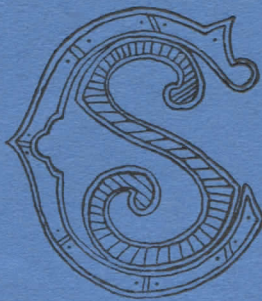


The School Magazine
OF THE
McCABE
COMMERCIAL
SCHOOL
MAIDSTONE



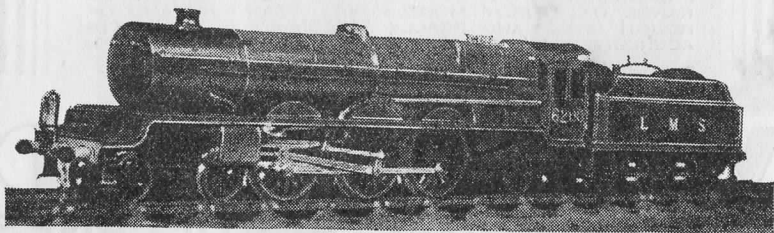
Vol. V. No. 15.
September, 1935

SPEED! SPEED!!

THAT IS THE CRY OF TO-DAY.

Thundering Expresses, Speeding Liners, Soaring
'Planes, all out for records of SPEED!

Here we have them embodied in models.



An exact 7mm. to the ft. scale model of L.M.S. "THE PRINCESS ROYAL."

ALL THE EXCITEMENT of driving the real train is yours with a BASSETT-LOWKE model. And they are not all expensive ones.

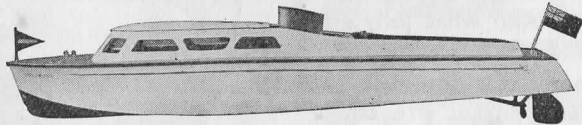
There are BASSETT-LOWKE scale model trains from 25/-,—a fine express "ROYAL SCOT" for 75/-.

Write for the BASSETT-LOWKE Booklet "Run Your Own Train Service." Price 1d.

And then there's "STREAMLINA"—the very name makes you think broken records.—The first sample of this model "Greyhound" did over 8 knots and ran continuously for nearly half-an-hour.

She is metre size with a shallow draught drawing only $\frac{3}{4}$ -in. of water when loaded, has a slipper stern and shell back deck, giving a vivid impression of speed.

HAVE YOU had your copies of our new Model Railway and Model Ships Catalogues, A19 and S19, price 6d. each, post free. These two fine little books give details of the models illustrated and many others, of every type and price.

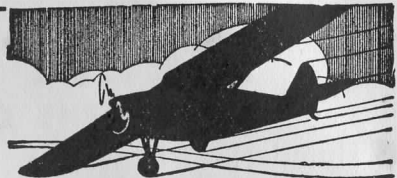


A finished "STREAMLINA" Model - - Price £9 9s. 0d.
Set of parts also available.

BASSETT-LOWKE LTD.

London: 112 High Holborn, W.C.1
Manchester: 28 Corporation Street **NORTHAMPTON**

**THIS SUPER
PERFORMANCE**



MODEL AIRCRAFT

OF LONG STANDING AND INDISPUTABLE REPUTE WILL UNDOUBTEDLY UPHOLD ITS UNCHALLENGED PRESTIGE FOR HIGHEST PERFORMANCE IN 1935—AND AFTER ALL IT'S PERFORMANCE THAT COUNTS! ANY ONE OF OUR VARIED RANGE OF STURDY MODELS WILL STAND NO END OF ROUGH USAGE AND REALLY PERFORM ALL THE FEATS ACCREDITED TO THEM—THEY'RE CRASH PROOF, TOO, AND ALL MODELS "TAKE OFF."

THE AWARDS TO

**WARNEFORD
FLYING MODEL AEROPLANES**

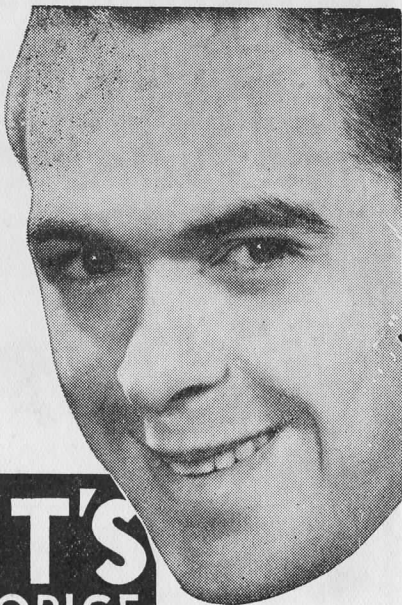
QUALIFY THEM AS THE BEST TO BE HAD
PRICES 1/6 TO 5 GUINEAS

OBTAINABLE FROM ALL GOOD STORES, TOY AND SPORTS DEALERS THROUGHOUT THE WORLD

ILLUSTRATED PRICE LIST POST FREE FROM WARNEFORDS, DEPT. C.10, GREENWICH ROAD, LONDON, S.E.10

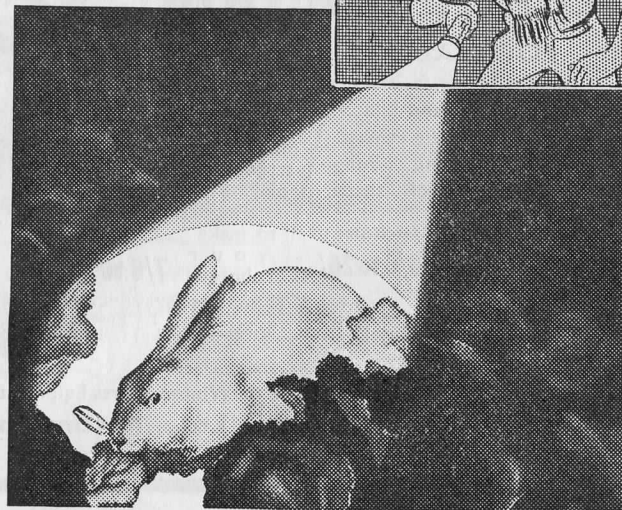
**From FAGS
to PREFECTS**

... We all have a weakness for Bassett's Allsorts! Such a number of different, exciting flavours—always fresh and good to eat. And what jolly good value—3d. a quarter loose, or in handy cartons—1-lb. 1/-, 1/2-lb. 6d., pocket size 2d.



BASSETT'S
Original LIQUORICE
ALLSORTS

FOUND!



And this is only one of the times you need an Ever Ready torch. Out of doors in the winter evenings; camping during the summer; in attic, cupboard or cellar an Ever Ready torch turns night into day. Save up, or get Dad to give you an Ever Ready—the torch for your next birthday. Don't forget! Ever Ready—the torch that lasts the longest and gives the biggest beam of light.

