

THE
AËRONAUTICAL
JOURNAL.

The
Organ of the
Aëronautical Society
of
Great Britain.

—
Entered at
Stationers'
Hall.



Edited for
the Council of the
Aëronautical Society of
Great Britain

by
W. Barnard Faraday,
LL.B., F.S.S.

Price to Non-Members and Non-Subscribers, 2s. 9d. post free.

No. 85.

JANUARY, 1918.

Vol. XXII.

VICKERS LIMITED.

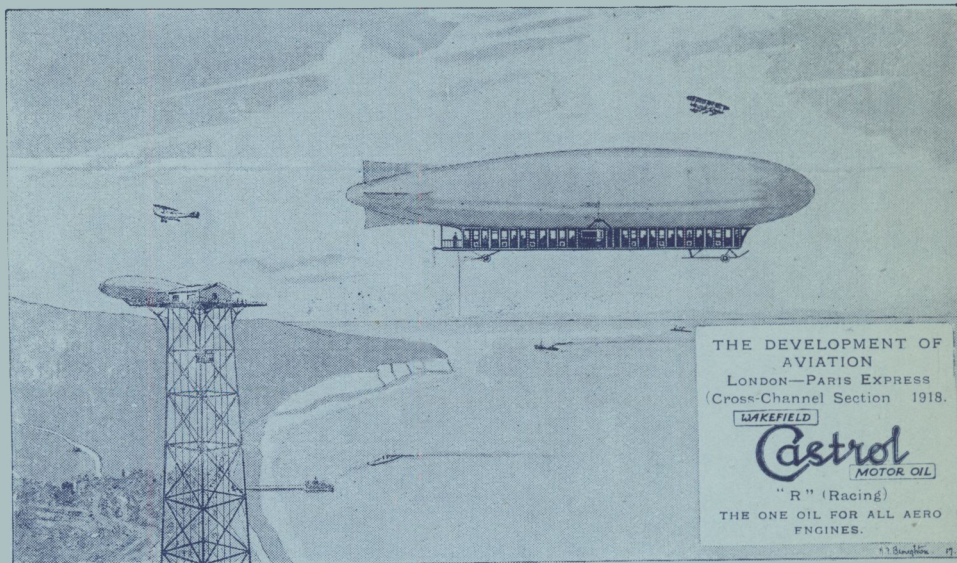
Contractors to the
WAR OFFICE & ADMIRALTY.

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

Telephone:
No. 6810 KENSINGTON (2 lines).



Telegraphic Address:
"VICKERFYTA-KNIGHTS, LONDON."



THE DEVELOPMENT OF
AVIATION
LONDON—PARIS EXPRESS
(Cross-Channel Section 1918.
WAKEFIELD
Castrol
MOTOR OIL
"R" (Racing)
THE ONE OIL FOR ALL AERO
ENGINES.

C.D.C.

C. C. WAKEFIELD & CO., Wakefield House, Cheapside, London, E.C.2.
(Proprietor: SIR CHARLES WAKEFIELD, Bart.)

CRADOCK'S STEEL WIRE STRANDS & CABLES FOR RIGGING AIRCRAFT.

AS THE QUESTION OF SOUND RIGGING IS ONE OF SUCH VITAL IMPORTANCE, THE BEST ONLY SHOULD BE USED.

Since the Advent of Flying, this Company,—

WHO HAVE MANUFACTURED STEEL WIRE ROPES FOR OVER 60 YEARS,
have made a special study of this class of work, and have for some years now supplied

SPECIAL FLEXIBLE STRANDS AND CABLES FOR AVIATION

constructed of 7, 19, 37, 49, 133, and 259 Galvanized or Plated Steel Wires of the greatest tensile strain possible compatible with the requisite ductility and toughness, and ranging from

BREAKING STRAINS of from 375 to 18230 Lbs.

THERE IS NOTHING BETTER OBTAINABLE.

GEO. CRADOCK & Co. Ltd., WAKEFIELD.

