

*The*  
DE HAVILLAND  
AERONAUTICAL  
TECHNICAL  
SCHOOL



H A T F I E L D   ·   H E R T S



The entrance to the office building of the new de Havilland establishment at Hatfield.

# *The* **NEWEST** **of the Great Professions**

Of recent years the march of progress has become so rapid that those faced with the problem of choosing a life career may well pause to ask themselves : " If I take up this or that where shall I be a few years hence—still in the run of things or a back number almost before I have started? "

But to those possessing the necessary bent the problem is quite easy of solution. A career in the technical side of aeronautics cannot end blindly, for the science of aviation is the key to all future transport. In peace or in war, the world of the future must have aeroplanes. And, before an aeroplane can be flown, it must be designed and built. Before it takes the air a thousand expert checks must be made. Then it must be tested and passed as airworthy. Even at that the need for the technical man does not cease. For machines must be maintained ; their journeys must be controlled.

Here is work for men, not machines. Machines cannot tackle the task, nor can men—unless they be expert by reason of long and intensive training.

It was to meet this need that the de Havilland Aeronautical School was founded. The newly-equipped School offers thorough training in every branch of the industry. Design, Business, Piloting, Ground Engineering, Works Management, Aeronautical Inspection, Air Transport Service and Aerodrome Management are only some of the branches catered for.

# A Record of Success

It has often been said that one should never judge a School by its Prospectus, but should be guided by the successes achieved by its teachings. Look, then, at some of the successes of the de Havilland School :

- Air Ministry :** Eleven out of twelve recent appointments to the A.I.D. were secured by de Havilland students.
- Indian A.I.D. :** Two principal assistants are ex-de Havilland students.
- Airways :** Imperial Airways, Hillman Airways, Portsmouth-Southampton-Isle-of-Wight and the other Air Services all employ numbers of de Havilland students on executive aircraft engineering duties.
- Egyptian Government :** Students have been sent to this School for training as Government Inspectors.
- Aircraft Manufacturers :** Ex-students hold responsible positions on the design, works, sales and testing staffs of The de Havilland Company, Ltd., as well as with other manufacturers both at home and abroad.
- Ground Engineering :** Over 500 licences have been issued by the Air Ministry to de Havilland students during the last four years—a fact which speaks volumes for the thoroughness of the training given!—and these men have found employment with :— Imperial Airways ; The Maharajah of Jodhpur ; The British Air Navigation Co. ; The Persian, Egyptian, Indian and Nyassaland Governments ; Tata Air Lines ; The Chinese Eastern Corporation ; Air Taxis, Ltd. ; Morris Motors, Ltd. ; British Aeroplane Co., Ltd. ; Handley Page, Ltd. ; Birkett Air Services ; Blackpool & West Coast Air Services ; Olley Air Services, Ltd. ; and with various Flying Clubs in Great Britain and abroad.



#### AERIAL VIEWS OF DE HAVILLAND FACTORIES

Above, the vast new establishment at Hatfield, of which the Technical School forms part, where de Havilland aeroplanes are built. The aerodrome is seen in the background. Below, the factory at Stag Lane, Edgware, which houses the Gipsy engine, Controllable-pitch airscrew and special aircraft shops.

# Method of Training

The Method of Training is such as to give the student the most thorough instruction possible in all the processes and principles involved in the manufacture and maintenance of aircraft of all sizes. In this respect The de Havilland Company has unrivalled facilities. Their new factory at Hatfield is the most modern in the country. It produces all types of machines, ranging from small sporting aircraft up to large and fast passenger transport.

Then there is the Engine Works at Stag Lane, Edgware. Here are complete and most up-to-date facilities—machine shops, erection bays, engine test houses equipped with a dozen dynamometer and other forms of testing brakes for the production of the famous range of Gipsy Engines.

In addition to the production of Gipsy Engines, this factory houses the equipment and highly-specialised plant for making and testing controllable-pitch propellers not only for Gipsy power units but for those of other aircraft manufacturers as well.

