

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
T. O'B. Hubbard

Price to Non-Members and Non-Subscribers 1s. 6d. net.

No. 62.

APRIL, 1912.

Vol. XVI.

The British & Colonial Aeroplane Company, Ltd.

Offices and Works : BRISTOL, ENGLAND

BUILDERS OF

The "Bristol" Aeroplanes.

The Celebrated

"BRISTOL" BIPLANES

have been selected by the

British Army and Russian Army

FOR THE USE OF THEIR AIR BATTALION

FLYING SCHOOLS : SALISBURY PLAIN AND BROOKLANDS

TO AVIATORS

LUBRICATION is one of the most important factors in the safety and success of an **Aviator**, and the best obtainable quality should invariably be chosen. During the **Flying Seasons 1909, 1910**, the whole of the **World's Records** made in England, and all of the **British Records** (with two exceptions) were accomplished by users of

WAKEFIELD MOTOR OIL

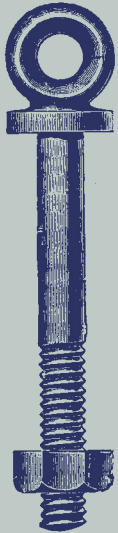
(Castrol Brand)

C. C. WAKEFIELD & CO.,

27, Cannon Street,

-:-

London, E.C.



CHARLES RICHARDS & SONS

**IMPERIAL
WORKS,**



**DARLASTON,
STAFFS.**

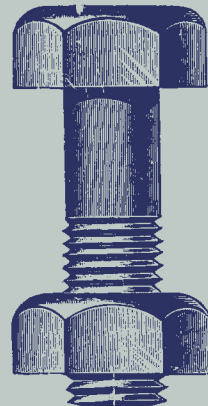
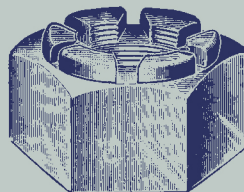
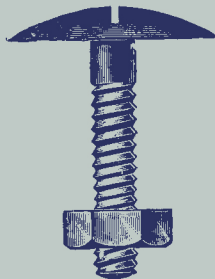
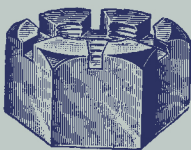
Manufacturers of Bright and Black
BOLTS and NUTS,
EYEBOLTS, and
GENERAL IRONWORK
For Railway Companies,
Engineers & Shipbuilders,

**MOTOR,
AEROPLANE,**
and Coach Builders.

Patentees and Manufacturers of
the **Imperial Lock Nut**
as supplied to the British
Railways.



Contractors to the Ad-
miralty, War Office,
and India Office.
Crown Agents for the
Colonies.
Home and Foreign
Railways.



HYDROGEN

Manufactured in England. Guaranteed Constant Purity, 99%

OBTAINABLE IN CYLINDERS FROM STOCK IN LARGE
:: OR SMALL QUANTITIES FROM THE WORKS OF ::

THE BRITISH OXYGEN Co., Ltd.

LONDON: Elverton Street, Westminster, S.W.

BIRMINGHAM: Saltley Works, Birmingham.

CARDIFF: East Moors.

MANCHESTER: Great Marlborough Street, Manchester.

NEWCASTLE-UPON-TYNE: Boyd St., Newcastle-upon-Tyne.

GLASGOW: Rosehill Works, Polmadie, Glasgow.

AEROPLANE HANGARS

A SPECIALITY

Telegrams
"Ironiarum, London."

PLANS AND ESTIMATES
FREE ON APPLICATION

Telephone:
Stratford 594.

PAVILIONS

SCHOOLS

HOSPITALS

STABLES

OFFICES

GREENHOUSES

SURVEYOR WAITS ON INTENDING PURCHASERS FREE OF CHARGE.

F. SMITH & CO.

Carpenter's Road, Stratford,

London, E.