CONTRACTORS TO THE
ADMIRALTY
AND THE WAR OFFICE.

CABLES SUPPLIED TO R.A.F. SPECIFICATION.

DESCRIPTIVE BOOKLET WITH FULL DETAILS ON APPLICATION.

SUNBEAM-COATALEN AIRCRAFT MOTORS

CONTRACTORS TO H.M. ADMIRALTY,
RUSSIAN GOVERNMENT AND #
FRENCH GOVERNMENT. #

The **SUNBEAM MOTOR CAR CO., LTD.**
Head Office and Works - - WOLVERHAMPTON.

THE

Aircraft Manufacturing Co., Ltd.



Contractors to the
WAR OFFICE AND ADMIRALTY.

LONDON OFFICE :
47, VICTORIA STREET, S.W.1.

OFFICES & WORKS :
HENDON, N.W.

SIDDELEY-DEASY

Contractors for Aeroplanes and Aeroplane
Engines to His Majesty's Government
Aeroplanes and Aeroplane Engines
constructed to Government Designs
Manufacturers of Siddeley-Deasy
Motor Carriages of Perfect Comfort



GODSOLDS

F. W. BERWICK : : & Co., Ltd. : :

**AEROPLANE & AERO
Engine Manufacturers
TO THE AIR BOARD**

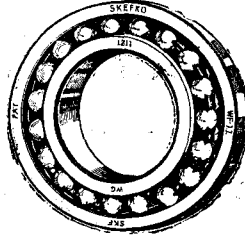


PARK ROYAL, LONDON, N.W.10.

Telephone: 2490 Willesden (5 lines).

Telegrams: "Berwicks, Harles, London."

"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, Bthwell Street.
Parent Factory: A. B. Svenska Kullagerfabriken, Gothenburg, Sweden.

The Pioneers

Of the Plywood industry were Venesta Ltd.; they held the premier position then because there were no competitors. Now, in the face of increasing competition from almost every country in the world, they hold it still—indisputably.

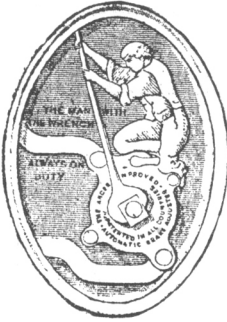
VENESTA PLYWOOD

It is in constant demand by the British and Allied Governments, the largest Shipbuilding and Railway Companies, Aeroplane & Motor Car Builders, etc. It is waterproof, unshrinkable, and practically indestructible, and these qualities, together with its smooth, clean surface, make it the finest material in the world for panelling of every description.

Write for Booklet and Samples.

Venesta Ltd.
LONDON TOWER ST.
LONDON





IMPORTANT NOTICE

TO ALL

Engineering Firms

... AND ...

Aircraft Manufacturers.

We beg to call your attention to the following work that we specialise in, and solicit your valued inquiries. We can quote prices and deliveries that will be attractive to you for all classes of work, or to any special specification and requirements for all work in connection with Ministry, Admiralty, or Air Board.

Drop Stampings and Forgings for all purposes, in Steel and Iron.

Brass or Bronze (Hot Stampings).

Sand or Die Castings in All Metals.

Sheet Metal Pressings.

Soft Grey Iron Castings; Malleable Iron and Cast Steel Castings.

Wood Wheels; Axles; Swingle Trees; Chain Work; Leather Work, and General Iron Work for all types General Service Vehicles.

ALSO

Component Parts in Steel Forgings or Stampings for Aeroplane Work, including A.G.S. No. 158 Shackles; Steel Stampings, sizes A, B, C, D, E & F.

THE ANGER MANUFACTURING AND SUPPLY CO., LIMITED,

PRESTON, Lancashire.

Telephone: 1033. Telegrams: "Brakjuster, Preston."



THE BRITISH AND COLONIAL AEROPLANE Co., Ltd.,

FILTON, BRISTOL.