The Company's Laboratory is exclusively employed in checking and testing raw materials and finished components. A micro-camera and a very comprehensive range of physical testing machinery are constantly in use controlling and improving the quality of the finished work.

Thus it will be seen that the de Havilland claim to have unrivalled facilities is no idle boast. The facilities exist, and, in consequence, students enjoy remarkable

opportunities for the gaining of essential experience.

A good educational background and satisfactory character is required of the prospective student. The first six months of his training is regarded as a probationary period, at the end of which it is possible to decide whether the student is sufficiently promising to justify the continuance of his training.

He spends some months in the School workshops learning to use hand and machine tools on both wood and metal. This is followed by periods in all departments of the factory: woodwork, metal fitting, machining, welding, heat treatment, anti-corrosion treatments, fabric and doping, mechanical testing laboratory, etc. All the work he does is subject to the inspection of A.I.D. and works inspectors. Exactly the same standard of finish as that of a skilled workman must be attained.

A sense of responsibility is thus induced at the beginning of the student's training. It will be appreciated that this experience of a very high standard of workmanship will be invaluable in his later career, whatever branch of aviation he takes up. But experience is not merely a measure of time, but of the student's capacity to absorb knowledge and of his powers of observation and deduction.

Running parallel with the day-time training in practical engineering are Evening Classes held on the Company's premises,

The advantages are many and students will appreciate the convenience of not being required to travel some distance from the works. The subjects include :

- Aero-Mathematics ;
- Aero-Mechanics ;
- Aero-Dynamics ;
- Aero-Drawing and Design ;
- Aircraft Materials ;
- Ground Engineering ;
- Machine Tool Drawing ;
- Factory Organisation.

The theoretical subjects are taught by lecturers who are members of the firm's design and technical staff who obviously have a wide experience of the everyday problems of design and construction and are able to impart much more than an academic or textbook knowledge of their subjects. The student gains more than the advantage of this, for he is studying the theory concurrently with the practice and can appreciate the relationship between the two. He sees the different problems in a truer perspective than one who concentrates alternately on theory and practice as with the university trained man.

Gradually the student begins to realise in which branch of aviation lies his best hope of advancement. If, for example, he contemplates going into air transport and favours ground engineering, he may get further experience in engine and aircraft maintenance, aerodrome service, and so forth. If, on the other hand, he wishes to go into design, he spends perhaps a year in the School Drawing Office. Here he begins with the principles of simple mechanical