THAT'S when you're glad of your

**EVER
READY
TORCH**

Regd. Trade Mark



The Signaller's Torch. This torch shows a red, green, or white light and most Boy Scouts carry one. Nickel-plated or covered with leatherette, it costs complete, only 3/6d.



A Pocket Searchlight. A big magnifying glass gives this torch an amazingly long and powerful beam of light. You will find the battery will last a really long time, and it costs complete only 2/6d.

THE EVER READY CO. (GT. BRITAIN) LTD., HERCULES PLACE, HOLLOWAY, LONDON, N.7.

Made for better games
...because they're made by

GUNN & MOORE



FOOTBALLS

Hand stitching, faultless construction and finest hide ensure the utmost reliability and lasting perfection of shape.

The finest footballs produced. Match Size: 10/6 to 26/-

"Right Wing" "Left Wing"
"Canon T. Pattern"
"Patent Rugby" etc.

HOCKEY STICKS

The superb finish of these hand-made Hockey Sticks well matches their obvious strength, balance and playing qualities. Seven fine models from which to make your choice. 7/6 to 22/6

Obtainable at all Dealers. Repairs a speciality

"Autograph" : "Cannon"
"Notts" : "Forester"
"Sherwood" : "Popular"

Special Terms to Schools.

Write for Catalogue of Winter Sports Equipment
Gunn & Moore, Ltd., Nottingham

Famous for 50 years.



A REAL HIGH-PERFORMANCE MONOPLANE

Correct aerofoil high lift wing (double surface). Constant pitch hand-carved airscrew. Special spring under-carriage. Airframe built up on jigs like a full-sized aircraft.

at a

MASS-PRODUCED PRICE!

Span 37 in.

Hand carved, high efficiency Airscrew, Duration and Power Motors, complete with all accessories and instructions in Container Box. 27/6

"C of A" Model

The first model aircraft to be supplied with certificate of airworthiness. 35/-

The CROW JUBILEE

Formerly only obtainable by clubmen—now available to the public. It combines Super flying with Reality, will soar in thermal currents (max num duration recorded, 12 1/2 mins.), takes off and lands correctly. It really flies—it is not just pulled through the air by the airscrew, only to crash and fall to pieces at the end of a short flight! The FIRST BRITISH scientifically and strongly constructed BALSA WOOD model Aircraft—one of the secrets of its performance!

Crow Model Aircraft Ltd., 26, Ludgate Hill, London : E.C. 4

Coming Shortly!

A FLYING Model AUTOGIRO

Built under SOLE Licence from the Cierva Autogiro Co. Ltd., will be obtainable in kits and as a complete model.

Stocked at HAMLEY'S, etc.

COMPLETE YOUR BICYCLE

with the Cooper Stewart BICYCLE SPEEDOMETER



FREE

Read all about it in illustrated Descriptive Folder, Post Free.

Fitted easily and quickly. Full instructions included.

OF ALL CYCLE DEALERS

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COMPLETE



If your cycle agent does not stock our bicycle speedometer, send us 12/6 and we will post one on to you by return. Specify whether for 26 in. or 28 in. wheel.

No modern Bicycle is complete without the **COOPER-STEWART BICYCLE SPEEDOMETER**, which is a real instrument of precision, such as is fitted to a motor car.

This handsome speedometer is fixed on your handlebar, and driven from the front wheel by means of a flexible shaft. It shows **ALL THE TIME** you are cycling, just **HOW FAST YOU ARE GOING**. You have often wanted to know your speed . . . on the straight . . . down or up the hill! Every bicycle will have one of these Speedometers later on, but the most up-to-date cyclists are fixing one **NOW**. **BE FIRST!** Your bicycle will then be the envy of all your friends. Do not just **THINK** you are doing "twenties," **KNOW FOR A CERTAINTY.**

THE COOPER-STEWART ENGINEERING CO. LTD.

(Speedometer Experts for over 25 years)

(Dept. 57), 136 and 137 Long Acre, London, W.C. 2

You'd hardly believe it . . . No. 2

**WORLD'S CHAMPION
COCOA DRINKER?**

MONTEZUMA, THE EMPEROR OF THE ANCIENT AZTECS OF MEXICO, WAS SO FOND OF COCOA THAT 50 PITCHERS WERE PREPARED FOR HIM EVERY DAY!

2 INTO 1 will go!
2 lbs
1 lb

Two POUNDS (weight) of fresh, full-cream milk go into each POUND of CADBURY'S MILK CHOCOLATE. The Milk is concentrated and all the food value is retained.

A cup of BOURNVILLE Cocoa made with milk and sugar equals a cup of MILK nearly half as large again.

A CANAL OF MILK!
Last year Cadburys used 14 3/4 million gallons of Milk in their Milk Chocolate. This quantity of Milk would fill a canal 14 3/4 miles long, 10ft wide, and 3ft deep.

14 TONS OF LETTERS

WHEN CADBURYS WRITE TO ALL THE SHOPS WHICH STOCK THEIR PRODUCTS 15 ONE-TON LORRIES ARE REQUIRED TO FETCH THIS CORRESPONDENCE

MCCABE COMMERCIAL SCHOOL MAGAZINE

VOL. V. No. 15.

SEPTEMBER, 1935.

SCHOOL HISTORY

Wednesday, September 18th.—Christmas Term Begins.
 Tuesday, September 24th.—Old Boys' Meeting.
 Thursday, October 10th.—Old Boys' Social.
 Tuesday, October 29th.—Old Boys' Meeting.
 Monday, November 4th.—Half-term.
 Monday, November 11th.—Armistice Day.
 Tuesday, November 26th.—Old Boys' Meeting.
 Monday, December 2nd.—Examinations Begin.
 Thursday, December 5th.—Old Boys' Social.
 Wednesday, December 18th.—Meccano Exhibition and End of Term.
 Thursday, January 9th.—Easter Term Begins.
 Wednesday, January 22nd.—Old Boys' Annual Dinner.
 Wednesday, April 8th.—Term Ends.

Salvete.

The new boys for the Summer Term were:—

- No. 159.—N. C. R. Hogg, Lr. III (St. Peter's).
- No. 160.—J. B. Stott, Prep. (St. Peter's).
- No. 161.—R. W. Young, Up. IV (School).
- No. 162.—C. F. Bincham, Up. IV (St. Augustine's).
- No. 163.—K. Underwood, Prep. (St. Augustine's).
- No. 164.—P. B. Martin, Lr. III (School).
- No. 165.—J. Stearn, Prep. (School).

Valete.

Peter Randall, after five years in the School, has left to join the Royal Navy. Ivan H. Thorpe, who came to us in 1931, has entered his father's motor business. Clifford R. Jessup, four years in the School, has gone into the office at Messrs. Laurence's. Anthony Harrison has accepted a clerical post at Ashford.