CONSTRUCTORS OF —

The "Bristol" Aeroplanes

CONTRACTORS TO

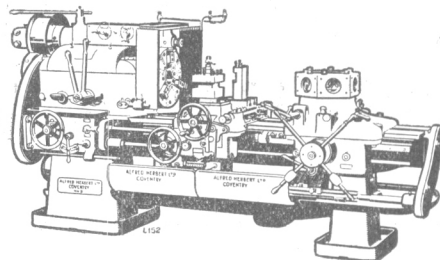
H.M. AIR FORCES.

TELEGRAMS:
"AVIATION, FILTON."



TELEPHONES:
3908 BRISTOL.

WHAT IS A "NUMBER NINE" ?



TO many of the operators in machine shops up and down the country these words mean a No. 9 Combination Turret Lathe made by Alfred Herbert, Ltd., Coventry.

This particular machine has proved of such value in the production of munitions of all kinds, and has so endeared itself to the men in the shop by its Power, Rigidity, Accuracy, and general Dependability, that they speak of it affectionately as a "Number Nine."

The No. 9 Combination Lathe is not a war machine—it established a reputation long before the outbreak of hostilities.

In common with our other products, it has been modified and improved from time to time, to keep pace with the demand for a continual increase in the general efficiency of labour-saving machine tools.

One job which the No. 9 may be said to have taken for its own is the machining of cylinders for rotary engines. This is very exacting work, which entails great belt power in order to remove metal rapidly when roughing out, and a high degree of accuracy and durability in the machine, to cope with the fine limits necessary in the finished product.

We can furnish tool equipments for dealing with any repetition work, and give guarantees of production.

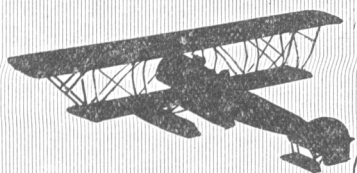
CAPACITY :

Height of Centres	10in.
Swing over Bed	20in.
Swing over Cross Slide	12½in.
Maximum diameter of Bar admitted through Spindle ...	3½in.
Maximum distance Spindle Flange to Face of Turret ...	48in.

PROMPT DELIVERY.

ALFRED HERBERT LTD. COVENTRY.

“Always at the Front”



Contractors
to
H.M
GOVERNMENT

From the
earliest days
of Aviation, the
Blackburn firm
have been

PIONEERS

in design and construction.

To-day Blackburn
machines are

“Always at the
Front.”

Blackburn
AIRCRAFT

Steele's Ad. Serv.

The BLACKBURN AEROPLANE AND MOTOR Co., Ltd.,
Olympia, LEEDS, and at Hull.

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.

**MOTOR-BODY-BUILDERS
 and COACHBUILDERS to**

HIS MAJESTY THE KING.
 HER MAJESTY THE QUEEN.
 H.M. QUEEN ALEXANDRA.
 H.R.H. THE DUKE OF CONNAUGHT.
 H.M. THE KING OF SPAIN.
 H.M. THE KING OF NORWAY,

**FOR SIXTY YEARS
 COACHBUILDERS**

TO
 HER MAJESTY QUEEN VICTORIA.

AND

FOR NEARLY FIFTY YEARS TO
 HIS MAJESTY KING EDWARD.

54, St. James's Street,

PICCADILLY, LONDON, s.w.1.

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.

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.

OUR Norwich Aircraft Works are specially constructed and organised for the scientific design and efficient manufacture of up-to-date Seaplanes and Aeroplanes in large quantities.

MANN EGERTON & Co.Ltd.