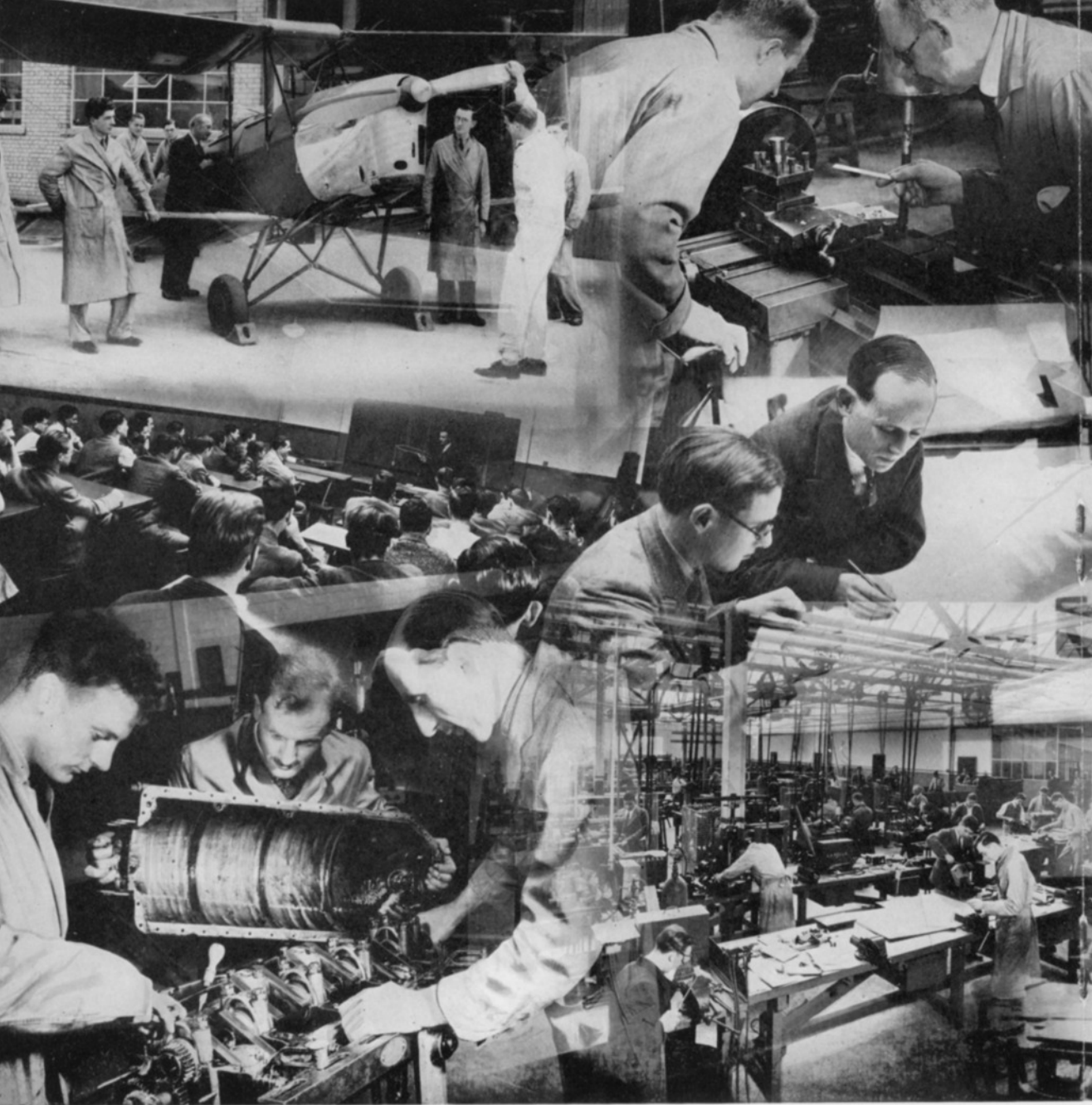
drawing and works up to the designing of the complete aeroplane, including all the performance and strength calculations.

## NO "SPECIMENS"—ALL WORK IS SPECIFIC !

No "specimen" work is done and every drawing and calculation he makes is for a specific design which is being built and which may be flown. This department was entirely responsible for the design of T.K.1, a two-seater biplane which took fifth place out of a field of 43 in the 1934 King's Cup Race! This machine was designed and constructed in the School by the students. A second design, T.K.2, a low-wing cabin monoplane, is following through in a similar way. Incidentally, eight machines of the "Moth" type have also been built by the students by way of workshop experience. These machines were constructed to A.I.D. standards and have been licensed for flight.

## CHOICE OF DEGREES

The student who has gone through all the steps in the design of an aeroplane and having been made responsible for his work, is in the right state of mind to take up a position in any aircraft design department. The desirable qualification for an aircraft designer or draughtsman is that of Associate Membership of the Institution of Aeronautical Engineers (A.M.I.Ae.E.) or Associate Fellowship of the Royal Aeronautical Society (A.F.R.Ae.S.). These have equivalent examinations held by the same



**ACTIVITY.** The above photo-montage conveys graphically the many subjects in which students receive instruction on the use of a lathe.

An aeroplane built entirely by Students leaves the factory for first test.

A lesson in aircraft design.

A general view of the Technical School machine shop.





instruction. The individual attention paid by instructors is also indicated in many of the pictures.

*Students assembling a wing under the guidance of an instructor.*

*Detail assembly of an engine mounting.*

*The Technical School Drawing Office.*

*Working on the fuselage of a new aircraft designed by the students themselves.*

*Proof loading a wing of the same machine.*

*Students installing an engine.*

examining authority ("The Royal Aeronautical Society, with which is incorporated the Institution of Aeronautical Engineers").