Congratulations to the following for examination successes since our last issue: *Music*, F. A. Hunt, Trinity College, London, First Steps (Honours). *Shorthand*, K. H. Whibley, H. Claris, R. W. Randall and W. G. Apps,

Theory, Stage I; G. W. Ashby, W. Beale and H. Claris, Theory, Stage II; H. Philpott (70) and G. W. Ashby (80), speed. Since 1931 there have been the following successes: Shorthand 25, Typewriting 8, College of Preceptors 7, Music 3, Chamber of Commerce and Civil Service 2.

The School again participated in the County Fair in June. Together with the High School, we were responsible for the Kent Independent Schools' Exhibit and the work was greatly admired, especially the models made for the Neurath Method. The display of the work done in other Independent Schools leads to a useful exchange of ideas and a healthy spirit of competition. A dozen or more boys assisted "Kousin Mac" with his Amusement Corner and he has asked us to express his thanks for very useful assistance.

During the holidays further alterations and improvements have been completed. The whole of the space at the rear is now available as playground, the drainage system has been entirely relaid in modern style (a costly item!) and all the classrooms and passages have been panelled in light oak finish. Shelves have been provided for a display of handwork and a small buffet placed in the cloakroom for those who purchase their daily ration of milk. We trust that the boys will appreciate and take good care of these various items.

The School branch of the League of Nations has grown steadily and is now almost fifty strong. Several members receive regular letters from correspondents abroad, notably Denmark and America, and the exchanges include photographs, stamps—and opinions. One boy in California says that he has nine months' continuous school and then three months' holiday! He mentions how proud he is to receive a European letter. Every month a bundle of literature is sent down from Headquarters and any member can borrow several interesting books. G. Goodchild is the Hon. Secretary and J. Piper the Hon. Treasurer.

The hospital box contained 6s. 6d. and the R.S.P.C.A. box 5s. 2d. We have a good collection of tin-foil, and we hope to make it up to about 30 lbs. before it is collected at Christmas. Do your best for all these funds.

During the coming term we hope many boys will again patronize the School Library. The Upper School make it a point of honour that all their members are competent chess players. We also hope to arrange our winter debates and one or two lantern lectures.

The Swimming progressed wonderfully during the Summer Term. A record attendance and interest has been shown and several boys have learnt to swim and dive. Free tuition is arranged and those who are physically fit are urged to take advantage of it. The following have received Swimming Badges:—L. Beale, M. Froud, J. Beale, W. Shoebridge, P. Sackrée, B. Beale, S. Farman, D. Black, C. Beale, R. Corke, L. Baker, E. Haywood, J. Hooker, A. Berry, E. Locke, D. Edmed, D. Colinese.

UPPER SCHOOL NOTES

Monthly mottoes have been voted for this term, and we hope they will be an inspiration to all. So far we have selected, "Respect follows an industrious man, contempt a lazy;" "What is in a man's heart will come out in his action." *Verb sap.*

This term has been full of out-door activities, but in spite of that much hard work has been put in for the public examinations. All examination candidates were advised in their own interests to do a little reading (especially in the set books) during the summer vacation. It is much more difficult to pick up the threads afresh.

The models showing methods of illustrating data and symbols by the "Neurath Method" at the County Fair received high praise from many educationalists. We must emphasize that all the work was done by the boys themselves. Some of these charts have been sent for exhibition in the English Section at the Brussels Fair.

Our thanks are due to House and Game Captains and officers of the various associations for their hard work and enthusiasm.

We learn that—

A ratio was a Roman soldier.

Mr. Gladstone wore coloured trousers and was called "dizzey."

The Western Ghats are a kind of flea.

ANNUAL SPORTS

The Sports Day for 1935 proved a phenomenal success. Superb weather favoured the event at the Athletic Ground on Wednesday, July 17th and a record number of visitors thoroughly enjoyed the long list of events. At the conclusion of the races Mr. Piper thanked all those who had contributed to the success of the day, the officials, the prize donors, the visitors, the competitors and also Mrs. Piper who kindly presented the cups and prizes, and who was the recipient of a bouquet presented by G. Pickup. Mrs. Piper made a delightful little speech of encouragement to the boys.

The Victor Ludorum Cup was won, for the second year in succession, by G. Goodchild, who is a very promising athlete. Mr. Williams has given a challenge cup to the school and this was awarded as a Junior Victor Ludorum Cup for boys below Class I, and this was tied for by D. Winsler and J. LeFeaver who will hold it jointly for the year. Another fine cup was given by an anonymous friend of the School who requested that it be won outright for what the committee considered the most gruelling race. G. Goodchild was again successful here as the first home in the 440 yards race, a difficult race for young athletes.

Mr. W. Beale proposed a vote of thanks and spoke very eulogically of the School and its work and sport. The proceedings concluded with the usual cheers.

The results were as follows:—

100 Yards.—Class I: 1 G. Goodchild, 2 K. Whibley, 3 M. Higgins. Class II: 1 W. Shoebridge, 2 M. Betts, 3 R. Rand, 4 A. Berry. Class III: 1 G. Reynolds, 2 D. Smith, 3 J. Stockbridge. Class IV: 1 D. Winsler, 2 J. LeFeaver, 3 C. Beale.

High Jump.—Class I: 1 G. Goodchild (4 ft. 7 ins.), 2 K. Whibley, 3 L. Beale. Class II: 1 R. Rand, 2 L. Baker, 3 M. Betts. Class III: 1 G. Reynolds, 2 M. Froud, 3 A. Baker.

Potato Race.—Class I: 1 K. Whibley, 2 J. Piper, 3 A. Byam. Class II: 1 R. Rand, 2 M. Betts, 3 A. Berry. Class III: 1 C. Larkin, 2 E. Knott. Class IV: 1 C. Beale, 2 E. Barham, 3 P. Gibbs. Class IVa: 1 P. Stearn.

440 Yards.—All Classes: 1 G. Goodchild, 2 D. Winsler, 3 L. Beale.

Egg and Spoon.—Class I: 1 M. Higgins. Class II: 1 D. Fraser, 2 L. Rippengal, 3 T. Mercer. Class III: 1 R. Westbrook, 2 D. Winsler. Class IV: 1 J. LeFeaver, 2 C. Beale, 3 G. Griffin. Class IVa: 1 J. Stott, 2 K. Fraser, 3 E. Skinner.

Old Boys' Race, 100 Yards.—1 H. Hooker, 2 E. Haywood, 3 C. Smith.