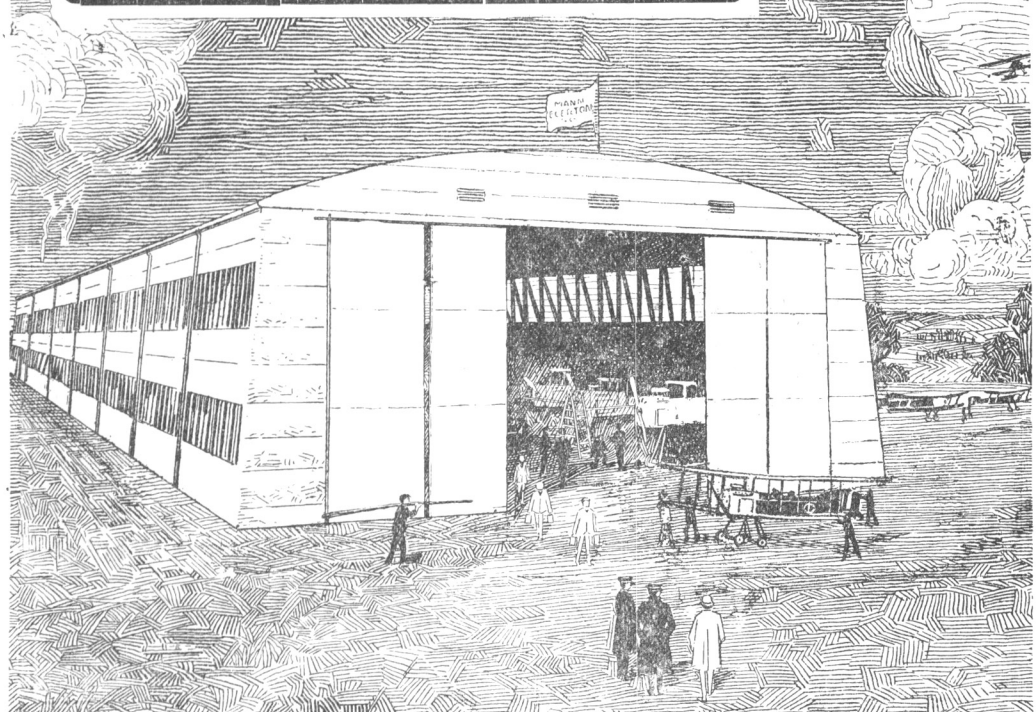
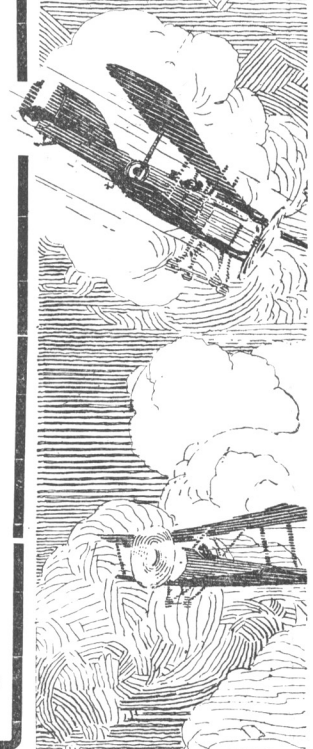


**Contractors to the
Admiralty and
H.M. War Office.**

HEAD OFFICE AND WORKS:

AIRCRAFT WORKS, NORWICH

LONDON IPSWICH BURY ST. EDMUNDS
379-381 Euston Road, N.W.1. 39 Princes Street County Garage





**Aerodrome and Auxiliary Works :
BROOKLANDS.**

MARTINSYDE LTD.

**Head Office and Works
WOKING
Surrey**

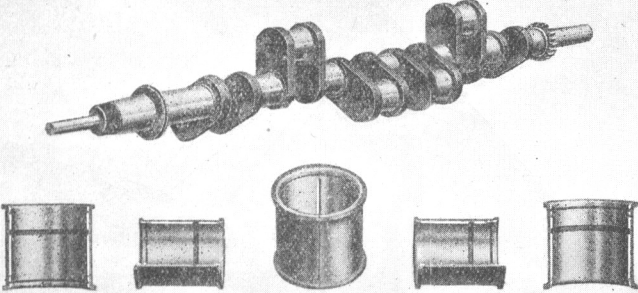
TRADE **J. RICHARDS. P.M.** MARK.
REGISTERED.