*By an arrangement with this authoritative body, students of the de Havilland Technical School may be exempted from the examination if a sufficiently high standard is reached in the School's own examinations. A double examination is thus avoided. Each year the best students are put forward for this exemption and in the last three years since the scheme came into operation about fifty per cent. of the Senior Class have thus qualified.*

After passing through the School Drawing Office the student may complete his training in one or more of the drawing offices of the firm, on aircraft, engine, or propeller design.

In brief, the de Havilland School gives a thorough grounding in Aeronautical work and, during this process, special steps are taken to find the best in each individual and then to develop this fully. Theory finds its proper place in the course. The student learns practice and he eventually sees the result of his work—flight! From beginning to end, the Directors of the Company employ very strict supervision over the students' welfare, and parents need never fear that time will be wasted.

### QUALIFICATIONS FOR ADMISSION

In order that they shall be at least 21 years of age when eligible to take the Ground Engineers Examination conducted by the Air Ministry, candidates must be at

least 18 years of age for the three years' Course and 19 years old for the two years' Course. Design and Production Engineer students taking the four years' Course (see details shown later in this Prospectus) may commence at the age of 17.

A good standard of general education is required, such as the School Certificate with several Credits, or the London Matriculation Examination. This standard is highly desirable, but in cases where the candidates can give evidence of satisfactory technical instruction, together with sound common sense and an irreproachable character, the School Committee is prepared to consider each case on its merits.

### WORKING HOURS

At first the student is accommodated in the Technical School buildings, when the hours are as follows :

Monday to Friday

9 a.m. to 12.30 p.m.

1.30 p.m. to 5.15 p.m.

Saturdays :

9 a.m. to 12 noon.

After preliminary instruction in the Technical School proper, he is posted to the various Workshops of the Company, and must strictly conform to the hours of working laid down for the particular Department or Shop, which are normally :

Monday to Friday :

8 a.m. to 12.30 p.m.

1.30 p.m. to 5.30 p.m.

Saturdays :

8 a.m. to 12.30 p.m.

## BOARDING ACCOMMODATION

Students are advised to obtain suitable accommodation in the vicinity of the Hatfield Works or of the Engine Shops and Controllable Pitch Airscrew Shops at Stag Lane. The addresses of several persons who are desirous of accommodating students at moderate inclusive terms may be obtained on application to the Principal.

## FEES

In order to save the expense to candidates of embarking upon a complete Course from which they are unlikely to gain full benefit, a probationary period of six months is necessary for those undertaking two or three year Courses. The fee for this probationary period is 60 guineas, which therefore should be deducted from the fees shown below :

Two years' Course for students aged 19 or over, who have had some previous engineering experience ... **Fee 200 guineas**

Three years' Course for students aged 18 or over. **Fee 250 guineas**

Four years' Course for students aged 17 or over. **Fee 300 guineas**

The fees for Short Courses are laid down in the special paragraph dealing with the subject.

All fees are payable in advance. In special cases, to suit the convenience of students, these fees may, by special arrangement with the Company, be paid in four or six instalments at six-monthly intervals.

Where, however, this method of payment is agreed upon, an increase of 10 per cent. on the fees mentioned is charged.

## THOROUGHNESS THE KEYNOTE

From time to time in this booklet stress has been laid upon the thorough nature of the de Havilland training. The following is a list of the Departments students will, at the discretion of the Principal, be expected to work through :

- Technical School Workshops
- Fitting Department
- Panel Shop
- Erecting Shop
- Fabric Shop
- Dope and Paint Shops
- Wood Detail
- Wood Mill & Wood Inspection
- Aeroplane Assembly Shops
- Engine Department "A"
- Engine Department "B"
- Engine Stripping & Testing Shop
- Controllable-pitch Airscrew Dept.
- Jig & Tool Room
- Case Hardening & Heat Treatments
- Inspection Department
- Laboratory
- Aircraft Fitting Inspection
- Repair and Service Department
- Aerodrome Service
- Business Routine
- Drawing Office

On the satisfactory completion of this long course of training the student will find that he has a thorough grasp of the manufacture, testing, maintenance and repair of Aircraft and Aero Engines and is equipped to take his proper place in his profession.