80 Yards.—Class IV: 1 D. Winsler, 2 J. LeFeaver, 3 C. Beale.

Long Jump.—Class I: 1 G. Goodchild (15 ft. 10 ins.), 2 L. Beale, 3 E. Haywood. Class II: 1 M. Betts, 2 J. Hooker, 3 R. Rand. Class III: 1 C. Larkin, 2 D. Smith, 3 B. Westover. Class IV: 1 C. Beale, 2 J. LeFeaver, 3 D. Colinese.

Hoop Race.—Class IV: 1 J. LeFeaver, 2 P. Gibbs.

220 Yards.—Class I: 1 G. Goodchild, 2 K. Whibley, 3 L. Beale. Class II: 1 W. Shoebridge, 2 M. Betts, 3 R. Rand. Classes III and IV: 1 D. Winsler, 2 J. LeFeaver, 3 C. Beale.

Obstacle Race.—Class I: 1 G. Goodchild, 2 L. Beale, 3 M. Higgins. Class II, 1 D. Fraser, 2 E. Hughes, 3 D. Black. Class III: 1 C. Larkin, 2 M. Froud, 3 B. Westover. Class IV: 1 C. Beale, 2 J. LeFeaver, 3 D. Colinese.

Three-Legged Race.—1 D. Fraser and J. LeFeaver, 2 J. Beale and G. Goodchild, 3 J. Piper and R. Randall.

Slow Cycle Race.—1 N. Sturt, 2 E. Haywood, 3 R. Corke, 4 D. Black.

Fathers' Race.—1 Mr. Pickup, 2 Mr. Fraser, 3 Mr. W. Beale.

Half-Mile.—All Classes: 1 G. Goodchild, 2 L. Beale, 3 E. Haywood.

Ladies' Race.—1 Miss Stearn, 2 Mrs. Beeslee, 3 Mrs. Pickup.

Sack Race.—Class I: 1 J. Piper, 2 R. Randall, 3 J. Beale. Class II: 1 P. Sackree, 2 D. Fraser, 3 W. Shoebridge, 4 K. Bonner. Classes III and IV: 1 A. Hunt, 2 J. LeFeaver, 3 M. Froud.

Old Boys' Race, 220 Yards.—1 H. Hooker, 2 E. Haywood and C. Smith (tie).

Cricket Ball.—Class I: 1 G. Goodchild (72 yards), 2 A. Byam, 3 L. Beale. Class II: 1 K. Bonner, 2 D. Black, 3 D. Fraser. Class III: 1 W. Tucker, 2 M. Froud, 3 D. Smith. Class IV: 1 J. LeFeaver, 2 D. Winsler, 3 C. Beale.

Tug-of-War.—A Byam's team beat J. Beale's team. School Team beat the Old Boys' Team.

House Relay.—1 St. Peter's, 2 School, 3 St. Augustine's.

Swimming.—Seniors: 1 L. Beale, 2 M. Froud, 3 J. Beale. Juniors: 1 S. Farman, 2 L. Baker, 3 D. Colinese.

Consolation Race.—Class I: 1 D. Edmed, 2 C. Tombs. Class II: 1 I. Newman, 2 C. Bincham. Class III: 1 D. Colinese, 2 J. Stockbridge. Class IV: 1 R. Sawyer, 2 J. Stearn.

The House points were: 1 St. Peter's 201, 2 St. Augustine's 106, 3 School 100.

BALANCE SHEET, SPORTS DAY, 1935

Receipts.

	£	s.	d.
Entrance Fees	3	11	6
Sale of Programmes	1	6	2
Subscriptions	10	7	0
Prizes Given (about)	5	5	0
Deficit	2	1	
	<hr/>		
	£20	11	9

Expenditure.

	£	s.	d.
Deficit from 1934	1	0	1
Hire of Ground	2	2	0
Printing	2	15	9
Band	1	15	0
Gratuities and Secretary's Expenses	1	9	1
Prizes Purchased	6	4	10
Prizes Given (about)	5	5	0
	<hr/>		
	£20	11	9

E. G. A. Bettle, *Hon. Treasurer.*

A. M. Williams, *Hon. Secretary.*



BUILDERS OF MODERN AIRCRAFT AERONAUTICAL ENGINEERING AS A CAREER

[Based on information kindly supplied by C. H. Roberts, Esq., A.I.A.E., Principal of the College of Aeronautical Engineering, S.W.3.]

The first impression which the word "Aeronautical" conjures up in the mind's eye is definitely one of romance. The age-old struggle of man for the mastery of the elements has culminated in the development and perfecting of all modern forms of transport, of which Aviation is the most recent expression. The average schoolboy pictures himself, no doubt, in a similar role to that of J. A. Mollison on his epic flights across the Atlantic, to Scott and Black on their record dash from Mildenhall to Australia, or perhaps as the senior pilot of a stately air liner, responsible for the safe transport of passengers and mail.

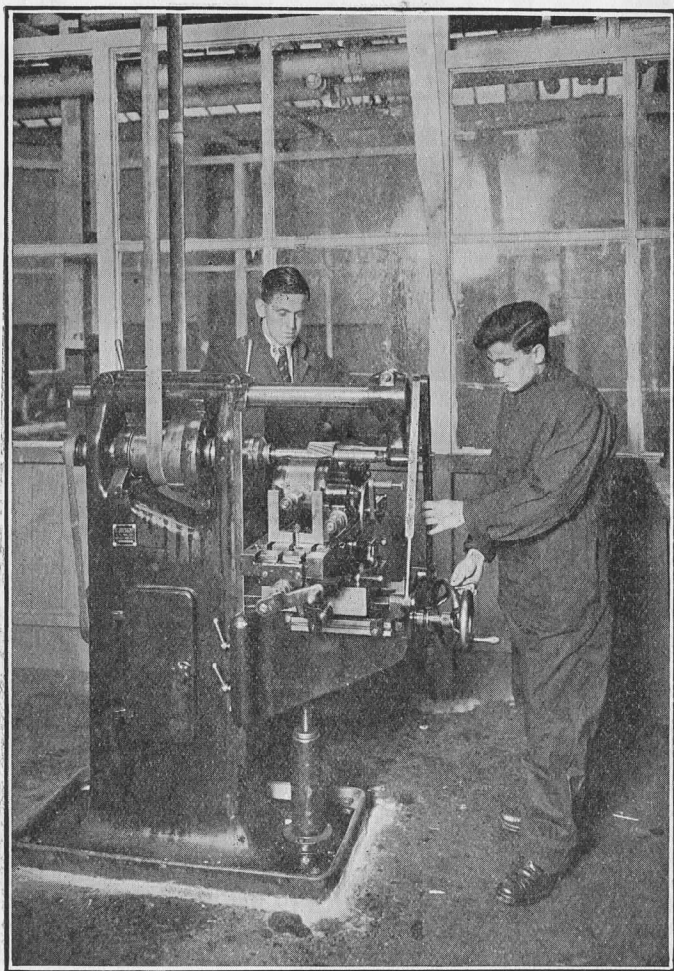
Alternatively the idea of speed may have captured his imagination, racing seaplanes engaged in Schneider Trophy contests, or attacking world speed records, the flashing dive of a high speed military fighter, or perhaps the precisely executed evolutions of aerobatics.

