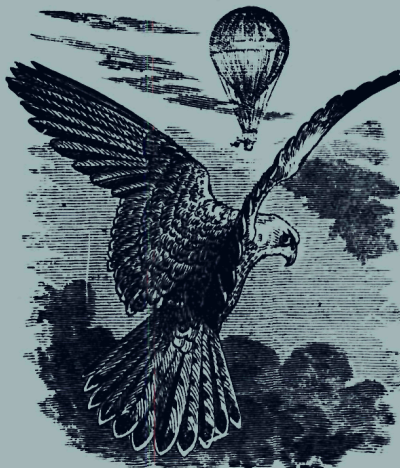


THE
AËRONAUTICAL
JOURNAL.

The
Organ of the
Royal Aëronautical Society

—
Entered at
Stationers'
Hall.



Edited for
the Council of the
Royal Aëronautical Society
by
W. Barnard Faraday,
LL.B., F.S.S.

Price to Non-Members and Non-Subscribers,

No. 89.

MAY, 1918.

Vol. XXII.

VICKERS LIMITED.

Contractors to H.M. GOVERNMENT.

Aviation Department,
Imperial Court, Basil Street,
KNIGHTSBRIDGE, S.W.3.

Telephone
KENSINGTON 6520 (2 lines).



Telegraphic Address:
"VICKERFYTA-KNIGHTS, LONDON."

IMPORTANT to Aeroplane Manufacturers.

For . . .

Tin Plating, Lead Plating, Nickel Plating,

Send to the actual Works, who Specialise in

ALL KINDS OF

PLATING, OXIDISING, BRONZING and GILDING.

JOHN WILKINS & Co.,

231 to 243, St. John Street, Clerkenwell, E.C.

Telephone Nos.:

HOLBORN 1675. CENTRAL 8611.

Telegrams:

"BRONZITE, LONDON."

Sheet Metal Workers, Stampers, Spinners, etc.

ESTABLISHED LONDON AND PARIS, 1873.



AEROPLANES

AND

PARTS.

A. V. ROE & Co., LTD.,

**NEWTON HEATH,
MANCHESTER.**

Telephones: City 8530 & 8531.
Telegrams: Triplane.

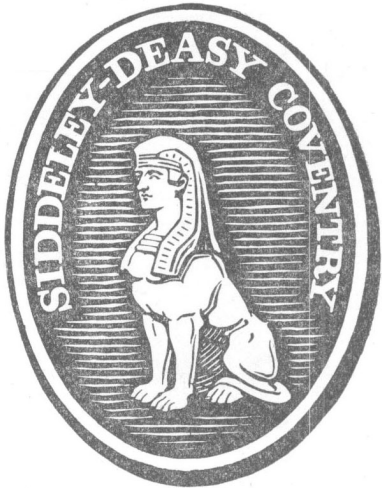
SOUTHAMPTON.

Telephone: Hamble 18.
Telegrams: Roe, Hamble.

**166, PICCADILLY,
LONDON, W. 1.**

Telephone: Gerrard 3186.
Telegrams: Senalpirt, Phone.

Code: A.B.C., 5th Edition.



FOR more than three years the entire Siddeley-Deasy organisation and resources have been devoted to the service of the nation.

In that period and in that service a position of absolute supremacy has been achieved.

The
Siddeley-Deasy Motor Car Co., Ltd.,
Coventry.

Contractors to H.M. Air Ministry.
: Luxurious Motor Carriages. :
Aero Engines. ✦ Aeroplanes.

Godbolds.

CONTRACTORS TO THE ADMIRALTY.

THE

ESTABLISHED 1912.

SUPERMARINE AVIATION WORKS

LIMITED.

Telegrams—
"SUPERMARINE."

Telephone—
1337 SOUTHAMPTON.

Designers and
Constructors of AIRCRAFT

FLYING WATER AND SLIPWAYS :

WOOLSTON.

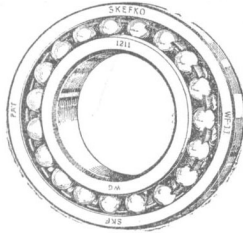
General Manager—
H. SCOTT-PAINE.

Specialty—

- RAPID PRODUCTION OF -
EXPERIMENTAL MACHINES.

OFFICES AND WORKS: **SOUTHAMPTON, ENGLAND.**

"SKEFKO" SKF



THE EMBODIMENT OF ALL THAT
IS PERFECT IN BALL BEARINGS.

The SKEFKO Ball Bearing Co., Ltd.
Head Office and Works - Luton, England.

London Office: 28, Victoria St., Westminster, S.W.1.
Glasgow Office - - - 45, Bothwell Street.

Parent Factory: A. B. Svenska Kullagerfabriken, Gothenburg, Sweden.

Contractors to the Admiralty and Air Board.



THE CENTRAL AIRCRAFT COMPANY,

**DESIGNERS AND CONSTRUCTORS
OF AIRCRAFT.**

**Office and Works:
KILBURN, N.W.6.**

Telegrams: AVIDUCTION, PHONE, LONDON.
Telephone: HAMPSTEAD 4403, 4404.



GLENDOWER AIRCRAFT
CO., LTD.,
54, SUSSEX PLACE, SOUTH KENSINGTON,
LONDON, S.W. 7,
AND KEW.

—Constructors of Aircraft.—

CONTRACTORS TO THE AIR BOARD.

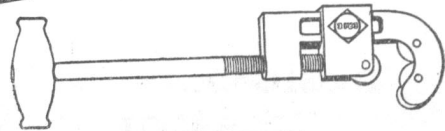
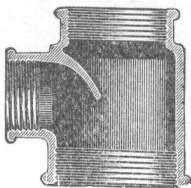
Telephone—KENSINGTON 7066-7.

Telegrams—
"GLENACELLE, SOUTHKENS, LONDON."

E. BENNETT & SON, L^{TD.}

EVERY APPLIANCE
FOR

HEATING



AEROPLANE HANGARS,
AIRCRAFT FACTORIES, ETC.

'PHONE OR WRITE FOR CATALOGUES.

PHONE : 8062-4 AVENUE.
GRAMS : SPRUCENESS,
ALD. LONDON.

45/51, LEMAN STREET, E.1.

NAPIER

The proved Best Car.

British Built

AERO ENGINES

The Chief requirement in the air is

RELIABILITY

Napier Aero Engines, like the famous Napier 6-Cylinder Car (the original and proved best), are manufactured by a firm with

**Over a Century's
Engineering Experience
Behind It.**

D. NAPIER & SON, LTD.,

WORKS: ACTON, LONDON, W.

14, NEW BURLINGTON STREET, LONDON, W.

AERO ENGINES



A British Firm beats the Germans

The man one evening told of a wonderful flight experience. He said that the machine had flown from England to France and had descended in safety during a thick fog over the German lines.