STUDENTS AT THE DE HAVILLAND AERONAUTICAL TECHNICAL SCHOOL pass through every department of the Company's factories. Above are views of (top) one of the erecting shops in the great modern works at Hatfield and (lower) the sheet metal shop with the machine shop in the background. The whole factory is laid out on the most modern scientific lines.

## FOUR-YEAR COURSE FOR DESIGN AND PRODUCTION STUDENTS

It has been decided by the School Committee to offer Courses of four years' duration in addition to the present well-known two and three years' Courses. The subjects dealt with will, as formerly, be Aeronautical Engineering and Aeronautical Design, and in order to fill the demand for Production Engineers a limited number of students will be accepted for training in this branch.

The qualifications for admission, excepting minimum age limit, will be as laid down in this Prospectus. The minimum age is now seventeen years instead of eighteen.

### AIRCRAFT DESIGN

The Design Course was inaugurated three years ago, and the position is now that the School cannot fill all the vacancies which are occurring and which might be filled by ex-students. The training begins with two years in the workshops, learning the practical side of aircraft construction which is so necessary for a complete understanding of all the problems which face the designer. This is followed by two years on actual design work spent in the School Drawing Office and one of the Company's drawing offices.

It is hoped that by this extension of the School and its curriculum it will be possible to meet the growing demand for properly trained designers with both practical and theoretical experience.

## PRODUCTION ENGINEERING

Of late there has been a steady demand for engineers who are skilled in methods of production, costing, routing, and planning. This work is highly specialised and engineers trained in these methods are regarded as important factors in aeronautical engineering manufacture. Provided the candidate has a strong engineering bent and good personality, together with the capacity to control, there is much scope for production engineers. The training is such that the principles can be applied to engineering generally and not specifically aeronautical engineering. The production engineer student will conform to an approximate time schedule, but each student will be carefully studied and his course modified as necessary to ensure that any previous training he may have had shall be brought into use and additions made in accordance with the latest practice.

### SHORT AND REFRESHER COURSES

Courses of short duration are available for engineers who have had previous aircraft experience, and who require their knowledge to be brought up-to-date in order to qualify or re-qualify for Air Ministry licences. In addition, private aircraft owners who are desirous of undergoing training for their Pilot's Licences, or otherwise, are similarly accommodated. The actual length and extent of the training necessary can be decided after consultation with the Principal.

	Six months ...	60 guineas
FEES	Three months ...	35 guineas
	One month ...	15 guineas

## SUBSEQUENT EMPLOYMENT

In this connection it should be clearly understood that the Company can give no guarantee to find work for students who have completed the Courses. But ample has been said to show that ex-students who have studied diligently and made progress have hitherto experienced no difficulty in obtaining satisfactory employment. To aid in this work, an Appointments Section exists. Up to date it has succeeded in placing the majority of students to suitable posts.

## DISCIPLINE

Apart from the fact that experience proves that where discipline is good the pupil learns more readily, it is readily appreciated that in an Aircraft Works, where the product is a carefully-designed, highly-stressed machine and the utmost care and attention are necessary to ensure its safety, discipline assumes great importance. The Company reserves the right, in case of any serious breach of discipline and/or incompetence on the part of the student, to terminate his training at any time. In the event of the training being ended for such cause, the Company shall be under no obligation to refund any portion of the fee for the unexpired period of the Course.

## ATTENDANCE AT EVENING CLASSES

Students must be seated in Lecture Rooms at 6 p.m. when the register is called. Registers are closed at 6.10 p.m. and after that time later arrivals are regarded as

absentees. This is the ruling of the Board of Education and cannot be modified. Lectures are held on five evenings per week ; the fifth evening is optional to the student. Illness is the only reason that can be accepted for absence from these Classes. During the Summer months Classes are held once or twice weekly to help backward students and to act as a refresher to the others. The Annual Examination, which is held at the end of the Winter Session, must be taken by all students, and the results, together with a progress report of the year's work and attendance, are posted to parents or guardians.

