



Installation of the Bristol Hercules in the Northrop monoplane used by the Bristol company for flight-testing. The accessories are driven from a gear box behind the engine bulkhead.

THERE was a record attendance at the lecture given by Mr. A. H. R. Fedden to the Royal Aeronautical Society and the Institution of Automobile Engineers on February 6, and a large portion of the audience had to be accommodated in another room, there to listen to Mr. Fedden via loudspeakers. For their benefit the slides and the slow-motion film were projected at a second "sitting" following the lecture itself and the discussion. Mr. Percy C. Kidner, president of the I.A.E., was in the chair. We give, in the following pages, a précis of Mr. Fedden's paper and the discussion which followed it.

SLEEVE-VALVE DEVELOPMENT

*The Story of the Successful Work of the Bristol Company :
Mr. A. H. R. Fedden's R.Ae.S. and I.A.E. Paper*

MR. FEDDEN began his paper by outlining under five heads the main drawbacks of poppet valves, and said that conservatism and lack of initiative and financial backing had delayed the introduction of the sleeve valve, which had the obvious advantage of positive control and regular motion.

In his historical review, Mr. Fedden recalled that to Mr. Charles Y. Knight, of Chicago, must be given the honour of developing the first sleeve-valve engine—in 1905. He recalled that the Knight engine, with two sleeves, used reciprocating motion only. The discovery of the single sleeve which is given a combined translatory and rotary motion was discovered simultaneously and independently by two inventors in 1909: the Scottish engineer, Peter Burt, and the Canadian engineer, Charles McCallom. The first sleeve-valve aero engine of the Burt-McCallom type was produced in 1913-14 by the Argyll Co. for the Aero Engine Competition organised by the British

Mr. A. H. R. Fedden, chief engineer (engine dept.) of the Bristol Aeroplane Co., and author of the paper.



Government in 1914. It was an in-line water-cooled six-cylinder engine of 785 cu. in. and produced a maximum of about 130 b.h.p. The war caused the development work to be shelved and the only research work on sleeve valves during the war was an experimental adaptation of a twelve-cylinder vee engine of 140 b.h.p. produced by the Royal Aircraft Factory.

Interest in the single-sleeve engine did not revive until 1925, when the Continental Motors Corporation, of Detroit, acquired the Burt-McCallom patents. The firm exhibited a single-sleeve-valve engine in 1927. It was of the nine-cylinder type, of 787 cu. in. capacity and developed 220 b.h.p.

(Below) Two views of the Bristol Taurus engine, of 1,065 max. b.h.p.