THE HANDY-PRICE.
After the two fatalities had demanded from the machine it was loaded with dynamite for a flight. The new German machine being officer Frothington took the seat which the Kaiser had created and two other officers who occupied the plane. With a burst the two engines were started and the bird the aeroplane rose in the air. It climbed rapidly to about 10,000 ft. and the Kaiser turned to General Hoppner, saying: "How is it that at such a height and on so cold a morning the lubricants do not freeze?" The British have discovered the secret which we have been seeking for months, replied the general. "Our great difficulty is now surmounted. The great difficulty is now surmounted."

Extract from "Life in Essen,"
Eye-Witness's Account, "Daily Mail," April 8/18.

THE SECRET

WAKEFIELD

Castrol "R"
MOTOR OIL (Racing)

was the lubricant used
Castrol "R" possesses the
lowest cold test of any
known Aero Engine Oil.



C. C. WAKEFIELD & CO. LTD.
WAKEFIELD HOUSE,
CHEAPSIDE, LONDON, E.C. 2.

KAISER (loq.): "How is it at such a height on so cold a morning the lubricants do not freeze?"

GEN. HÖPPNER: "The British have discovered the secret which we have been seeking for months."

Vide "DAILY MAIL," see above.

THE BRITISH AND COLONIAL AEROPLANE Co., Ltd.,

FILTON, BRISTOL.

CONSTRUCTORS OF —

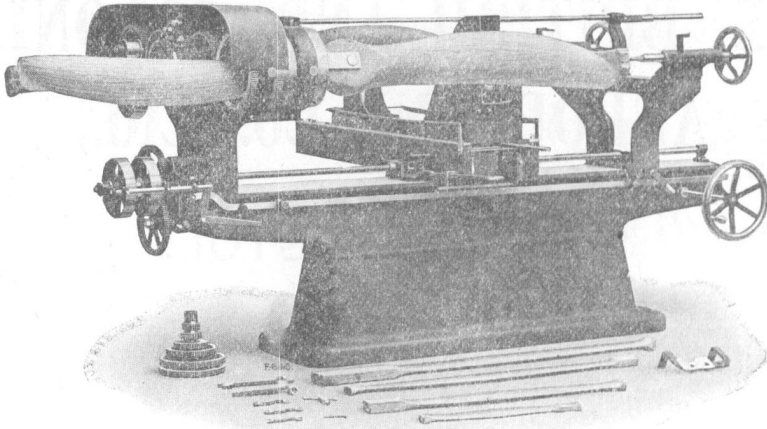
The "Bristol" Aeroplanes

CONTRACTORS TO THE
ROYAL AIR FORCE.

TELEGRAMS:
"AVIATION, FILTON."



TELEPHONES:
3906 BRISTOL.



THE MANUFACTURE OF PROPELLERS.

ALL who have seen propellers being carved out by hand will have realised the need of a machine for this work.

The Defiance Patent Propeller Forming Machine dispenses with all hand work except the final finishing operation. It will reduce the total time of production 50 per cent.

The machine works on the copying principle, the model rotating in the back centres while the blank is turned in the front centres. A roller moving over the surface of the model gives the necessary motion to the slide carrying the cutter head operating on the work.

In addition to turning propellers the machine will also deal with struts and other irregular shaped work up to 12in. diameter by 14ft. long.

As sole agents for the Defiance Machine Works we shall be pleased to place the services of a woodworking specialist at the disposal of anyone interested in propeller manufacture.

Guarantees of production can be given together with advice on the best method of operating the machine.

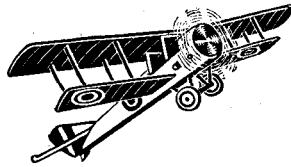
Sole Agents:

ALFRED HERBERT LTD. COVENTRY.

TELEPHONE:—
OFFICE ... 912 REGENT.
WORKS ... 4762 KENSINGTON.
" ... 281-2-3 WEMBLEY.

TELEGRAMS:—
"SOCIABLE, PHONE, LONDON."

HOOPER & CO. LTD.



AEROPLANE BUILDERS
TO H.M. AIR COUNCIL.



BY ROYAL WARRANT.



BY ROYAL WARRANT.



BY ROYAL WARRANT.

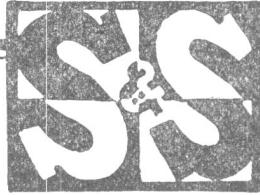
**MOTOR BODY-BUILDERS
AND COACHBUILDERS**

BY APPOINTMENT TO

**H.M. THE KING H.M. THE QUEEN
H.M. QUEEN ALEXANDRA**

**54, St. James's Street,
PICCADILLY, LONDON, S.W.1**

JAMES W. SOUTHERN & SON L^{TD}, MANCHESTER



If you want the best
ASH
 please let us know.
 We have got it.



Telegrams:
LIGNUM
 Manchester

Telephones:
 253 } Central
 4600 }
 3740 City
 68 Trafford Pk.

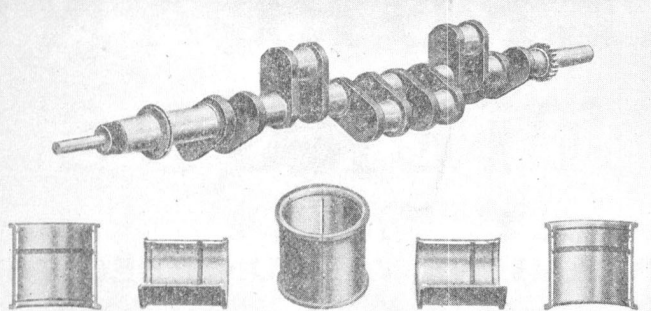
TRADE **J. RICHARDS. P.M.** MARK.
REGISTERED.

J.H. RICHARDS & CO. LTD.

CATO STREET NORTH
BIRMINGHAM

Telegrams "WESTMINSTER BIRMINGHAM," Phone EAST 800

J. H. RICHARDS & CO. LIMITED. J. RICHARDS. P.M. BIRMINGHAM.



— AERO. ENGINE CRANK-SHAFT AND BEARINGS. —

J. H. RICHARDS & CO. LIMITED. J. RICHARDS. P.M. BIRMINGHAM.

ENGINEERS & MANUFACTURERS OF
AERO & MECHANICAL TRANSPORT
ENGINE PARTS

CONN RODS · CRANK SHAFTS · ETC
Conn Rod and Main Chair Bearings,
with Steel, Phosphor-Bronze, or
Gun Metal Shells, White-Metal lined.

also
Solid White Metal Die cast
under Pressure at low temperatures.
ACCURACY GUARANTEED.

SOLE MAKERS OF "J. RICHARDS' PLASTIC METAL"
FOR LINING ALL KINDS OF BEARINGS.

**Woodside Engineering Company, Limited,
Possilpark, Glasgow.**

AEROPLANE TIERODS

IN

STREAMLINE & ROUND SECTIONS

COMPLETE WITH

:: UNIVERSAL OR FORK JOINTS ::

LARGE STOCKS.

