

## DC-10B PROPOSALS

DETAILS of the McDonnell-Douglas DC-10B being offered to European airlines were given in a recent issue of *Interavia Newsletter*. Three optional interior arrangements for this 383,000lb gross weight, medium-range, big-capacity trijet are offered. These are: All-economy 345 seats, 34in pitch, nine-abreast; all-coach, 309-seat, 34in pitch, eight-abreast; and basic mixed-class with 50 first-class at 38in pitch and 237 coach seats at 34in pitch, eight-abreast. The emergency evacuation arrangements are designed to meet the present FAA requirements for 390 passengers with ten doors used as exits, five on each side, with slide stowage below each exit except for the doors over the wing. The two large aft exits are to be equipped with double-track slides.

Three cargo compartments are located beneath the passenger floor. Two are to be equipped with mechanised handling systems to accommodate preloaded containers. Access to these compartments is through 70in-wide by 66in-high doors which provide adequate clearance to move pre-loaded containers from ground-loading equipment into the compartment. The aft compartment is equipped for the transport of bulk cargo and animals. Access to this compartment is through a 36in by 48in door. Volume of the aft bulk compartment is 700 cu ft and the aft container compartment will hold 12 half-width (1,788 cu ft), or six full-width (1,812 cu ft) containers. The forward compartment holds eight half-width (1,192 cu ft), or four full-width (1,208 cu ft) containers.

The DC-10B is designed for ranges of up to 2,000 n.m. and would have a significantly better airfield performance than, for instance, the DC-8-55. The company's automatic flight system would be part of the basic equipment and the aircraft would probably enter service cleared for operation in Cat 2 landing conditions. On a 3° glideslope at an altitude of 100ft in these conditions (1,200ft) the pilot would have a 733ft visual ground segment. Forward vision is 18° below the fuselage reference plane and 8° on either side of centreline. For taxiing, the downward view angle enables the pilot to see a point as close as 60ft to the eye-reference point.

### DC-10B DATA

Weights: Max ramp, 386,000lb; max take-off, 383,000lb; max landing, 344,700lb; operating empty, 213,420lb; zero fuel, 289,000lb.  
 Usable fuel: 22,000 US gal.  
 Passengers: mixed class, 287; all-coach, 309; economy, 345.  
 Cargo volume: 3,680 cu ft.  
 Powerplants: 3 x 35,000lb thrust.  
 Cruise speed: Mach 0.85 at 35,000ft.

## SONIC BOOM RESEARCH

FORWARD expulsion of electricity by supersonic aircraft could possibly decrease its sonic boom, two engineers have told the Sixth Aerospace Sciences Meeting of the American Institute of Aeronautics and Astronautics in New York. In an address at the AIAA's Atmospheric Flight Mechanics Conference, Mr M. S. Cahn and Mr G. M. Andrew of the Northrop Corporation's Norair Division in Los Angeles, described experiments which indicate that it may be possible to alter

the flow of air around an aircraft with electrostatic forces.

