

# FLIGHT

*The*  
**AIRCRAFT  
ENGINEER  
&  
AIRSHIPS**

**First Aeronautical Weekly in the World. Founded January, 1909**

Founder and Editor : **STANLEY SPOONER**

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport

OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM

No. 1039. (No. 47. Vol. XX.)

NOVEMBER 22, 1928

Weekly, Price 6d.  
Post free, 7d.

## Flight

*The Aircraft Engineer and Airships*

*Editorial Offices:* 36, GREAT QUEEN STREET, KINGSWAY, W.C.2.

Telephone: Holborn 3211. Telegrams: Truditur, Westcent, London.

Annual Subscription Rates, Post Free.

United Kingdom .. 30s. 4d.    Abroad .. .. 33s. 0d.\*

\* Foreign subscriptions must be remitted in British currency.

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## EDITORIAL COMMENT



IN the whole history of British aviation it is doubtful whether a task of such magnitude, and at the same time so exacting in its demands, has ever been successfully accomplished by an aircraft firm as that which is now almost completed at the Norwich works of Boulton and Paul, Limited. This task, the full details of which were revealed for the first time on Tuesday of this week, when representatives of the technical press were permitted to inspect the work, consisted in designing and producing the whole of the structural work for the new 5 million cub. ft. airship R.101, which is being erected at the Royal Airship Works at Cardington.

In order to avoid being misunderstood when we say "designing and producing" the structural framework, the system followed in dividing the design responsibilities should be made quite clear. Single-line diagrams (diagrams in which each girder or member was represented by a line) were stressed by the Royal Airship Works, and the geometry and loads thus available were used by Boulton and Paul to convert this line diagram into an actual structure. In other words, Cardington said, in effect: "Here is a member of such and such a length, having such and such a curvature, and to be capable of sustaining such and such a load," and Boulton and Paul then designed the actual built-up girder structure to fulfil the stipulated conditions. It will be realised that the very closest collaboration between the two design staffs was essential, and Mr. J. D. North, Boulton & Paul's chief engineer, was appointed to act as consultant to the Director of Airship Development.

The airship was so designed, as a compromise between perfect aerodynamic shape and practical manufacturing possibilities, that its main longitudinal girders were arcs of circles, varying between one degree and two degrees of arc, and having radii in the neighbourhood of a quarter of a mile. When these arcs are joined together, they actually form a series of different curves which, although not theoretically perfect, approach so closely to the streamline form

### "FLIGHT" PHOTOGRAPHS

To those desirous of obtaining copies of "Flight" Photographs, these can be supplied, enlarged or otherwise upon application to Photo. Department, 36, Great Queen Street, W.C.2.

### DIARY OF CURRENT AND FORTHCOMING EVENTS

*Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in this list—*

1928

Nov. 22.... Lecture, "Weight of Aircraft," by Maj. T. M. Barlow, before R.Ae.S.

Nov. 29.... Lecture, "Production Problems," by F. Sigrist, before R.Ae.S.

Dec. 3-8.... International Aeronautical Exhibition, Chicago, Ill.

Dec. 6.... Lecture, "Control of Aeroplanes by Alulas," by Capt. A. P. Thurston, before R.Ae.S.

Dec. 12-14 International Conference on Aviation, Washington, U.S.A.

1929

May 21.... Northampton Air Pageant

July 16-27 7th International Aero Exhibition, Olympia

Oct. 31.... Guggenheim Safe-Aircraft Competition Closes