PROMPT DELIVERY.

WORKS 1495 DOUGLAS (2 Lines).

OFFICE: 3486 CENTRAL (3 Lines):

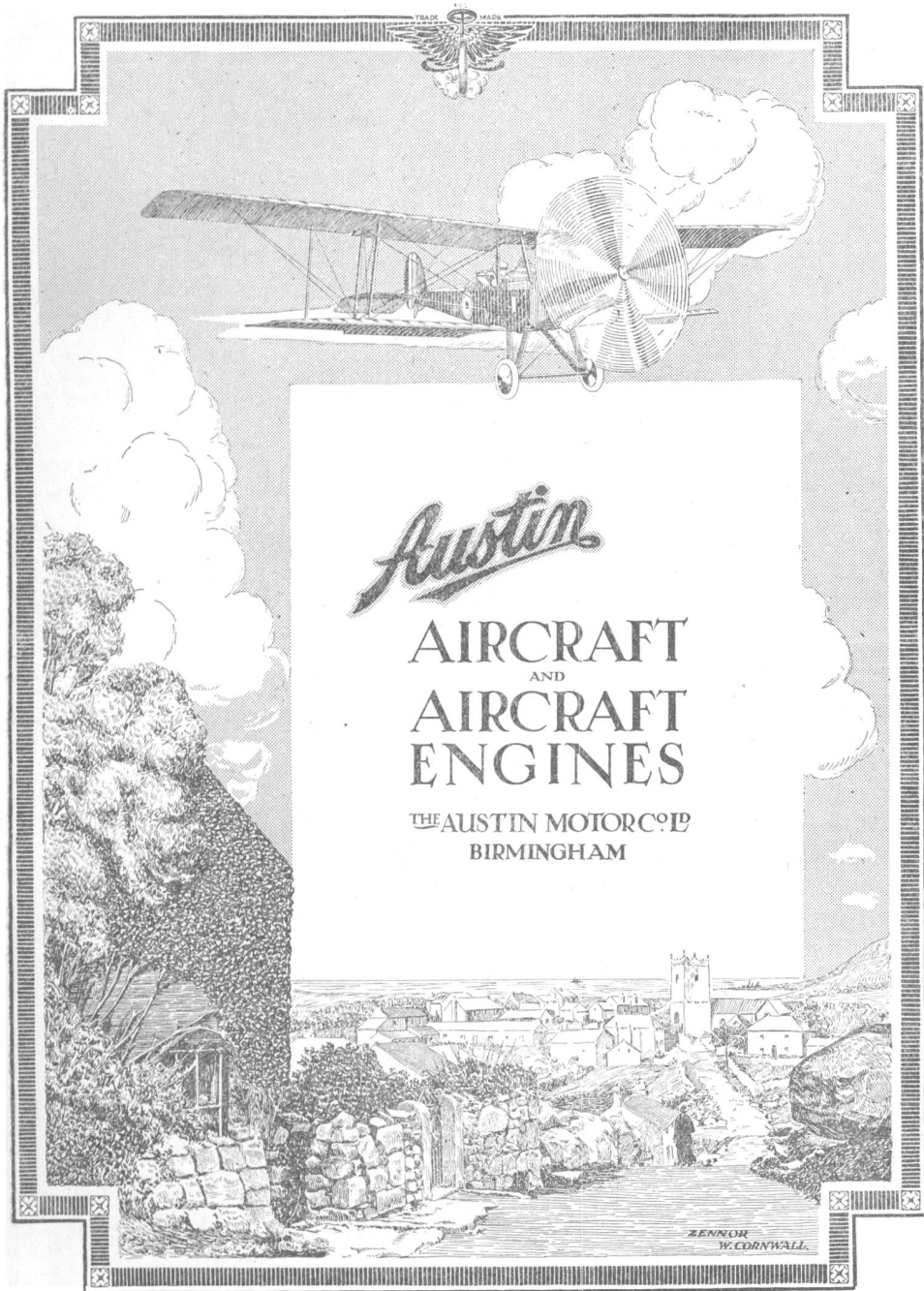
(Private Branch Exchange).

TELEGRAMS: "FUSELAGE," GLASGOW.

Registered Office:

50, WELLINGTON STREET

GLASGOW.

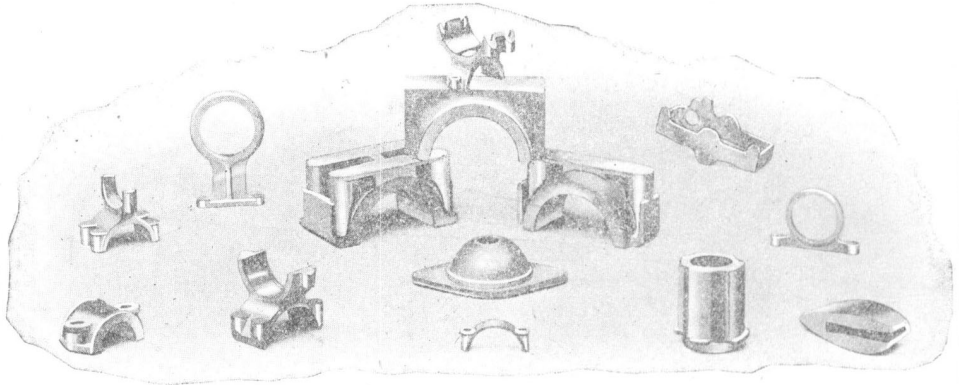


The illustration is framed by a decorative border with a repeating geometric pattern. At the top center, a winged figure with a circular emblem on its chest is positioned above a large, multi-bladed propeller. Below the propeller, a biplane is shown in flight, banking to the left. The background is filled with stylized, fluffy clouds. In the lower-left corner, a stone building with a thatched roof is partially visible. The lower-right corner shows a stone wall and a path leading towards a town with a prominent church spire. The central text is arranged as follows:

Austin
AIRCRAFT
AND
AIRCRAFT
ENGINES
THE AUSTIN MOTOR CO. LD
BIRMINGHAM

ZENKOR
W. CORNWALL

AERATORS, Limited.
PRANA WORKS, EDMONTON, LONDON, N.18.



ALUMINIUM DIE CASTINGS for ALL PURPOSES.

Speciality—

ALUMINIUM CASTINGS for AERO ENGINES,
 FIELD TELEPHONES, Etc., Etc.

WE MAKE TO ORDER—

ALLOYS

Involving the use of the following:

ALUMINIUM
 ANTIMONY
 BISMUTH
 BORON
 BERYLLIUM
 CHROMIUM

COBALT
 CADMIUM
 COPPER
 IRON
 LEAD
 MAGNESIUM

MANGANESE
 MOLYBDENUM
 NICKEL
 SILICON
 TIN
 TITANIUM

TUNGSTEN
 TANTALUM
 URANIUM
 VANADIUM
 ZINC
 ZIRCONIUM

METALS. MINERALS. THERMIT.