## OVERALLS

Whilst engaged in the workshops students must wear the standard type overall coat and whilst employed on the aerodrome an approved type of mechanic's suit. These items of dress have been designed with a view to comfort and appearance and provide sleeves that button close to the wrists to avoid loose flapping cuffs catching in moving machinery. These overalls are supplied at cost price, that is 5s. 6d. for the coat and 6s. 9d. for the suit, which is provided with Zip fasteners.

## TOOLS

The Student's first exercise on arrival is to make a tool box of an approved pattern, and he is then supplied with a comprehensive tool equipment, which becomes his own property on the satisfactory completion of a long Course. All tools will be checked periodically, and deficiencies must be made

good by purchase to complete the kit to standard. Students are advised to mark the tools for easy recognition.

Special tools are issued on temporary loan from the Tool Stores on signature, and must be returned on completion of the job, or on Friday afternoons before 2 p.m., whichever is the sooner. Losses and breakages will be charged to the student.

Tools must not be left lying about in workshops or in aircraft, as serious damage or possible accident may result if tools become entangled or jammed in controls. A good workman always looks after his tools, for they are indispensable to his work.

Well-kept tools and a tidy tool-box indicate a well-ordered mind.

### HOLIDAYS

Annual vacational leave is granted in August (14 days), and at Christmas and Easter (7 days each), in addition to the statutory holiday when the works are closed at Whitsun. Leave of absence cannot be granted at times other than the routine holiday periods, but any case of extreme hardship in this matter should be brought to the notice of the Principal through a School Instructor.

### NOTE BOOKS

Every student must provide himself with a rough note book for workshop notes and fair note book for reference. The loose-leaf type is recommended, since it may be divided into sections corresponding to the various subjects covered by the curriculum. Further, such a note book is capable of

unlimited expansion, as the student gains knowledge of the subject. Fair note books must be written up and ready for inspection by the Educational Staff on Saturday mornings. The workshop rough note book is as essential as the tool kit, and must be shown when the tools are inspected.

### FLYING

Flying is not essential to an Aeronautical Engineer, but is a very useful asset. The fees for this service are very moderate and the flying facilities formerly enjoyed by the students at Stag Lane Aerodrome are now embodied in the London Aeroplane Club, at the Company's Aerodrome at Hatfield, Herts. The majority of flying students have qualified for the "A" Pilot's Licence, and many of these for the Commercial Licence "B"; this latter, it should be noted, qualifies the holder to undertake flying as a profession, if he so desires. The requisite engineering knowledge for holders of this licence is a part of the ordinary Technical Course.

Students who are members of the London Aeroplane Club may enjoy the amenities of the Club, its open-air swimming bath, tennis courts, squash courts, restaurant, social and rest rooms.

### COMPENSATION, ETC.

As students do not receive pay or other remuneration, they are not insurable under the National Health and Unemployment Schemes. They are, however, covered by a policy under the Workmen's Compensation

Act, 1925, in accordance with the Form of Agreement. In the event of accident or injury, however trivial, students must report to the First Aid Post. This procedure is necessary to comply with the Home Office Regulations and the conditions of the Workmen's Compensation Act.

### **PRIZE ESSAY AND TRAVELLING SCHOLARSHIP**

The Directors of the Company have sanctioned the annual award of a £10 prize to the student whose essay is considered

most worthy and complies with the rules. This amount is to be expended by the student in visiting a foreign aero exhibition.

In addition, prizes are awarded to the first three students in each section of the Evening Classes.

### **SPORTS AND GAMES**

Students are encouraged to maintain physical fitness by indulging in various sports and games. Extensive playing fields and a large and well-equipped pavilion have been provided.

# **THE DE HAVILLAND AERONAUTICAL TECHNICAL SCHOOL**

**HATFIELD AERODROME**

**HATFIELD**

**HERTFORDSHIRE**

*Telephone :*  
**Hatfield 281**

*Telegrams :*  
**Havilland, Hatfield**





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