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. —

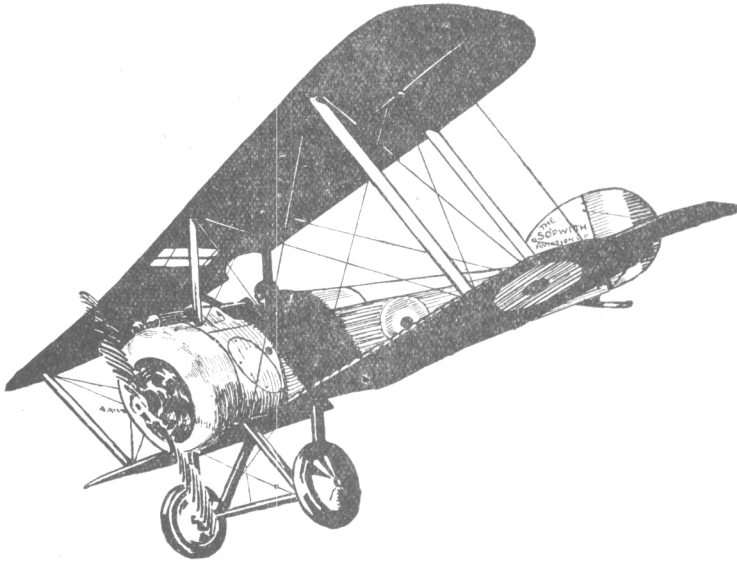
J. H. RICHARDS & CO. LIMITED. J. RICHARDS. P.M. BIRMINGHAM.

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.

THE SOPWITH



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 AËRONAUTICAL SOCIETY OF GREAT BRITAIN.

CONTENTS, JANUARY, 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 Aëronautical Society, unless such is definitely stated to be the case.

	PAGE
I. NOTICES	I
II. THE TECHNICAL HISTORY OF THE AEROPLANE, BY MAJOR F. M. GREEN, A.F.A.E.S., A.M.I.C.E., R.F.C.	3
III. METEOROLOGY IN RELATION TO AERONAUTICS, BY W. H. DINES, F.R.MET.S., F.R.S., FELLOW	17
IV. PROCEEDINGS: FIRST MEETING. 53RD SESSION	30
" THIRD " " 	33
V. RECENT ADDITIONS TO THE LIBRARY	36

All communications respecting Editorial Matters should be addressed to—
THE EDITOR, 7, Albemarle Street, W.1.

Telegrams: "DIDASKALOS, PICCY, LONDON." TELEPHONE: 7373 GERRARD

All communications respecting Advertisement Matters should be addressed to—
The Advertisement Manager, 63, Ludgate Hill, London, E.C. 4.

FOR AEROPLANE AND AIRSHIP

fitments, in Tubular and Presswork Parts go to the Firm with the Widest Aircraft Experience.

OUR WORK

comprises steel tubing in all qualities, sections, gauges; plain and manipulated; welding, tapering, flanging, brazing, necking, cranking, expanding, clipping, slotting, etc.

"APOLLO" TUBULAR BOX SPANNERS,

the tools for every kind of workshop repair, and motor car and motor cycle service.

"APOLLO" MYKARMS

for temporarily turning any micrometer into high and low tension gauge.



**OLDBURY,
BIRMINGHAM.**

Telegrams: "Accles, Oldbury."
Code: A.B.C. 5th Edition.

DURABILITY
FLEXIBILITY
ECONOMY . .

The Original Non-Poisonous
 (Free from Tetrachlorethane and all Spirit derivatives of Chlorine)

TITANINE DOPE



Affords the Greatest Resistance to Flame.

Manufacturers and Sole Proprietors—

THE BRITISH AEROPLANE VARNISH Co., Ltd.,
166, PICCADILLY, LONDON, W.1.

Telegrams: "Tetrafree, Piccy," London.

Telephone: Gerrard 2312.

Works: FELLING-ON-TYNE and HENDON, LONDON, N.W.

CONTRACTORS TO H.M. GOVERNMENT.