New York Airways Collection - Conference on Airports for the Future, Institution of Civil Engineers [UK], 1967

SESSION I
the supersonic jet

1 The Concord

E. H. BURGESS
Divisional Sales Manager
British Aircraft Corporation

A major advance in high speed transportation systems, the Concord supersonic airliner will offer large reductions in journey time and further stimulate the ever-increasing growth in world travel. Cruising at Mach 2.2 in a temperature and altitude environment unknown to subsonic jets, the Concord must be equally 'at home' in the well-known environment of today's airports. Compatibility with present day airport runways and facilities, with systems of parking, passenger handling and ground servicing installations is thus an important consideration in design.

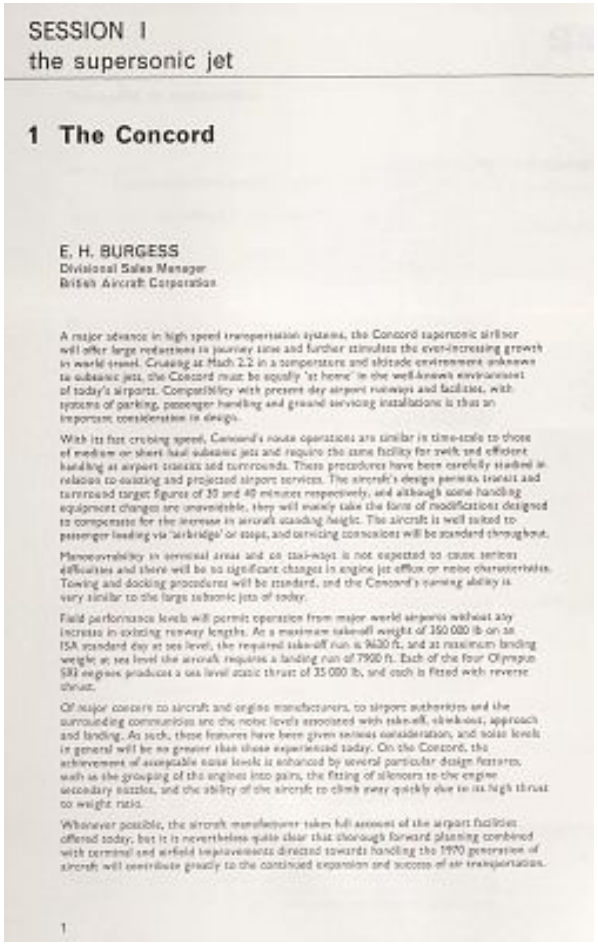
With its fast cruising speed, Concord's route operations are similar in time-scale to those of medium or short haul subsonic jets and require the same facility for swift and efficient handling at airport transits and turnrounds. These procedures have been carefully studied in relation to existing and projected airport services. The aircraft's design permits transit and turnround target figures of 30 and 40 minutes respectively, and although some handling equipment changes are unavoidable, they will mainly take the form of modifications designed to compensate for the increase in aircraft standing height. The aircraft is well suited to passenger loading via 'airbridge' or steps, and servicing connexions will be standard throughout.

Manoeuvrability in terminal areas and on taxi-ways is not expected to cause serious difficulties and there will be no significant changes in engine jet efflux or noise characteristics. Towing and docking procedures will be standard, and the Concord's turning ability is vert similar to the parge subsonic jets of today.

Field performance levels will permit operation from major world airports without any increase in existing runway lengths. At a maximum take-off weight of 350 000 lb on an ISA standard day at sea level, the required take-off run is 9630 ft, and at maximum landing weight at sea level the aircraft requires a landing run of 7900 ft. Each of the four Olympus 593 engines produces a sea level static thrust of 35 000 lb, and each is fitted with reverse thrust.

Of major concern to aircraft and engine manufacturers, to airport authorities and the surrounding communities are the noise levels associated with take-off, climb-out, and approach and landing. As such, these features have been given serious consideration, and noise levels in general will be no greater than those experienced today. On the Concord, the achievement of acceptable noise levels is enhanced by several particular design features, such as the grouping of the engines into pairs, the fitting of silencers to the engine secondary nozzles, and the ability of the aircraft to climb away quickly due to its high thrust to weight ratio.

Whenever possible, the aircraft manufacturer takes full account of the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Manoeuvrability in terminal areas and on taxi-ways is not expected to cause serious difficulties and there will be no significant changes in engine jet efflux or noise characteristics. Towing and docking procedures will be standard, and the Concord's turning ability is very similar to the large subsonic jets of today.

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Whenever possible, the aircraft manufacturer takes full account of the airport facilities offered today, but it is nevertheless quite clear that thorough forward planning combined with terminal and airfield improvements directed towards handling the 1970 generation of aircraft will contribute greatly to the continued expansion and success of air transportation.

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