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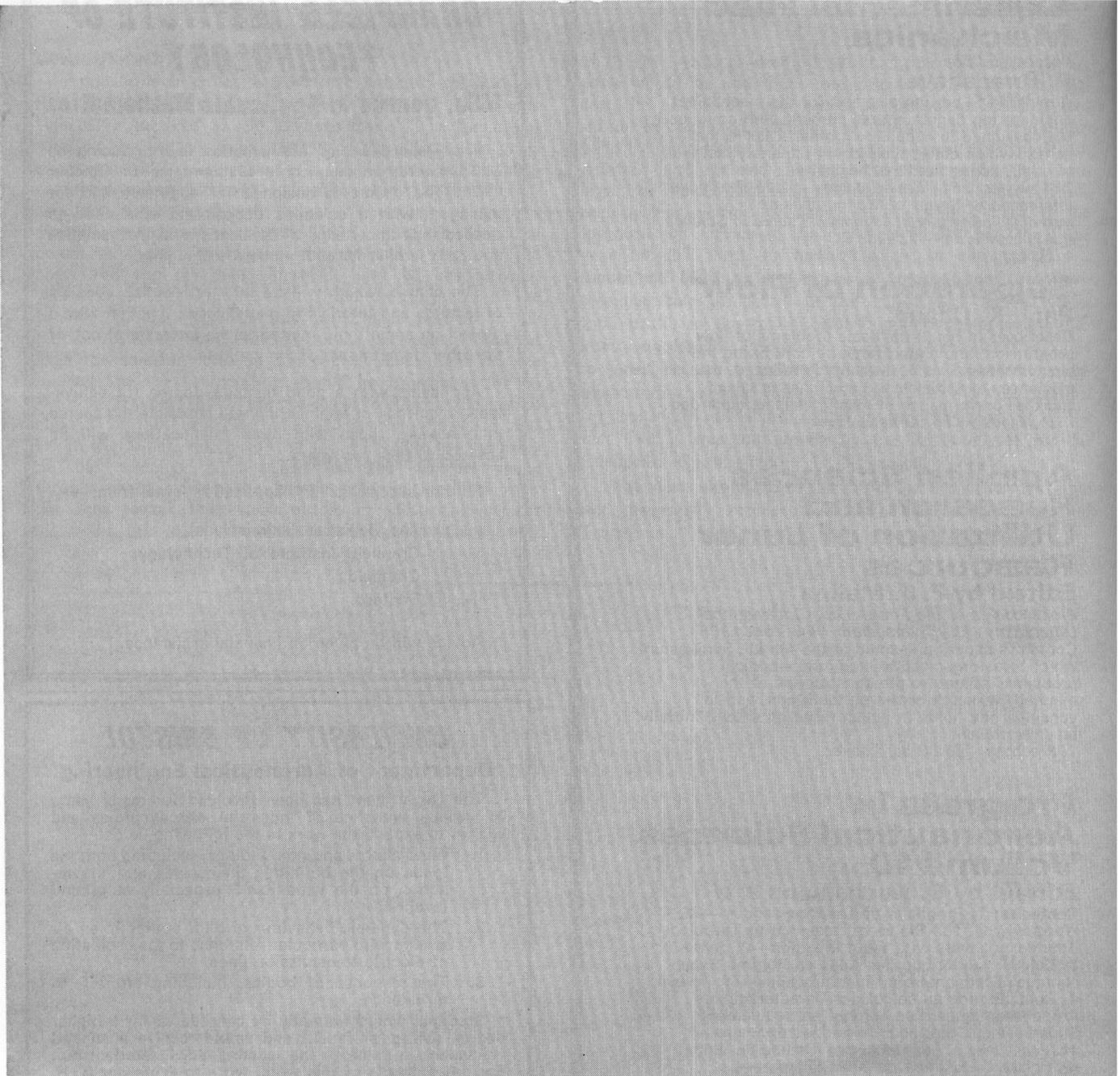
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Applications, giving details of experience and qualifications, should be sent to **Professor T. R. F. Nonweiler, Department of Aeronautics and Fluid Mechanics, James Watt Engineering Laboratories, The University of Glasgow, Glasgow, W.2.,** not later than 14th July 1971, and in reply please quote Ref. No. 5038 CX.



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JONES, DR. S.