PETROL ECONOMY with INCREASED POWER

Obtained by using a MILLS PETROL ECONOMISER & FILTER in place of the existing Jet in your Carburettor.

Saves buying a New Carburettor—Prevents Carbonization of Valves and Pistons—Dispenses with Trouble of Choked Jet owing to Filter—Cures Engine Knocking.

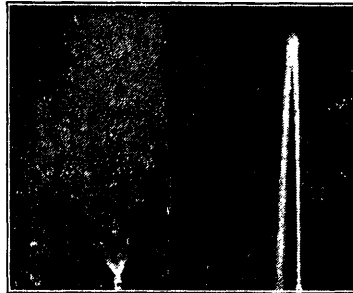
CLAIMS.

50% Increase in Mileage per gallon.

10% Increase in Power.

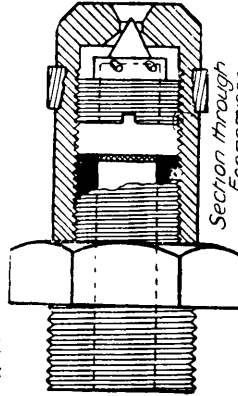
Easier Starting.

Quick Acceleration, &c.



Economiser delivering fine mist spray, being rapid vapourization gives quicker firing mixture.

Ordinary jet delivery of heavy petrol, slow firing and wasteful.



GUARANTEE.

The cost of Economiser will be refunded if the same fails to improve the running of your engine.

ADAPTABLE FOR ALL TYPES OF CARBURETTOR, being made in any length and diameter.

TOOLS FOR FITTING SUPPLIED FREE.

SEE WHAT OTHERS SAY BEFORE YOU ORDER.—A copy of particulars will give you full details and how to fit; also some of the unsolicited testimonials from highly satisfied clients stating the results of using, which more than substantiate the claims made. You will then agree that **PERFECT CARBURATION HAS BEEN SOLVED BY—**

H. E. MILLS (SOLE FACTOR AND PATENTEE),

OFFICE AND WORKS: 441, BRIGHTON ROAD, SOUTH CROYDON, SURREY.

FREDERICK SMITH & CO., WIRE MANUFACTURERS, Ltd.

Tel. Add.: "SMITH HALIFAX."
Tel. No.: 642.

CALEDONIA WORKS, HALIFAX

THISTLE BRAND

PLATED HIGH STRAIN

STEEL TENSION WIRE

FOR AEROPLANE WORK

Tempered Steel Spring Wire



Improved Patent and
PLOUGH STEEL ROPE WIRE

Plated Steel Armature Binding Wire
Cycle and Motor Tyre Wire
Hardened and Tempered Steel Wire

THE ONLY

ALUMINIUM

(MACKENZIE'S) **SOLDER**

Samples, etc., 2d. post free.

WM. MACKENZIE, 17, SHAFTESBURY RD., HORNSEY, N.

The Aëronautical Journal

THE ORGAN OF THE AERONAUTICAL SOCIETY OF GREAT BRITAIN

CONTENTS—APRIL

[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 OF THE AERONAUTICAL SOCIETY OF GREAT BRITAIN	59
II. OBITUARY: DOUGLAS GRAHAM GILMOUR	61
III. ANNUAL GENERAL MEETING, MARCH 27TH, 1912	62
IV. GENERAL MEETING, JANUARY 30TH, 1912. DISCUSSION ON "THE SOARING FLIGHT OF BIRDS"	70
V. GENERAL MEETING, MARCH 4TH, 1912. "MILITARY AIRSHIPS." BY LIEUT. C. M. WATERLOW, R.E. (AIR BATTALION), A.F.A.E.S.	85
VI. GENERAL MEETING, MARCH 26TH, 1912. "EIFFEL'S RECENT RESEARCH WORK." BY F. HANDLEY PAGE, A.F.A.E.S.	93
VII. GENERAL MEETING, APRIL 15TH, 1912. "AUTO-MECHANICAL STABILITY." BY T. W. K. CLARKE, B.A., A.M.I.C.E.	101
VIII. THE AERODYNAMIC RESISTANCE OF BARS, STRUTS AND WIRES.—II. BY A. P. THURSTON, B.Sc.	116
IX. NOTES	131
X. NEW BOOKS AND PUBLICATIONS	133
XI. REVIEWS	133
XII. CORRESPONDENCE	138

All communications respecting Editorial Matters should be addressed to—

THE EDITOR, 11, Adam Street, Adelphi, W.C.