The Men behind the Pilot

The pilot, however, is only the final link in a vast chain of human activity which culminates in the beautiful machine which awaits the skilled touch of the pilot's hands to bring it to vibrant and pulsating life and activity. In the first instance the designer is usually a man of exceptional ability and long experience, he is equally *au fait* with the latest results of experiment and research, as well as with the practical difficulties which will arise during the production of the machine in the shops.

In the realms of pure research the physicists are engaged on investigation into aerodynamical problems, and experimental observations of the behaviour of model or full-size aircraft in wind tunnels.

The chemists are investigating new types of alloy steels, or light alloys of aluminium and magnesium, with the object of reducing the ratio between power and weight.



(Reproduced through the courtesy of the College of Aeronautical Engineering, Chelsea, S.W.3.)

UNIVERSAL MILLING MACHINE

The use of the milling machine is a part of the training which students undergo in the Aeronautical Engineering College. They are initiated into the mysteries of mounting cutters and end mills, the speeds of cutters and the feeds for various metals. They must master the difficult art of cutting gear teeth, upon the accuracy of which depends the efficiency of the engine.

The preliminary designs involve the employment of draughtsmen stress calculators, planners and estimators.

Very definite regulations are laid down by the Air Ministry with regard to the structural requirements of aircraft, and a very minute system of inspection is in operation under the Aeronautical Inspection Directorate of the Air Ministry.

Before an aircraft is finally produced, the whole of its construction is carefully inspected in every detail and assembly, from raw material to finished product, it is of approved design, and must have passed a flight test.

All aircraft in operation must have a Certificate of Airworthiness, and the reputation of British Aircraft for structural soundness and safety depends on this rigid system of inspection. A sample or "Type" engine of a new or modified design for installation in civil aircraft must be submitted to searching tests before being approved.

Flying begins in the Workshop

The Works Manager is in complete control of the actual production activities, and a large amount of responsibility rests on his shoulders.

The varied activities of an aircraft or engine manufacturing firm are too numerous to detail, but the personnel employed include managers, designers, section leads, checkers, draughtsmen inspectors, foremen, charge hands, clerical, advertising and sales staff.

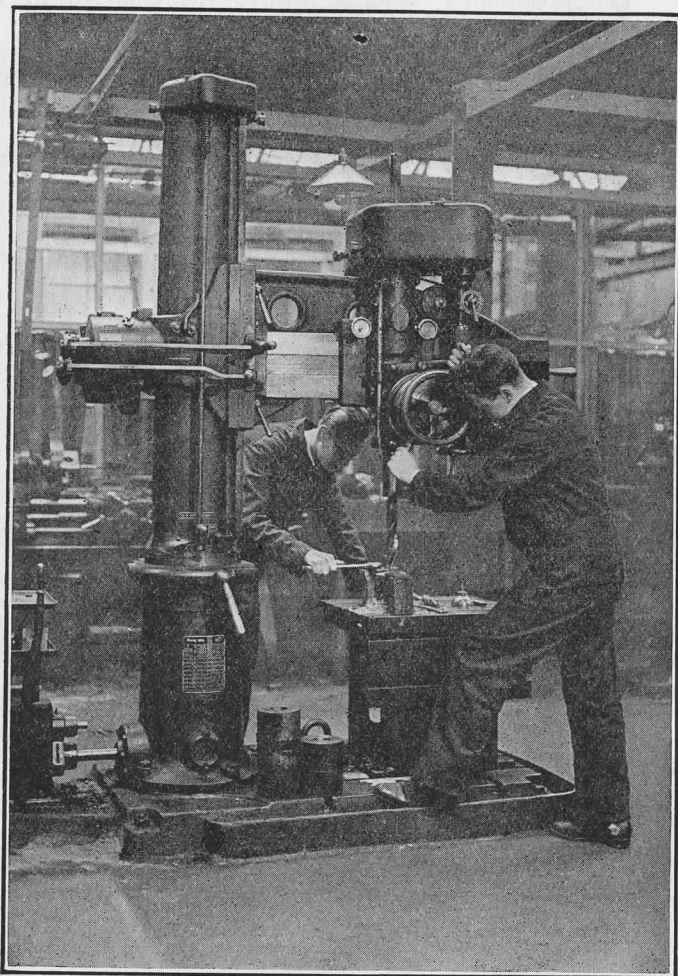
The rank and file include machinists, fitters, welders, wood and metal workers, coppersmiths, tinsmiths, and the like.

Once the aircraft has commenced its working life a large amount of personnel is required in order to keep it operating. On the technical side the responsibility is vested in the Ground Engineer, who is required to inspect and certify the aircraft and engine before flight, and also after overhaul or repair.

The Licence System

All Ground Engineers are licensed by the Air Ministry, after examination, and are licensed in categories A and B for aircraft, and C and D for engines.

Licences A and C refer to inspection before flight, whilst B and D refer to inspection after overhaul, and call for a large degree of experience and technical knowledge. A special category, X, refers to components such as instruments, magnetos, or parachutes.



(Reproduced through the courtesy of the College of Aeronautical Engineering, Chelsea, S.W.3.)

HEAVY DUTY RADIAL DRILL

The student must prove his efficiency in this type of drilling machine before he will be granted a Ground Engineer's Licence by the Air Ministry. The above picture shows the fascination the work holds for these mechanically-minded lads.

On the operational side the staff includes Aerodrome managers, traffic control officers, and on large airports, wireless and customs personnel, suitable office staff, and usually hotel and catering experts.

The qualification to be aimed at in order to set the seal of efficiency in scientific and technical knowledge is either the Associate Fellowship or Associate Membership of the Royal Aeronautical Society.

In order to progress in Aeronautical Engineering, as in any other profession, a soundly conceived and thorough course of training must be undergone by the prospective engineer, and Colleges of Aeronautical Engineering have been founded to meet this need.

Type of Boy Required

As regards general education it is a mistake to think that the engineer is a mere technician. The engineer must be a man of wide sympathies and general culture if he is to succeed. At school he will probably show a certain amount of success in subjects such as chemistry, physics and mathematics, but he should also have a good knowledge of the best English literature, be able to write a thoughtful essay, and also possess the ability to express his thoughts in a precise, clear and logical manner, as many engineers are called upon to make reports from time to time.