THE BRITISH THERMIT COMPANY, Limited,
49 TO 55, THE ALBANY,
LIVERPOOL.

Telegrams : "Thermetal, Liverpool."

Works : GARSTON.

B.S.A. Twist Drill Points

POINT ONE.
TESTED MATERIAL.

In the B.S.A. Metallurgical Laboratories experts are constantly engaged in testing all material before it is permitted to be used for B.S.A. High Speed Twist Drills. A searching chemical analysis is imposed, and the detection of the slightest deviation from the well-known B.S.A. high standard of quality is sufficient to ensure its total rejection. B.S.A. Twist Drills are guaranteed to be made only from this tested material, and are identical in quality with the thousands of drills in daily use in the B.S.A. factories.

WRITE FOR
LATEST
CATALOGUE.



Manufactured by The Birmingham Small Arms Co., Ltd., Birmingham.
SELLING AGENTS FOR ENGLAND:
BURTON, GRIFFITHS & Co. Ltd., 1, Ludgate Square,
Ludgate Hill, London, E.C.4.
Also at Birmingham, Manchester and Glasgow.

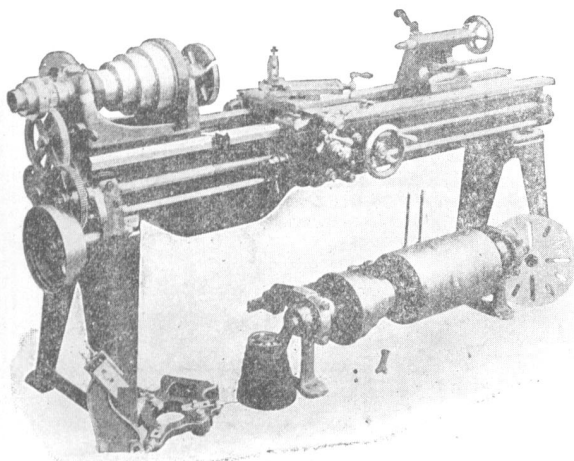


Telegrams:
"Capstan, Birmingham."

Telephone:
208-209 Smethwick.

CENTAUR MACHINE TOOLS

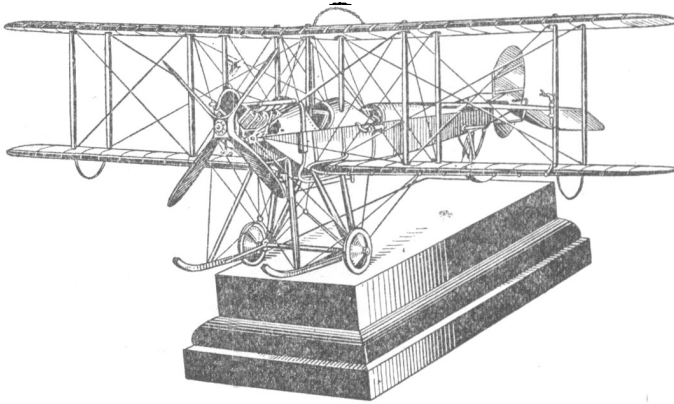
SPECIFICATION



Height of Centre	...	...	7in.
Takes between Centres	...	...	3ft. 3in.
Standard length of Bed	...	...	6ft.
Largest step of Cone	...	...	9in.
Width of Cone	...	...	2½in.
Diameter of hole through Spindle	...	...	1½in.
Size of Countershaft Pulleys	10in. x	5½in.	
Speed	...	(for general work)	120 R.P.M.
Swing over compound rest	...	...	7½in.
Travel of top slide	...	...	3½in.
Pitch of leading screw	...	...	6 threads per in.
Approximate weight (packed for shipment)	...	...	17 cwt.
	...	...	13½ cwt.

Makers—
Centaur Tool Works
LTD.
SMETHWICK : BIRMINGHAM.

Makers to British, French,
and Russian Governments.



Aeroplane Models

THE Silver Model of an Aeroplane illustrated shows how technical knowledge and skilled workmanship are allied in the models produced by the Goldsmiths and Silversmiths Company.

Infinite care is taken to ensure every detail being accurate and of proper proportions, and to reproduce an exact replica of the original.

Models can be prepared from the original or from a photograph. Estimates and designs will be submitted free upon application.

The Goldsmiths and Silversmiths Company have no other establishments in Regent Street, Oxford Street, or anywhere else in London, and no branches in the Provinces or Abroad.

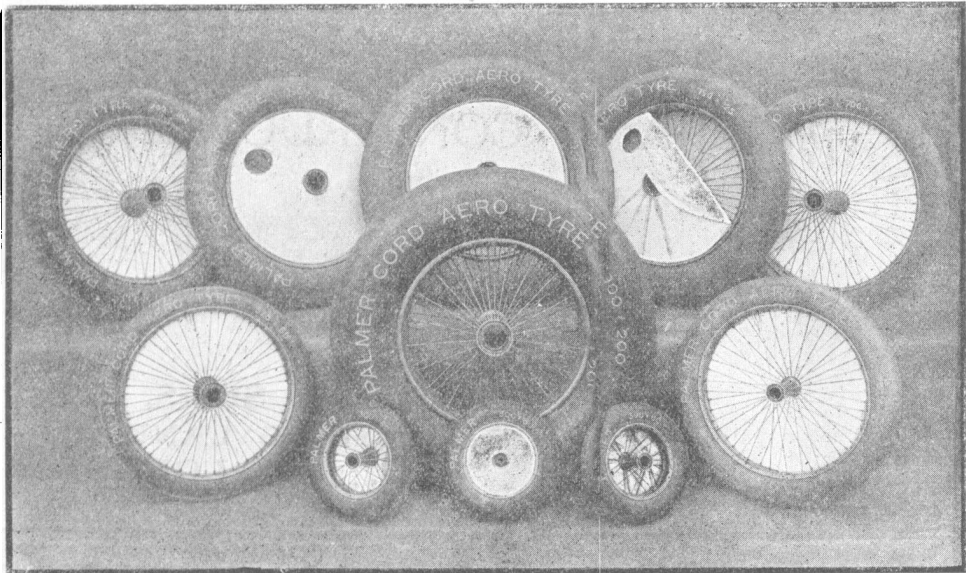
**THE
GOLDSMITHS & SILVERSMITHS
COMPANY LTD.** with which is incorporated The Goldsmiths' Alliance Ltd. Established 1734

112, Regent Street, London, W. I.



PALMER

Landing Wheels and Tyres.