Telegrams: "DIDASKALOS, LONDON"

Telephone: 9761 CITY

All communications respecting Advertisement Matters should be addressed to—

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

Nobles & Hoare's VARNISH

Specially Manufactured for

Aeroplanes

Nobles & Hoare Ltd.

Cornwall Road, Stamford Street, London, S.E.

T. W. K. CLARKE & Co.

Aeronautical Engineers.

CONTRACTORS TO H.M. GOVERNMENT.

Aeroplanes, Gliders, Propellers, Scale Models, All Model Materials,
Experimental Work, Clarke's Flyers.

Send 3d. for FLIGHT FITTINGS LIST; or 1d. for MODEL MATERIALS LIST (fully illustrated).

CROWN WORKS, KINGSTON-ON-THAMES.

PLANT FOR PRODUCING

PURE HYDROGEN

At a cost from 7/6 to 2/6 per 1,000 cubic feet.

500 cubic feet to 50,000 cubic feet per hour.

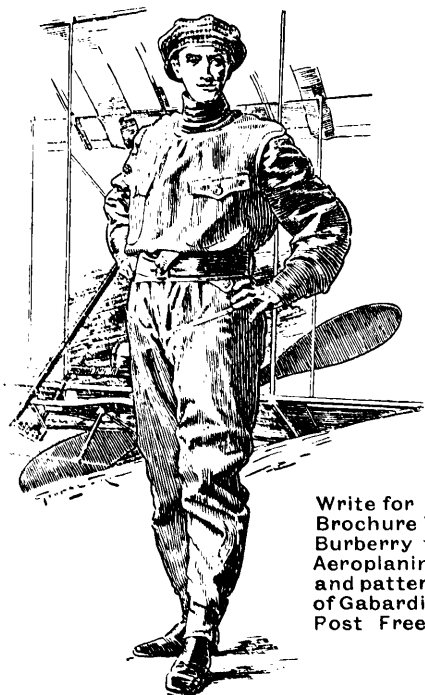
Apply—

THE BRITISH HYDROGEN CO.,

— 49 & 50, Parliament Street, Westminster, LONDON, S.W. —

HOWARD LANE, Managing Engineer.

BURBERRYS AVIATION OUTFIT.



Write for
Brochure V.
Burberry for
Aeroplaning
and patterns
of Gabardine
Post Free.

"GABARDINE" (Regd. Trade Mark) is only obtainable in Burberry Garments, all of which are labelled "BURBERRYS."

DESIGNED under the direction of expert aviators conversant with all requirements and the most practical methods of satisfying them.

WORKMANLIKE, this Burberry outfit combines perfect protection with absolute freedom. It is proof against rain and cold winds; yet maintains, the natural ventilation; remarkably light weight yet owing to closeness of weave so tough and durable that even broken stays cannot penetrate its dense texture.

GABARDINE—the material worn by Sir E. Shackleton during his heroic dash to the South Pole as a protection against wind and cold—is used for the outer fabric with a lining throughout of quilted Eiderdown or Camel Fleece, which maintains phenomenal warmth under the most severe conditions.

"I take this opportunity of thanking you for the suit I wore on my memorable flight, and feel I cannot recommend the material too highly where warmth and comfort are required."

C. GRAHAME-WHITE.

BURBERRYS The Haymarket, S.W. LONDON
10, Boulevard Malesherbes, PARIS

Basingstoke; and Appointed Agents in Provincial Towns.