

OPENING OF NEW TRANSONIC TESTING INSTALLATION

The Minister of Supply, Mr. R. Maudling, opened today at the Royal Aircraft Establishment, Farnborough, a new large transonic testing installation; the 8 ft. x 6 ft. transonic wind tunnel. Preliminary running of this installation has shown that a Mach number of over 1.2 is reached in the air-stream. After a further period of commissioning work and detailed flow calibration, air speeds approaching this should be available for testing aircraft models.

The installation is a modified and improved form of the R.A.E.'s well-known 10 ft. x 7 ft. 'High Speed Wind Tunnel' which began work during the war. Until the autumn of 1954, most of the test work in this country on models of high-speed aircraft at high subsonic speeds was done in it. The total power of the installed machinery has now been increased fivefold.

The scope of model-testing in the tunnel has been extended in two main respects. 'Choking', which limited the ordinary kind of high-speed wind tunnel to about Mach 0.95, has been overcome by use of a transonic working-section, allowing test-work through the speed of sound and beyond. It has 'ventilated' walls, extraction of air through them being effected by a new axial blower of 8,000 h.p. After being suitably compressed, the extracted air is put back into the airstream. Transonic testing by a somewhat similar process has been possible for some time past in the 3 ft. x 3 ft. tunnel at the R.A.E., Bedford.

The second big improvement is the addition of a new motor to the main fan drive, increasing the power put into it from 4,000 h.p. to 12,000 h.p. This is to allow testing to be done at higher air pressure, giving a larger 'Reynolds number' and a closer approach to the aerodynamic conditions of flight. As in its previous form, the tunnel is capable of being pressurised or evacuated and can be used over a range of pressures from about  $3\frac{1}{2}$  atmospheres to  $1/10$  atmosphere absolute. In normal operation the tunnel will be used pressurised for subsonic testing and will be evacuated to about  $\frac{3}{4}$  atmospheres for transonic work.

In most wind tunnels the model should be observable, both as a safety measure and for experiments in which the air flow is rendered visible. In this tunnel the main structure and new working area are such that direct viewing is difficult, and so special closed-circuit television equipment is being installed. The cameras will be inside, looking at the model under test through the working section walls, while the T.V. screens will be on the operating desk in the control room. (T.V. is being increasingly used in this way for viewing industrial processes to which access is difficult or hazardous).

The design and construction of models for test in both these wind tunnels has already begun. The models will be mainly of solid high-tensile steel. The work planned includes both general research on problems of aerodynamic design and tests of specific aircraft projects for the industry.

INFORMATION BRANCH

MINISTRY OF SUPPLY

17th April, 1956

*Mr. Trayg*

Evening News

14-4-56

# THE DUKE STARTS SOMETHING IN THE AIR

## New Wind Tunnel Will Speed Planes

By CYRIL BIRKS

"Evening News" Air Reporter

**T**HE DUKE OF EDINBURGH will press a button on May 4 to start a new £1,250,000 wind tunnel at Bedford—and so will begin a fresh phase in the development of

airliners, as well as fighters and bombers, capable of flying faster than sound.

The tunnel, built on the outskirts of Bedford, is a co-operative project sponsored and financed by 14 companies in the British aircraft industry.

In it will be tested models of aircraft designed to fly within the 1,000 m.p.h. range.

A smaller tunnel for testing models up to three times the speed of sound will be added later.

### MORE TIME For Research

The object of this co-operative enterprise is to enable the firms to carry out development work on new designs, relieving pressure on Government research establishments which would be able to devote more time to fundamental research.

This in turn will speed up the introduction of proved designs into service.

A staff of about 90 will be employed ultimately. They will include aerodynamicists, draughtsmen, craftsmen and women computers to work out results of tests.

Directing as chief executive is Mr. Ronald Hills, a 39-year-old Cambridge graduate, who was a "boffin" in charge of wind tunnel work at the Royal Aircraft Establishment for 14 years.

The tunnel to be started up by the Duke has taken two years to build.

*Mr. Stagg*