STANDARD SIZES:

Tyre Sizes.	Wheel No.	Hub.		Track Line.	Tyre Sizes.	Wheel No.	Hub.		Track Line.
		Length.	Bore.				Length.	Bore.	
300 x 60	16	m/m 111.12	m/m 25.4	m/m Central	750 x 125	33	m/m 150.	m/m 38.09	m/m Central
	17	72.39	12.7	Central		77	178.	44.45	132/46
	21	89.	31.75	Central		92	185.	55.	135/50
450 x 60	30	160.	28.	Central	95	185.	55.	Central	
575 x 60	34	150.	31.75	104/46	96	178.	55.	132/46	
	111	150.	38.09	104/46	99	178.	38.89	132/46	
	78	178.	44.45	132/46	112	150.	40.	Central	
650 x 65	79	178.	44.45	Central	36†	185.	55.	135/50	
	100	178.	38.09	132/46	40†	185.	60.32	135/50	
	101	178.	31.75	132/46	41†	185.	55.	Central	
600 x 75	21	160.	28.	Central	82	185.	55.	135/50	
	34	150.	31.75	104/46	85	185.	55.	Central	
	111	150.	38.09	104/46	106	185.	47.62	135/50	
700 x 75	78	178.	44.45	132/46	205†	185.	60.32	Central	
	79	178.	44.45	Central	97	250.	65.4	Central	
	100	178.	38.09	132/46	102	185.	55.	125/60	
700 x 100	101	178.	31.75	132/46	201	185.	60.32	125/60	
	33	150.	38.09	Central	107	185.	55.	Central	
	77	178.	44.45	132/46	108	185.	55.	125/60	
650 x 125	92	185.	55.	135/50	120	185.	66.67	125/60	
	95	185.	55.	Central	202	185.	60.32	Central	
	96	178.	55.	132/46	208	185.	60.32	125/60	
650 x 125	99	178.	38.89	132/46	52	185.	55.	116/69	
	112	150.	40.	Central	57	185.	55.	Central	
	119	178.	55.	132/46	203	185.	60.32	116/69	
						204	185.	60.32	Central

† Wheels Nos. 36, 40, 41 and 205 are of stronger type than the other wheels for 800 x 150 tyres.

THE PALMER TYRE LIMITED,

Contractors to the Admiralty, the War Office, and the Ministry of Munitions.

119, 121, 123, SHAFTESBURY AVENUE, LONDON, W.C.2.

Telegrams: "TYRICORD, WESTCENT, LONDON."

Telephone: GERRARD 1214 (Five Lines).

PARIS: 24, Boulevard de Villiers, Levallois-Perret.

HIDE GLUES

FOR
AIRSCREWS
AND
AIRCRAFT CONSTRUCTION.

APPROVED GLUES.

Manufacturers—
WM. OLDROYD & SONS, Ltd.,
9, MINCING LANE,
LONDON,

TELEPHONE
4978 Avenue.

E.C. 3.

WYCOMBE AIRCRAFT CONSTRUCTORS, **Ltd.**

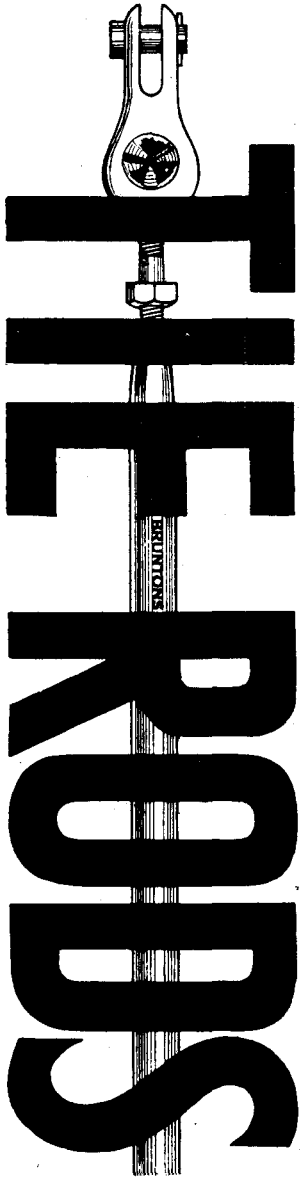
Contractors to H.M. Government.

Telegrams :—Aircraft, High Wycombe.

Telephones :—High Wycombe 84.
(Stores—High Wycombe 120.)

HIGH WYCOMBE.

ORIGINAL
MANUFACTURERS OF
STREAMLINE



BRUNTONS
MUSSELBURGH
SCOTLAND. —

A LUMINIUM CYLINDERS.

WATER AND AIR COOLED.

ALUMINIUM CASTINGS

Of every description for

AEROPLANE AND MOTOR ENGINES

IN SPECIAL STRONG LIGHT ALLOYS.

CAST IRON CYLINDERS

WATER AND AIR COOLED

FOR

AEROPLANE & MOTOR ENGINES.

WILLIAM MILLS, Ltd.,

Contractors to H.M. Government,

Grove Street,

Telegrams—"WILMIL, BIRMINGHAM."

Telephone—SMETHWICK 9.

BIRMINGHAM.

99%
Ninety-nine per cent of the Magnetos fitted to Rotary Engines for fighting scouting and observation planes, are of 'ML' manufacture.

M-L Magnetos are lighter and smaller (yet stronger) than any pre-war magnetos of same electrical capacity. They are of British design and built by British labour in a British-owned factory. They have been supplied in large numbers for work of national importance.

The M-L Magneto, Type A.D.S., is designed for use on rotary or other engines in which the distributor is carried on the engine itself and does not form a part of the magneto. It is fitted with an "H" armature and gives two sparks per revolution.

THE
M-L MAGNETO SYND. LTD.,
VICTORIA WORKS
COVENTRY.

SANKEY

LIGHT STEEL STAMPINGS FOR AEROPLANES

Any size or weight ; rough or machined ;
Single piece or combination pressed and
welded by Oxyacetylene and other processes.

JOSEPH SANKEY & SONS, LTD.,
HADLEY CASTLE WORKS,
WELLINGTON,
SHROPSHIRE.

W. G. TARRANT,

Contractor to Air Board.

Aircraft Head Offices :

BYFLEET, SURREY.

TELEPHONE: BYFLEET 1.

„ 2.

„ 3.

London Offices :

CLOCKHOUSE,

ARUNDEL STREET,

STRAND, W.C.

TELEPHONE: GERRARD 8362.

Wrights'

THE ROPE MAKERS

Established

1770.

Highest Quality
STEEL WIRE CORDS &
STRANDS FOR AIRCRAFT.

Contractors to H. M. Admiralty and War Office.

J. & E. WRIGHT, Ltd.,

Universe Wire Rope Works,
BIRMINGHAM.

Telegrams: "UNIVERSE, BIRMINGHAM."

Telephone: CENTRAL 6914 (3 lines).

BOULTON & PAUL, LTD
MAKERS OF AIRCRAFT **NORWICH**

THE name of BOULTON & PAUL, LTD., immediately suggests the highest possible standard of craftsmanship in metals and wood. So, when the need came, the firm was amongst the first chosen for this special work, and, fully maintaining its reputation, is now amongst the largest contractors for Aircraft Construction.