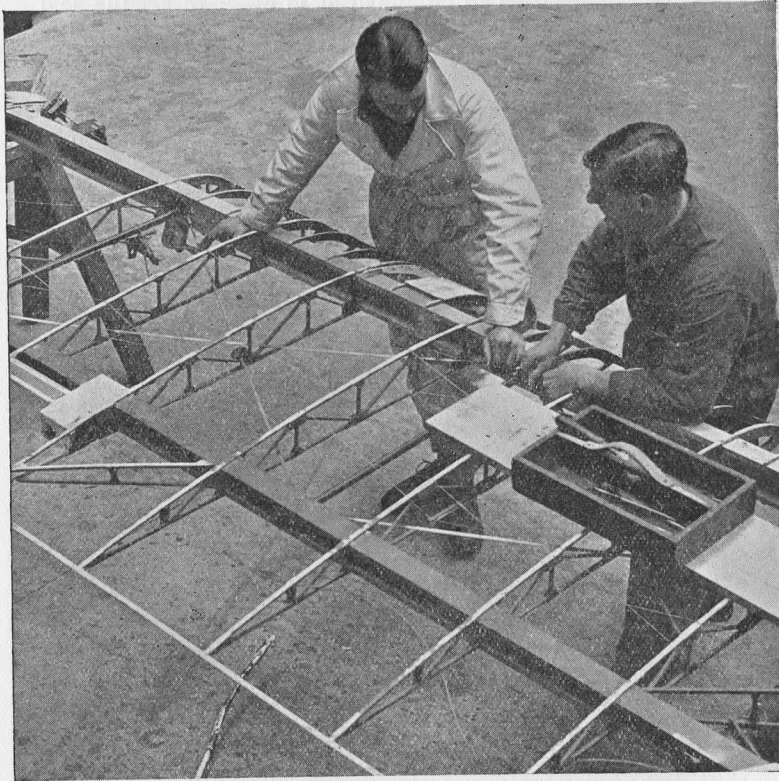
A good working knowledge of at least one modern foreign language is also an extremely useful asset.

With this general education behind him the prospective engineer will have a good foundation for his technical training.

This will include both practice and theory; on the practical side he will have to master such work as fitting, machine shop, welding, foundry, wood and metal work, after which he will proceed to more specialized work such as aero engine overhaul, maintenance, and testing, and aircraft construction, rigging, and maintenance. He will also deal with components such as magnetos, carburettors, instruments, and parachutes.

The theoretical work is of necessity mainly of a technical nature on engine theory, aircraft timbers, electricity, metallurgy, theory of flights, etc., and more advanced work in mathematics, aerodynamics, theory of structures and heat engines for the student who wishes to prepare for higher technical qualifications.

As the student is eventually destined for an executive or administrative post he must have a knowledge of aerodrome management, commercial practice, sales and service, Aviation Law, and secretarial work.



(Photo reproduced by kind permission of Air Service Training, Ltd.)

COLLABORATION!

A student discussing with an instructor the new spar which he has fitted to a wing. This gives an idea of the thoroughness of the instruction given in the various branches of aviation by our air training services.

After undergoing a training of this description the keen and hard-working student is equipped with a wide knowledge and experience which should enable him to fill the highest posts which aviation has to offer.

The Cost of Tuition

The age for entry into most Colleges of Aeronautical Engineering is from 17 years.

On entering the College the student is put on probation for a certain period and a careful record kept of his progress and suitability for the career. If at the end of that time he

does not come up to the necessary standard, the Principal will tell him so quite frankly. The length of training is from two to three years according to the knowledge the student already has of this type of work when entering the College.

The fees, which are payable in advance, are about 250 guineas for a three year course, or about 25 guineas a term.

An annual vacation leave is granted in the summer of about two weeks, and a short holiday at Easter and Christmas.

Prospects in Aeronautical Engineering

During the last few years aviation has made very rapid strides both from the military and commercial points of view. The League of Nations has tended to stress the importance of international co-operation, and aerial transport has become a practical means of bringing the nations of the world together.

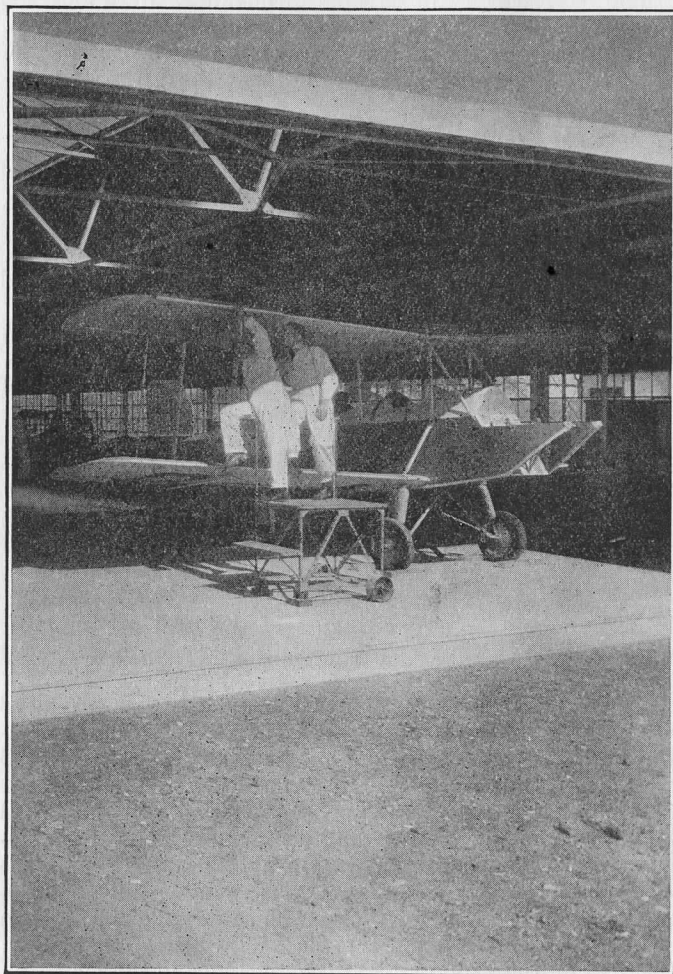
To-day, practically every town of importance throughout the world is linked up with some form of air transport for mails, passengers, and goods. Whilst it is a costly means of conveyance, the time element in the modern world has become so important that this speedy means of transport is bound to increase its present considerable hold on this form of commercial service.

It is only a few years ago that flying was regarded as an adventure; people nowadays regard it as a normal means of transport and travel or send goods by air with complete confidence. It is particularly important as a means of linking together the far distant elements of the Empire, and the Government is giving every encouragement to Imperial Aerial Communications.

This rapid growth of commercial aviation has produced a very steady demand for ground engineers, aerodrome managerial and executive staff, and supply services and technical grades of all kinds. It is possible to learn to fly an aeroplane in a few months; but this is only a small part of commercial aviation. Reliability, safety and economy are the three elements which make for success in this industry, and the qualities required for these functions require skill and prolonged training. As Lt.-Colonel F. C. Shelmerdine, a Director of Civil Aviation for the Air Ministry, has said: "The man on the ground keeps the machines in the air."

