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DAVIES, S. D.

The Aeronautical Journal RAeS May 1970

### The History of the Avro Vulcan

*The basic Air Staff requirement was issued early in 1947 and the limiting conditions of high Mach number and load coupled with limited gross weight made for a difficult design problem. Contemporary German thinking and discovery concerning the effect of sweepback on critical Mach number influenced the derivation of design from a conventional layout through high aspect ratio tailless schemes to the tailless Delta layout.*

*Various considerations led to the policy of building the 707 series of flying models. Major decisions on the first prototype are discussed; in particular the decision to accelerate aerodynamic development by using the Avon engine for the first flight trials, instead of waiting for the Olympus engine, for which the type was designed. This section ends with the completion and first few flights of the first prototype.*

*The history of the development of the aircraft into RAF service is covered.*

*The paper concludes with some reflections on the lessons learned during the history of this project with their possible application to the future.*

HARVEY, R. A.

The Aeronautical Journal RAeS May 1970

### A Probabilistic Approach to Aeronautical Research and Development

*This paper was written for the Working Party on Effectiveness in R & D and used as an Appendix to their Report. An abbreviated version of the Report was published in the September 1969 Aeronautical Journal.*

McMANUS, R. and CRAIG, D. K.

The Aeronautical Journal RAeS May 1970

### Recent Progress in All-Weather Landing Techniques

*The paper is divided into two main parts, the first concentrating upon the work of the aircraft designer developing an automatic landing system, the second considering the problems associated with an airline using such a system.*

*The designer traces the development of the automatic landing system for the Trident, starting with the system developed by BLEU and showing the improvement in performance achieved within the original concept of the design. Having developed a system which will successfully land the aircraft the designer then shows how it is ensured that the system will always be operational when required.*

*The airline user describes his experience under a number of headings. It is shown that maintenance has had to be mainly restricted to safety checks. Reliability is shown to have improved by a factor of three in five years, but it is still troublesome. The in service development programme up to Category 3 is described and the in service experience to date is analysed. Some of the principal costs such as capital and maintenance are noted. In conclusion it is shown there are three main remaining problems, namely, pilot acceptance, ground installations such as ILS, and reliability.*

STINTON, D. L.

The Aeronautical Journal RAeS May 1970

### The Developing Scene in British Light Aviation

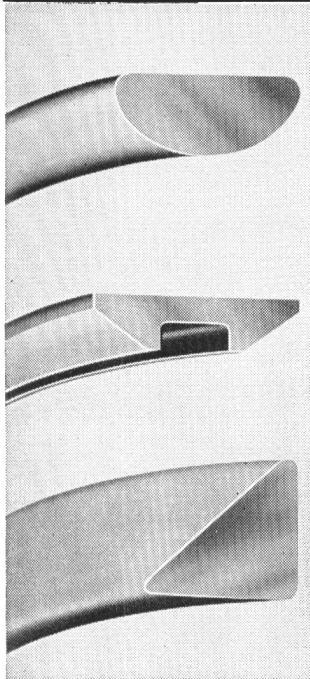
*In many ways light aviation in Britain stands at a crossroads. The islands are too small for light aircraft to be used with the measure of economy one finds overseas, where such aeroplanes may be vital for living. Yet the British Isles are the geographical focus of Europe and a natural Capham Junction of many air routes. One finds, therefore, light aviation thriving in certain respects, and apparently dying on its feet in others.*

*The aim of the lecture is to take a broad look at some of the most interesting and possibly important areas in the field of light aviation in the UK.*

*The appearance of, for example, the motor glider as a flying machine in its own right. The need for new forms of competitions to bring out more fruitful flying machines. And the need for a broader view of flying in these islands, as related to Europe, and the developing world, are all seen as possible pointers to a renaissance in British light aviation.*



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