Telegrams: AVIATION. NORWICH
 Telephone: 851 NORWICH (5 lines)

FOUNDED 1797

BURTON, DELINGPOLE & CO



MANUFACTURERS OF

CAPSTAN & AUTOMATIC WORK

IN BRASS, STEEL, GUNMETAL, ETC.,

FOR ALL BRANCHES OF THE
MOTOR & AEROPLANE INDUSTRIES.

DROPFORGINGS

STAMPINGS ONLY OR FINISHED—
 MACHINED TO CUSTOMERS' REQUIREMENTS.

HEAD OFFICES: MOSELEY ST., BIRMINGHAM.

WORKS: BIRMINGHAM & OLD HILL (STAFFS).

GROVE GLUES

FOR AIRCRAFT

and all other purposes.

**THE GROVE CHEMICAL Co., Ltd.,
APPLEY BRIDGE, near WIGAN.**

Telegrams—"CROWN, APPELTY BRIDGE."

Telephone--12 PARBOLD.

**THE
TALBOT-STEAD
TUBE CO., LTD.,
WALSALL.**

**Solid Drawn Steel Tubes.
Bright Drawn Steel Bars.
Bright Steel Nuts & Bolts.**

*11 Years' Experience in Drawing
Bright Bars.
Prompt Delivery for
Urgent War
Work.*

Tele-
phone:
328.

Tele-
grams:
Talbot,
Walsall

GWYNNES

LIMITED.

CONTRACTORS TO H.M. GOVERNMENT.

MANUFACTURERS AND SOLE LICENSEES IN THE BRITISH EMPIRE.

“CLERGET” PATENT AERO ENGINES



ENGINEERS,
LONDON.

Telegrams: "Gwynne, London."

Telephone:
Central 1449.

Cable & Telegraphic Address:
"Canton," Sheffield.

THE
CANTON STEEL & TOOL CO.,
CANTON STEEL WORKS,
CORNISH STREET, SHEFFIELD.

Manufacturers of . . .

"Canton" High Speed Steel.

CAST & TOOL STEELS for EVERY DESCRIPTION of TOOLS.

AIRCRAFT STEELS to A.I.D. Inspection and Tests.

Contractors to H.M. Government.

On "Lloyd's Register."

Hors Concours Membre du Jury: Brussels International Exhibition, 1910.
Grand Prix London, 1908, and Buenos Aires, 1910.



Telegrams:
JONAS,
SHEFFIELD.

REGISTERED



TRADE MARKS

Telephone:
No. 4660.
PRIVATE BRANCH
EXCHANGE.



SIR JOSEPH JONAS, COLVER & Co., LTD.,

Manufacturers of Steel of every description, including

HIGH GRADE NICKEL STEEL and FORGINGS

for Naval and General Marine Purposes.

Special Heat Treated Alloy and other Steels for Aircraft and
Automobile Purposes.

IMPORTANT SPECIALITIES:

S. S. G.

A SPECIAL NICKEL CHROME GEAR STEEL.

FOR AIR OR OIL HARDENING. When treated this steel has exceedingly tough properties and is specially suitable for Gear Wheels, Connecting Rods, etc.

S. G. W.

A NICKEL CHROME STEEL in 4 GRADES.

Eminently suitable and strongly recommended for Gears, Crankshafts, and other highly stressed parts, and having exceptional machining qualities. Combines unusually heavy shock-resisting and wearing properties with silent running.

G. P. S.

A HIGH GRADE ALLOY CASE HARDENING STEEL

for severely strained parts, such as Gear Wheels, Gudgeon Pins, etc.

Continental Steel Works and Novo Steel Works, Sheffield.

S**ANDERSON** **B****ROTHERS**

& N**EWBOULD, LTD.,**

**ATTERCLIFFE FORGE and ROLLING MILLS,
SHEFFIELD.**

Makers of High-Class

**AIRCRAFT
STEELS**

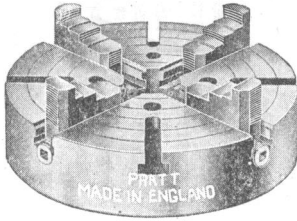
**Either Rolled or Heat Treated
to**

AIR-BOARD SPECIFICATIONS.

Ask for our Special Book on

HIGH TENSILE STEELS.

BRITISH MADE CHUCKS.

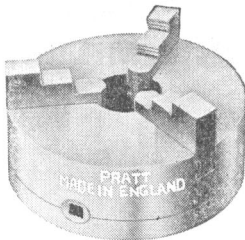


Independent 4-Jaw Chucks.

Reversible Jaws and Heavy Bodies.

Screws have Double-thrust Bearings (10in. size and upwards).

STANDARD SIZES:—4½, 6, 8, 9, 10, 12, 14, 15, 16, 18, 20, 22 and 24in. diam.



3-Jaw Geared Scroll Chucks.

Self-Centring.

SIZES IN PROGRESS : 6in., 7½in. and 9in. diam.

With One or Two Sets of Jaws as required.

Price Lists on Application.

Can be had from all Merchants and Dealers.

Manufactured by—

F. PRATT & CO., LTD., HALIFAX, ENG.

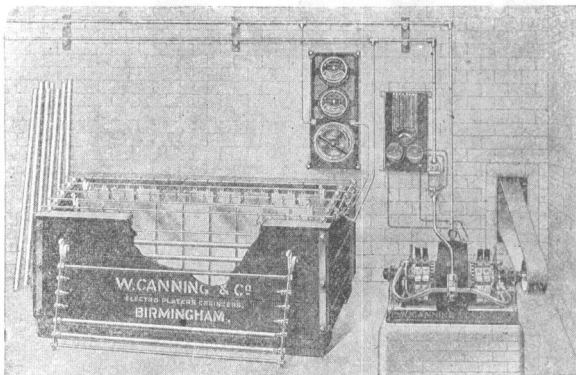
Telegrams : "Pratt, Halifax."

Telephone : No. 161.

W. CANNING & Co.,

MANUFACTURERS OF

PLANT AND MATERIALS



FOR

**ELECTRO-ZINCING,
NICKEL PLATING,
TIN PLATING,
LEAD PLATING,
COPPER PLATING,
BRASS PLATING,
SILVER PLATING,**

etc., etc.

**POLISHING MACHINERY AND MATERIALS.
ENAMELLING AND DRYING STOVES.
LACQUERING AND DRYING TABLES.**

Great Hampton St., BIRMINGHAM.

18-20, St. John's Square, Clerkenwell, LONDON.

GRAHAME-WHITE

AVIATION CO., Ltd.

⊕

AERONAUTICAL
DESIGNERS &
CONSTRUCTORS

⊕

CONTRACTORS TO
THE ADMIRALTY
AND WAR OFFICE.