Whilst everybody hopes that the present international competition in air armaments will be speedily terminated, it is impossible to ignore the present pressing needs of the different services. The Royal Air Force at the moment exerts a very steady demand for all those with some practical knowledge of all branches of aeronautical work.

These factors lead us to the view that sound opportunities exist and will continue to exist for several years to come for men fully trained in the engineering, managerial, supply and technical grades of civil and commercial flying.



(Reproduced through the courtesy of the College of Aeronautical Engineering, Chelsea, S.W.3.)

RIGGING OF AIRCRAFT

The Aeronautical Engineer must understand everything about fabric sewing and covering. The fabric coverings of planes are opened up every year for careful examination in order to receive a renewal of the Certificate of Air-worthiness. Careful instruction in carrying out necessary adjustments and repairs and the final inspection of rigging and controls are all necessary before the certificate is renewed. The above photograph shows the students engaged in the rigging of aircraft at Brooklands.

CRICKET

Unfortunately several matches have had to be scratched this term owing to various reasons; at the beginning of term, a succession of wet Wednesdays, and for the last fortnight of term Messrs. Fremmins were unable to let us use the ground. On the 23rd of May we sent a junior team to Detling, where we beat the local school by 46 to 21, Byam and Black doing good work for us.

On Tuesday, June 11th, we beat a fairly strong Old Boys' team by 64 to 59. The O.B.s won the toss but put the School in and Jessup and Byam put on 20 for the first wicket. Four more wickets fell for an additional 15, and except for a stubborn resistance by J. Beale, the remaining batsmen did not give a brilliant display. The O.B.s fared worse and we captured four wickets for 12, Byam and Jessup being responsible for the damage. J. Birchall played a valiant innings but lacked support except from L. Simmonds. Byam's bowling analysis read: 6.5 overs, 1 maiden, 10 runs, 5 wickets.

The House Cricket resulted as follows: St. Augustine's beat School 63—52, St. Peter's beat School 40—16, St. Peter's beat St. Augustine's 35 for 5—34.

Cricket Criticisms

- L. BEALE is an able captain with all-round ability.
- G. GOODCHILD is a valuable player with both bat and ball.
- A. BYAM is a hard-hitting batsman and a good fast bowler.
- C. JESSUP is a fine opening batsman and a useful slow bowler.
- J. BEALE is a good forcing batsman and a useful fielder.
- W. SHOEBRIDGE is a safe wicket-keeper.
- D. NOAKES is a cautious batsman with plenty of patience.
- M. FROUD has ability and should become a good player.
- E. HAYWOOD has been a very keen member of the team.
- D. SMITH is a promising young player.

There are several others who should do well next season.

THE SCHOOL JOURNEY TO SOUTHAMPTON

In place of the usual outing by motor coach, we selected to go by train this year; and a party of 86 left the West Station in high spirits on Wednesday, July 24th. We must congratulate the Southern Railway, not only for the excellent timing throughout, but for the comfortable first class

saloon carriages they provided for us. The School also received their mead of praise for the organization, though in modesty we refrain from further comment. The journey to Southampton was itself an experience, passing through three of England's most beautiful counties. The Railway had thoughtfully provided us with a map showing places of interest and the 114 miles to our destination passed rapidly and pleasantly. Lunch was taken on the train.

Arriving at Southampton we entered the old docks and the floating dock. This is the largest floating dock in the world, and was brought by sea from Northumberland. It was difficult to appreciate its size until it was pointed out that its length was three times that of an Association football field. The under-manager of the Dock explained its working, and many of us understood for the first time how repairs to a ship's bottom are carried out. Our train was waiting for us, and we continued through Southampton, passing the Grammar School, and the new Civic Centre, and so on to the great area of reclaimed land which the Corporation has been developing. The distance between the old and the new docks is about three miles, and we were grateful for our ride. Then feeling like film stars we boarded the magnificent Canadian Pacific liner, "Empress of Britain." This ocean giant is 750 feet long and 97 feet broad, and is a marvel in nautical construction and modern luxury. We passed through palatial halls, supported by marble columns, through concert rooms, bridge rooms and dining halls decorated in a variety of styles and periods. The first class suites were the last word in comfort. We saw kitchens which seemed limitless, the swimming bath, the squash court, the bar, and the games deck. To say that this great enterprise is a floating hotel is to belittle it. It is a floating world. On the games deck cameras were busy. So after a succession of sensations we proceeded to tea, and an excellent tea too! The party were then free for about half an hour, and made good use of the time in seeing further marvels of England's "premier passenger port" including Rank's great suction grain pipes for unloading grain without human aid. The return journey was made without mishap. A sensation was caused at Guildford when it was believed that Mr. Piper in a noble attempt to obtain extra drinking water for the boys had been left behind. However all was well, he had only boarded the guard's van! We received a royal welcome at Maidstone, and the general opinion seemed that the day was pleasant, educational and extremely economical.

A THIRD FORM IMPRESSION OF THE SOUTHAMPTON VISIT

On July 24th I spent the happiest day of my life. We went by train with our friends, and took things to eat. Mr. Piper and Mr. Williams had some meat in a basket at Woking. We passed Redhill which was very pretty with its church spire sticking up into the air. Then we got to the Docks and went on the floating dock and I took a snap. The Empress of Britain caught my eye, and we went all over her. We saw all the wonderful rooms just like a palace. They included a swimming bath and games room and a bar after which I don't remember any more.

(Aged 9).

INDUSTRIAL GEOGRAPHY

Our first visit this term was a very interesting one. It was to Messrs. Readers, the cricket ball manufacturers, of Teston.

The party was conducted throughout the visit by Mr. Reader. who explained the various processes very clearly. The cover of a cricket ball is made of cow-hide, dyed the right colour. The core is made of cork tightly pressed and bound with damp worsted wool. The core, after being bound, is dried thus drawing the worsted tight. The cover is made in four quarters. Two of these quarters are stitched together making it cup-shaped. Thus the cover is then in two halves. These halves, after being pressed and having false quarters stuck inside to strengthen them, are stitched round the cork core. The stitching consists of rows of stitches being sewn right round the ball holding the two halves together.

A cheap ball has 60-80 stitches round it, a good one 90-95. Messrs. Readers produce over 50,000 cricket-balls a year, a huge number when you consider the great amount of highly skilled labour needed to produce each ball. It is one of those industries in which machinery is hardly used at all.

Our last visit this term was to the large factory of Messrs. Tilling and Stevens, the manufacturers of motor engines and motor lorries.

