

The Ground Testing of Helicopters

(with special reference to Fatigue and Wear)

Two Lectures presented to the Helicopter Association of Great Britain at the Royal Aeronautical Society, 4 Hamilton Place, London, W 1, on Friday, 5th December, 1952

In the Chair DR G S HISLOP, PH D, B SC, A R T C,
M I MECH E, A F R A E S

Introduction by the Chairman

Ladies and gentlemen we have tonight a double lecture, in a way, upon one of the most important problems facing the aeronautical engineer today and especially the helicopter engineer. I say "aeronautical" in the widest sense advisedly because the problem of fatigue is foremost in the minds of all people engaged in aeronautical design and maintenance, especially in the civil field. One need only think of recent experience on Viking and Dove aircraft to appreciate that this is no academic question. By virtue of its rotating lifting and control surfaces and their fluctuating loads, the helicopter is feared to be even more vulnerable to fatigue failure than fixed wing aircraft.

On this topic we have two speakers and I have asked Mr BRENNAN to open up with his talk, then Mr HAFNER will follow. Discussions and replies will come at the end.

In view of the inclement and foggy weather tonight I am afraid we shall have to copy one of the more dubious Parliamentary procedures, and have a five-minutes "guillotine" on speakers in the discussion. There are quite a number wanting to talk and this seems the fairest way of allowing them their say and yet not having the proceedings lasting too long.

The first of tonight's speakers, Mr BRENNAN, graduated from Glasgow University in 1934 and thereafter joined the Technical Office of Hawkers. In 1936 he joined Saunders-Roe, Ltd, serving in most of the technical offices of that firm, in 1948 becoming Technical Assistant to Sir Arthur Gouge. In 1951 he was appointed Deputy Chief Designer and appointed in charge of the then newly formed Helicopter Division of the firm. Very recently (and I am sure all members here will join with me in congratulating him) he became Chief Designer of Saunders-Roe, Ltd. I shall now ask Mr BRENNAN to open the evening's proceedings.