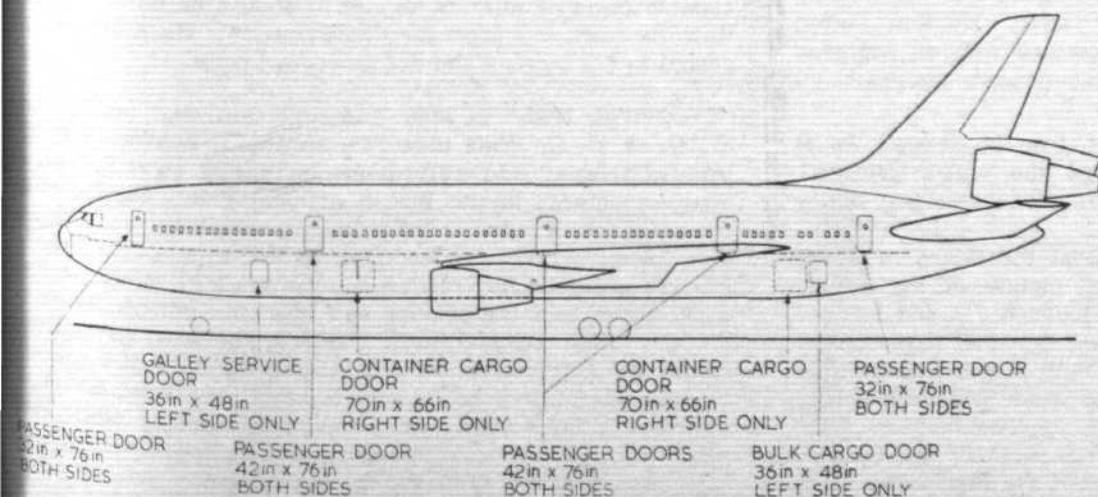
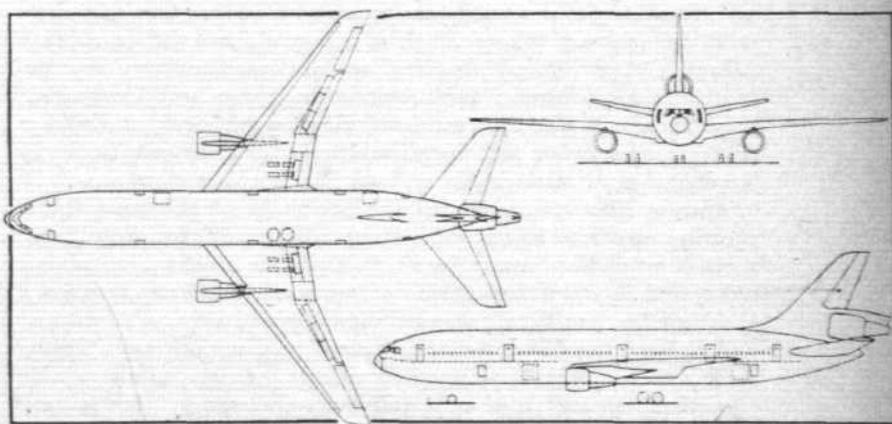
If an electrical voltage could be applied to an SST, or at least to its forward part, the oncoming air particles which are likewise charged would anticipate the presence of the aircraft because of the well-known electrostatic repulsion between ions of a like charge, the engineers postulated. As a result of this repulsion, particles of air would change their path and flow smoothly around the aircraft as in subsonic flight or at least make the sudden piling up of air against the aircraft less abrupt. Consequently, the shock wave could possibly be eliminated or greatly reduced.

They describe their work to date as fundamental aerodynamic research. They have given the name "electroaerodynamics" to their present research. Although small-scale wind-tunnel and liquid-surface tests substantiated certain basic assumptions of the theory, the engineers emphasized that further research, including tests in a wind tunnel, would be required before any conclusive data could be obtained. "The study of phenomena like electrostatic fields may eventually give aircraft designers the opportunity of actively affecting the flow of air instead of passively accepting its consequences," they added.

**Marconi for Kuwait** An order has been placed by Kuwait Airways with the Marconi Company for AD370 automatic direction finders and AD560 Doppler navigation systems for the three Boeing 707s which the airline has on order.

**BOAC Belfast-New York** Subject to ATLB approval, BOAC are to introduce a twice-weekly transatlantic VC10 service from London through Belfast and Prestwick to New York from May 27. Stop-over rights at Belfast and full traffic rights on the Belfast-Prestwick sector are being requested.

**747 Radar Contract** Pan American have awarded a \$1 million (£420,000) contract to the Radio Corporation of America for advanced 300-mile range weather radar systems for the airline's Boeing 747 fleet. Delivery of the equipment is due to start in August.



Changes in relation to previously published general arrangement drawings (see "Flight" for July 13, 1967, page 43) are to be seen in the "B" variant of the DC-10 now being offered to European airlines. The humped flightdeck has, for instance, disappeared. The drawing on the left shows the sizes and positions of the passenger, cargo and emergency doors which are planned. See story on this page