On the ground floor, where we started our tour of the factory, we saw the castings being checked in. These castings were made from various metals. Then up to the top floor as the working is arranged so that the complete chassis is on the ground floor when finished. The top floor was where the sand-blasting and tempering of the casting was

carried out. Next we passed through the two machine shops where machines were cutting threads, making bolts, etc. These parts were then assembled in the assembling room and the complete motor passed into the testing room. The chassis were then assembled, the motors put in and then passed out for their road test.

K. Whibley.

SELECTED ITEMS

I imagine the native Africans sleeping and working in filthy hovels, chanting a slow, monotonous dirge; the streets are dirty and lined with tumble-down shacks; the hum of insects and the lowing of cattle fill the air, occasionally the distant call of a hunting tiger or the trumpet of an elephant disturbs the ear.

R. Rickard.

Pythagoras, who lived over 500 years before Christ, understood the revolution of the earth on its axis, but it was not until over 1,000 years later that the theory was generally believed. Copernicus and Galileo proved the theory and so placed astronomy on a firm foundation. Other "landmarks" were Kepler's and Galileo's use of the telescope and Newton's discovery of gravitation.

R. J. Randall.

In days gone by quarrels between nations frequently led to war. To-day the League of Nations steps in and the quarrel is discussed, not fought over. Hundreds of innocent people are killed without mercy by modern warfare, and if another great war ever broke out the enemy would strike soon with gas bombs, and but little resistance would be possible.

E. C. Austin.

THE OLD BOYS' ASSOCIATION

The members of the Association have maintained their activities well during the summer months. At the monthly meetings fresh ideas have been suggested such as a games room, an O.B. concert and a camp. Members were present in great numbers at the School Sports and did useful service. The special Old Boys' races were appreciated. Our crowning event was the entry for the River Carnival. As many Old Boys will remember, we obtained second prize. This was a splendid effort, and our thanks are entirely due to a small committee which in the face of many difficulties, and at

short notice, prepared and decorated the boat under the leadership of our Treasurer, Mr. K. Fowles. Well done!

We have received another visit from Alan Baxter, just home from the Far East. He looked very fit. D. Potts has secured a good post in Nottingham.

Our thanks are due to our Chairman and Vice-Chairman (Mr. W. Solman and Mr. W. C. Beale) for their able leadership, and to the officers. A special word of appreciation is due to Mr. B. Finn for his hard work in connection with the sports' side of the Association. He reports: "The Tennis Tournament is the chief item of interest, and has proved a success. We have had twenty-four entries, and it is hoped to make this an annual event. The results of the tournament will be announced in the next issue of the Magazine. Some cricket matches have been arranged and we only lost the match to the School by five runs. We hope to turn the tables soon. Other matches are being arranged."

Heartiest congratulations to Mr. T. C. George on his success in the Final examination of the Incorporated Secretaries' Association.

We understand that the Tennis Cup is to be presented at the Social Evening at the Central Cinema, arranged for Thursday, October 10th.

May we close by wishing all our members a very happy holiday.

A. M. W.
T. C. G.

VICTORY

There on the field of combat he stood—a mere lad of 16—too young to carry a rifle and untried by a baptism of fire. He was closely watching two of his enemies who seemed oblivious of his presence. An aeroplane droned somewhere overhead.

There was a sharp crack and the enemies ran but he remained still, uncertain what to do. His foes suddenly stopped and assumed an aggressive attitude. One of them was glancing at him!

Immediately a second crack rang out, and a small object, the size of a hand grenade, came hurtling straight towards him. He ran for his life and instinctively raised his hands. It was coming nearer and falling very near him. His heart thumped and he wondered whether it would fall near him. He suddenly stopped as it struck his hands. It felt like red-hot iron, and the perspiration stood on his brow. A tremendous tumult rent the air, and he heard ten men in flannels roar out. "Well caught, sir!"

THE SCHOOL ROLL—Continued

Admission No.	Name.	Last known address.	Date of Admission
321	Brown, Sydney	Swanley	Jan., 1919
322	Brown, William	Ditton Holm, Aylesford	" "
323	French, Jack	Poole	" "
324	Bartlett, Cecil	Boxley Road	" "
325	Martin, Arthur	Windmill, Burham	May, 1919
326	Hughes, John	Half Way House, Lenham	" "
327	Viggers, George	Windermere, Upper Fant	" "
328	Hope, Golding	Tile Barn Farm, Holingbourne	" "
329	Rogers, William	Boughton Lane	" "
330	Durnford, Ronald	Fairmeadow	" "
331	Todd, William	62 Victoria Street	June, 1919
332	Martin, Stephen William	Allen St. Post Office	" "
333	Goodman, Gerald	Sutton Valence	Sept., 1919
334	Corps, Martin William	The Green, Bearstead	" "
335	Davis, Sidney Edward	Manor House, Leeds	" "
336	Turner, Cyril Edward	Ten Bells, Leeds	" "
337	King, Arnold Leslie	Back Street, Leeds	" "
338	Johnson, Clive	3 Priory Road	Oct., 1919
339	Fife, Robert	West Yaldham, Kemsing	" "
340	Copp, Martin William	2 Terminus Road	Jan., 1920
341	Coltman, Harold Reginald	77 Bank Street	" "
342	Wood, Eric	12 Bower Mount Road	" "
343	Apps, Alan William Mason	Offham Road, W. Malling	Feb., 1920
344	Large, Thomas	219 Tonbridge Road	Mar., 1920
345	Pearce, Joseph	54 Bower Mount Road	May, 1920
346	Billingham, Reginald	Deceased	" "
347	Reed, Bert	27 Gabriel's Hill	" "
348	Boardman, Frederick Richard	Plymouth	" "
349	Stevens, Leonard	Fen Pond Farm, Ightham	" "
350	Murray, John Edward	Purley	" "
351	Cotton, John Leslie	3 Raymead Villas, Snodland	" "
352	Mangles, Arthur William	Gillingham	Sept., 1920
353	Fowles, Kenneth	Mote Park Estate	" "
354	Marshall, Malcolm Frederick	Bearstead	" "
355	Loder, John	Tovil	" "
356	Sendles, Graham	Coxheath	" "
357	Weller, Robert	49 King Edward Road	" "
358	McLelland, Hugh	26 Sheals Crescent	" "
359	Summarsell, John Herbert	Brighton	Nov., 1920
360	Kirtland, Ralph Edgar	Teston	Jan., 1921

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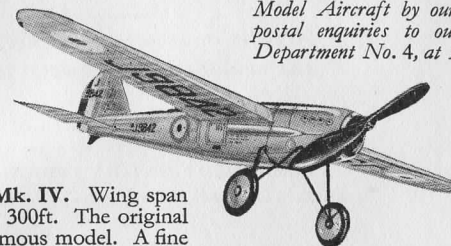
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