radio enthusiasts who have the use of an up-to-date broadcasting station.



These apprentices have a well-fitted workshop to use, where they design and build their model aircraft.



pools. In these conditions apprentices can enjoy even such sports as fencing which are normally beyond the reach of most boys because of the expensive equipment needed. First-class coaches teach swimming and athletics, and full athletic meetings are held each year. Colours are awarded to apprentices representing their wings in all major games such as football, rugby and cricket.

Constructive hobbies of all kinds are encouraged, too, and all schools have their societies which cater for scores of hobbies and pastimes—model engineering, photography, amateur theatricals, chess, angling, sailing, gliding, amateur radio and so on. Apprentices can join any branch they wish for a very small subscription which entitles them to use the equipment available for the hobbies they choose. Discussion groups and debating societies flourish, and apprentices contribute to the school magazines. Station cinemas show the latest films at very low prices.

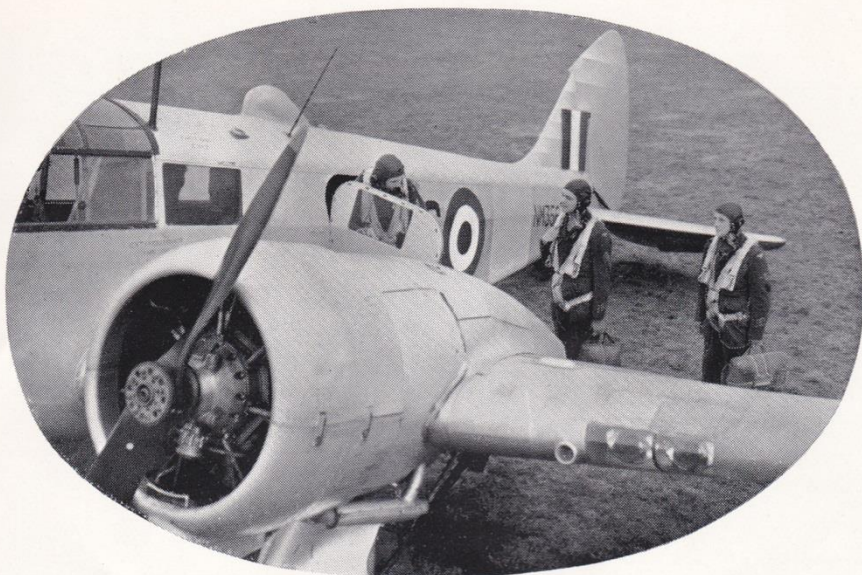
Paid leave is generous, the holidays adding up to about six weeks each year, and free travel warrants are provided to the boys' homes and back.

The apprentices are treated all the time very much as growing, developing young men. Chaplains of all the principal religious denominations care for their spiritual and moral welfare. The officers take a personal interest in their daily welfare and development, and training apart, the first consideration is their health and general well-being.

There are few apprenticeship systems which can offer as much in the way of material advantages, and probably none able to offer the sum total which these R.A.F. training schemes can give.



A game of cricket in progress at R.A.F. Station, Locking, Somerset.



*Apprentices are encouraged to gain as much air experience as they can.
These boys are just going for a flight in an Oxford aircraft.*

How to Join

THIS BOOKLET is intended to explain the forms of service open to a young man under 17½ who wishes to join the Royal Air Force and the kind of life he may expect to lead as an apprentice or boy entrant.

Full details of how to enter, how apprentices and boy entrants are selected, and of the physical and educational standards expected, are contained in Air Ministry Pamphlet 293. This may be obtained from any R.A.F. Recruiting Centre—a list of them is given in this booklet—or by writing to the Air Ministry, Victory House, Kingsway, London, W.C.2.

Never before has this country so needed an air force of the finest-quality men. Never before have there been such great opportunities for those men in the Royal Air Force.

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NOTE: As changes in terms and conditions of service in the Royal Air Force may occur from time to time, everything in this booklet is subject to any regulations which may be issued by the Air Council.

Recruiting Centres

ABERDEEN	Crown Mansions, 41½ Union Street. 28606	LEICESTER	36 London Road. 65940
BELFAST	64 Clifton Street. 20670 and 20679	LINCOLN	36 Broadgate. 10191
BIRMINGHAM	1a Albert Street. Cent. 2923	LIVERPOOL	Pownall Square, Pall Mall. Cent. 7281
BLACKHEATH	21 Lee Road, S.E.3. Lee Green 1603	LONDON	Victory House, Kingsway, W.C.2. Hol. 3434, Ext. 927
BRADFORD	11/17 Barry Street. 20987	MANCHESTER	Hardy's Buildings, 3 Cateaton Street. Deansgate 6055/6
BRIGHTON	56 West Street. 24732	MIDDLESBROUGH	75 Grange Road. 43026
BRISTOL	12 Whiteladies' Road, Clifton. 36856/7	NEWCASTLE	8/10 Sandyford Road. 28748
CAMBRIDGE	19/20 Market Street. 58271/2	NORWICH	Martineau Hall, Colegate. 24670, Ext. 2
CARDIFF	12 Frederick Street. 27626	NOTTINGHAM	120 Derby Road. 46407/8
CARLISLE	9 The Crescent. 23359	OXFORD	Government Buildings, Marston Road. 48041, Ext. 167/8
CHATHAM	68 High Street. 45285	PLYMOUTH	Prudential Buildings, Armada Way. 4572
COVENTRY	9 Park Road, 61393/4	PORTSMOUTH*	Ministry of Labour Buildings, Lake Road. 74881
CROYDON	12 London Road, West Croydon. 3731	PRESTON	121 Church Street. 56500
DERBY	6 The Strand. 47955	READING	23a Queen Victoria Street. 60650
DUNDEE	12 Cowgate. 6250	SHEFFIELD	70 Cambridge Street, Moorhead. 23301/2
EALING	25 Haven Green, Ealing Broadway, W.5. Perivale 8822/3	SOUTHAMPTON	16 Archers Road. 5230 and 5239
EDINBURGH	95 Princes Street. 34074/5	SWANSEA	Central Buildings, 23 Fisher Street. 55643
EXETER	22 Queen Street. 54204	WOLVERHAMPTON	32/40 Broad Street. 24104
GLASGOW	38 Sauchiehall Street. Douglas 7131/2	WORCESTER	Shaw Street, Angel Place. 4683
HULL	P.O. Buildings, Jameson Street. 15903	WREXHAM	16 Bridge Street. 3554
ILFORD	233 High Road. 3866		
INVERNESS	23a High Street. 1518		
IPSWICH	8 Tavern Street. 4526		
KINGSTON-ON-THAMES	Neville House, 55 Eden Street. 7451		
LEEDS	54 Cookridge Street. 32914/5		

* Enquiry Office only.

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An aircraft apprentice fixes a new panel to the mainplane of a Vampire jet fighter.