PROPRIETORS OF THE
LONDON AERODROME
and the
GRAHAME-WHITE SCHOOL
OF AVIATION.

HENDON.

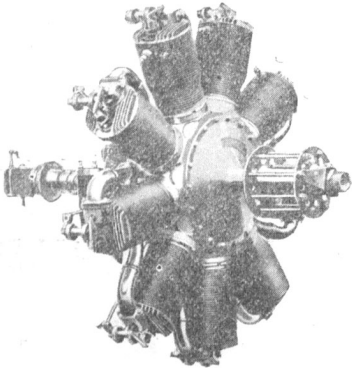
— HEAD OFFICE AND WORKS: —
LONDON AERODROME, HENDON, N.W. 9.

TELEGRAMS: "VOLPLANE, HYDE, LONDON."

TELEPHONE: KINGSBURY 120 (Five Lines)



W. H. ALLEN SON & CO. LTD.



AIRCRAFT ENGINES

QUEEN'S ENGINEERING WORKS, BEDFORD.

“ NIEUPOORT ”

— AND —

General Aircraft Company, Ltd.

Contractors to H.M. Government.

REGISTERED OFFICE AND WORKS :

**LANGTON ROAD, CRICKLEWOOD,
LONDON, N.W.2.**

Telephone (3 lines) :
WILLESDEN 2455.

Telegrams :
NIEUSCOUT, CRICKLE, LONDON

A FEW **LABOUR SAVING DEVICES**

SOLE PATENTED IN BRITAIN. WRITE FOR ILLUSTRATED CATALOGUE AND FURTHER DETAILS IN REFERENCE TO THE ABOVE TO
JOHN T. HARDAKER, LTD., BOWLING IRON WORKS, PASSY LANE, BRADFORD.
 BRANCHES IN LONDON, BELFAST, GLASGOW, BIRMINGHAM,
 BOMBAY, MELBOURNE, MONTREAL, &c.

HARDAKER'S Patent JACKTRUCKS.

Specially designed for transporting
Aeroplane Engines on working
benches.

Used by all the leading Aero
Engine makers and Aircraft
Stores, etc.

Write for full Illustrated
Catalogue to

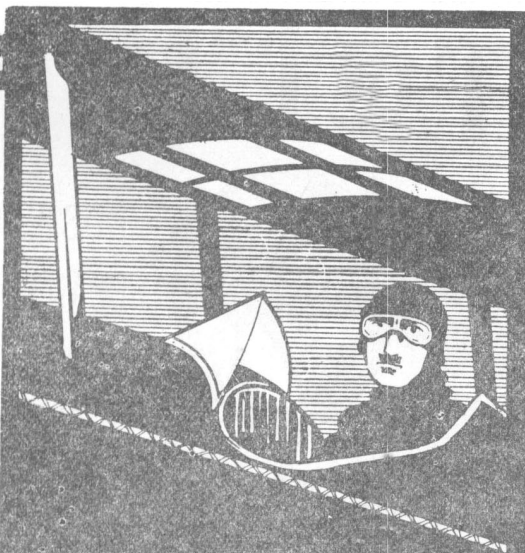
(Sole Makers and Patentees):

**JOHN T. HARDAKER,
LTD.,
(AERO TRUCK DEPT.),
Bowling Ironworks,
BRADFORD, YORKS.**

Telegrams: "GIMP, BRADFORD."
Telephone: 120 DUDLEY HILL.

'TRIPLEX'
GIVES
PERFECT
VISION
AND
ABSOLUTE
SAFETY.

IT
CANNOT
BE
SPLINTERED.



'TRIPLEX'
IS THE
ONLY
SAFETY
GLASS FOR
WINDSCREENS,
OBSERVATION
PANELS,
GOGGLES, Etc.

COGGLES FROM
7/6 PER PAIR.

'TRIPLEX' SAFETY GLASS

Manufactured Solely by
The 'Triplex' Safety Glass Co., Ltd., (Reginald Delpach, Managing Director.)
1, Albemarle Street, Piccadilly, London, W.1.

W. GILBERTSON & CO.,

— LIMITED, —

PONTARDAWE, GLAMORGAN.

Contractors to Admiralty, War Office, India Office, etc.

Manufacturers of Special Steels of all kinds.

STEEL BARS.
STEEL BILLETS.
SPECIAL STEEL.
HIGH CARBON STEEL.
ALLOY STEEL.
GALVANISED SHEETS.

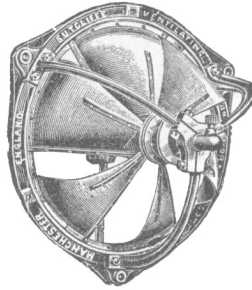
CAPACITY OF OUTPUT
3,000 tons
per week.

CORRUGATED SHEETS.
BLACK SHEETS.
ARMATURE SHEETS.
TINPLATES.
TERNE PLATES.
ALUMINIUM Coated Plates

SUTCLIFFE.

WARMING
AND VENTILATING
PLANTS

FOR DOPE ROOMS.



DUST COLLECTING
PLANTS

FOR GRINDING and
POLISHING SHOPS.

CONTRACTORS TO THE WAR OFFICE AND ADMIRALTY.

Ask for copy of New Booklet, just issued, "The Warming and Ventilating of Dope Rooms and Aeroplane Factories to satisfy Home Office requirements." Sent post free on request.

SUTCLIFFE VENTILATING & DRYING Co., Ltd.,

Cathedral Gates,
MANCHESTER.

T.N.—3920 City Manchester.

T.A.—Ventilabro, Manchester.

MARTINO'S TREATING AND TESTING WORKS LTD.

HEAT TREATMENT OF STEEL TO AIR BOARD SPECIFICATIONS.

Telephone:
No. 845
COVENTRY.

NORMALISING.
ANNEALING.
HARDENING.
OIL QUENCHING
and TEMPERING.
CASE HARDENING.

Telegrams:
"QUENCHING,"
COVENTRY.

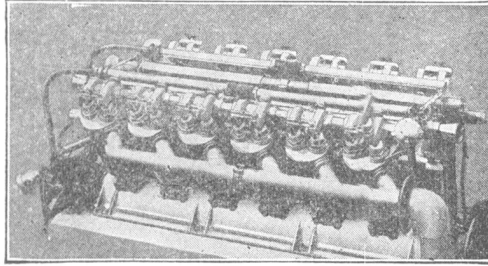
MECHANICAL TESTING. & CHEMICAL ANALYSIS.

SANDY LANE, COVENTRY.

HOYT BEARING METALS,

IN LARGEST USE FOR AERO ENGINES.

300-H.P.
"GREEN"
AERO
ENGINE.



BEARINGS :
HOYT
METAL
LINED.

NUMBER ELEVEN—THE WORLD'S BEST.

OUTLASTS ALL OTHERS.