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A description of Seaspeed's experiences with the SRN4 hovercraft from the time it entered service in 1968 on the Dover-Boulogne route, the difficulties experienced with skirt maintenance, engines and propellers, jacks, noise and vibration levels. A brief résumé of the formation of Seaspeed, a wholly owned subsidiary of British Rail, the selection of crews and the work on the Dover Hoverport.

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DABBADIE, H. C.

The Design of Helicopter Powerplants

A brief account of the progress Turbomeca have made in the development of propulsion units for helicopters over the past twenty years, from the first 140 hp Oredon to the latest 2000 hp turbines.

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LEVERTON, JOHN W.

The Sound of Rotorcraft

The general characteristics of the sound produced by rotorcraft are reviewed, with particular reference to rotor noise. The relative importance of rotational (discrete frequency) noise and broadband noise is discussed and narrow-band analysis results are presented which show the changes in spectral content that occur with variations in lift and tip speed. Measurements are also included to demonstrate the impulsive nature of rotor noise.

The directivity associated with rotor noise is of major interest and the results of a recent full-scale test, in which a rotor was run "up-side-down" and the noise measured "under" the rotor, are given. These measurements are compared with those of a model rotor and the directivity derived from theory.

Current prediction methods are summarised and their limitations highlighted. The general approach used in noise prediction is illustrated with reference to a specific rotorcraft design. Some problems of measuring rotor noise are examined, and the design of a special set of instrumentation to overcome these difficulties briefly mentioned. Results from a study into the effect of "tip-shape" on rotor noise, using a model rotor, are also included.

The Aeronautical Journal RAeS June 1971

CHEESEMAN, PROFESSOR I. C.

The Noise of Rotorcraft and Other VTOL Aircraft—A Review

The noise made by an aircraft is increasing in importance as a design criterion. Although noise certification legislation has not been promulgated, for V/STOL aircraft target levels which are widely quoted in the literature suggest that V/STOL aircraft will have to be considerably quieter than the equivalent conventional aircraft. To design to these targets it is necessary to understand the noise sources, to have prediction methods for the various classes of aircraft and to suggest the noise reduction which might be possible in the near future. This paper attempts to cover all of these points, but due to time limitations it is only possible to refer briefly to fan and jet lift aircraft and to the noise contribution from the shaft drive engines in rotor/propeller schemes.

The paper concludes by attempting to illustrate the design penalties which could be incurred in designing to a fixed noise level.

The Aeronautical Journal RAeS June 1971

FLINTOFF, J. L.

The Ansty Noise Facility—Its Design, Instrumentation and Future Commitments

This paper is a presentation of the Noise Research Facility in use at Rolls-Royce Ltd, Ansty, for the purpose of investigating the problems associated with fan and multi-stage compressor sound radiation.

A description of the anechoic chamber and its absorptive characteristics is presented together with a discourse on the power drive and test control system. Also a description of the noise recording technique as well as the "real time" narrow band noise analysis system.

The trend towards on line noise and aerodynamic data acquisition in the light of recent extensions of the instrumentation equipment is presented.

Illustrations are made of subsonic and supersonic fan noise together with an interpretation of the buzz saw phenomenon.

A brief review of the major research projects is made with especial reference to the flexibility of the power/speed envelope of the test facility

The possible use of new plant to investigate boundary-layer control and the employment of passive and reactive acoustic absorbers in the duct walls is considered.

The Aeronautical Journal RAeS June 1971

JAWORSKI, DR. A.

International Airports Allocation of Operating Revenues and Costs

A report based on the studies of an ICAO panel on the economics of route facilities, covering costs allocation of thirteen international Canadian airports including six alternates to the North Atlantic service.

The Aeronautical Journal RAeS May 1971

FURLONG, O. D.

Fluidic Cabin Pressure Control Systems for Military and Civil Aircraft

Low cost and robust fluidic circuits have for the first time been employed extensively in the design of cabin pressure controllers for both military and civil aircraft, and two such systems are described. Tests have shown that the standards of performance and the dynamic response achieved with this equipment are higher than with conventional pneumatic installations and that they are generally equal to those obtained with electronic cabin pressure control systems.

The military equipment described was developed without government backing but has since been flown in an RAE based Canberra aircraft. The civil system is also undergoing extensive testing on a private venture basis.

Although in concept they have much in common with electronic controllers and are somewhat more sophisticated than previous conventional pneumatic cabin pressure control systems, manufacture has been very greatly simplified by developing integrated fluidic circuits cast in filled hot setting epoxy material.

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