ABSOLUTELY THE HIGHEST QUALITY WHITE METAL MADE.
SPECIMEN TWISTED AND HAMMERED COLD. SHOWING TOUGHNESS.
COMPRESSION REQUIRED TO CRACK TEST SAMPLES: 20'55 TONS SQ. IN.

THE HOYT METAL CO., LTD.,

(WORKS : MILLWALL, E.)

189, HAMMERSMITH ROAD, LONDON, W.6.

PETTERS LIMITED.

AIRCRAFT CONSTRUCTORS
TO THE ADMIRALTY.

Orders can be accepted for
Complete Machines
Propellers
Parts.

WESTLAND AIRCRAFT WORKS

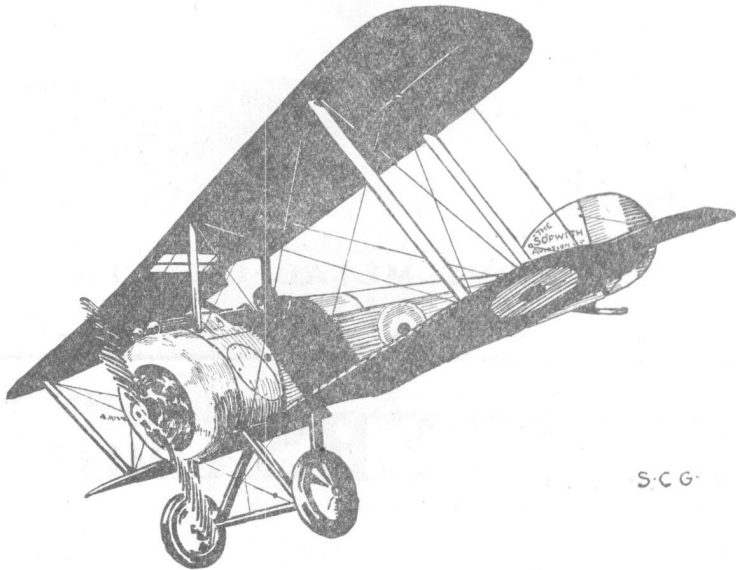
(Branch of Petters Limited),

YEOVIL, ENGLAND.

Telegrams : "Aircraft-Yeovil."

Telephone : Yeovil 129.

THE SOPWITH



S-C-G

AVIATION COMPANY, LIMITED
KINGSTON-ON-THAMES, ENGLAND.

CONTRACTORS TO H.M. GOVERNMENT.

Telephone: KINGSTON 1988 (8 lines).
Telegrams: SOPWITH, KINGSTON.



Paris Office:
21, RUE DU MONT THABOR.

The Aëronautical Journal.

THE ORGAN OF THE ROYAL AËRONAUTICAL SOCIETY.

CONTENTS, MAY, 1918.

For the opinions expressed in papers that are signed or initialled the authors alone are responsible. None of the papers or paragraphs must be taken as expressing the opinion of the Council of the Royal Aëronautical Society, unless such is definitely stated to be the case.

	PAGE
I. NOTICES	123
II. THE ANNUAL GENERAL MEETING	125
III. COUNCIL'S REPORT, 1917-1918	127
IV. TIMBER: ITS IDENTIFICATION AND MECHANICAL PROPERTIES, BY W. H. BARLING, A.R.C.Sc., B.Sc. ASSOC. FELLOW	134
V. PROCEEDINGS OF EIGHTH MEETING, 53RD SESSION	153
VI. ABSTRACTS	171
VII. REVIEWS	176
VIII. RECENT ADDITIONS TO THE LIBRARY	176

All communications respecting Editorial Matters should be addressed to—

THE EDITOR, 7, Albemarle Street, W.1.

Telegrams: "DIDASKALOS, PICOY, LONDON."

TELEPHONE: 7373 GERRARD.

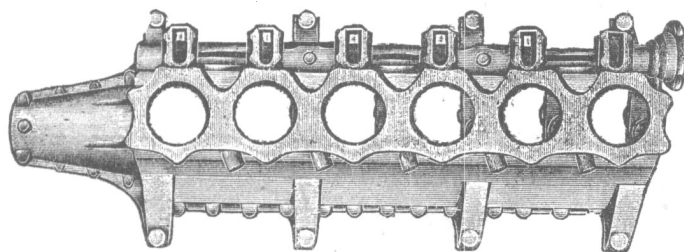
All communications respecting Advertisement Matters should be addressed to—

The Advertisement Manager, 63, Ludgate Hill, London, E.C.4.

THE ALUMINIUM CASTINGS CO. LD

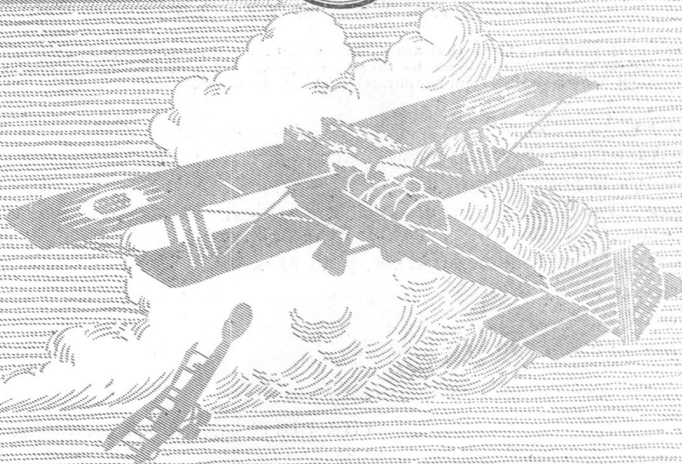
ESTABLISHED 1901.

SOUND CASTINGS.



PROMPT DELIVERIES.

Ingleston Foundry, GREENOCK, SCOTLAND.

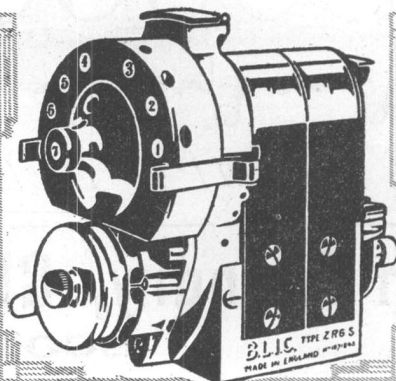


B.L.I.C.

THE BRITISH LIGHTING & IGNITION CO. LTD.

MODERN WARFARE is the supreme test of all mechanism—whatever the circumstances, it must not fail. And under these strenuous conditions the "B.L.I.C." Magneto has fully demonstrated its unrivalled superiority. Built in a British factory by British workmen, it is the most reliable Magneto yet constructed—British or foreign.

THE BRITISH
LIGHTING AND
IGNITION
CO., LTD.



204, TOTTENHAM
COURT ROAD,
LONDON, W.

Proprietors: VICKERS, LTD.