



Viscount 810...

Hunting Clan, 3 (833s) in May 1958. Two Greek shipowners also arranged to buy a Viscount 810 each in late 1956. Mr. Basil Mavroleon's order ("Black Lion") has since been cancelled but that for Mr. Niarchos still stands. Deliveries of the 810 have so far been made to Continental, who inaugurated scheduled services on May 28.

STRUCTURE The dimensional envelope of the Viscount 810 is almost identical to that of the 800 but the structure has been stiffened to cater for the higher loads imposed by 400 m.p.h. cruising speeds, and for a higher landing weight of 62,000 lb.

Fuselage The back-to-back channel frames which carry the spar loads have been opened slightly to accommodate wider spar booms. The parallel-motion 64in x 36in forward entrance door, incorporating a built-in Airstep, is slightly smaller than the special-purpose 800 series door and there are now two 64in x 27in rear doors aft, disposed port and starboard to meet C.A.A. evacuation requirements.

Wing An all-round dimensional increase has been made to the T-section booms which form the compression and tension members of the wing main spar. The wing is built in three sections; an inner and outer wing and a detachable tip. The inner wing is bolted to the fuselage at the main spar by taper bolts, and four additional bolts are used for attachment of the subsidiary spars, the webs of which are attached by shear cleats. Flaps are of the double slotted type and are built in three sections.

Tail Unit The tailplane is set at 15 deg dihedral and comprises a single spar with stiffer webs and slightly thicker skinning than previously used.

Undercarriage Each undercarriage unit, both main and nose, incorporates a single Vickers oleo pneumatic shock absorber on which twin wheels are mounted. The main undercarriage has been stiffened for the 810 and the geometry slightly revised and both main and nose wheels have a slightly longer stroke. Dunlop or Goodyear wheels and anti-skid wheel-brakes are fitted; the 10.75-16.5in mainwheel tyre pressure is 120 lb/sq in and the 7.25-12in nosewheel, 90 lb/sq in. The nosewheel can be steered through 50 deg either way.

POWERPLANT The engines of the Viscount 810 are Rolls-Royce Dart RDa.7/1 (Mk 525) driving four-bladed Rotol constant speed propellers of trapezoidal planform. The Dart 525 develops 1,910 shaft horsepower and is derated for take-off to 1,800 s.h.p. by restriction of the fuel control unit, since the additional power is not required at sea level in I.S.A. conditions. Available in 1960 will be the Dart RDa.11 (Mk 541) of 2,100 s.h.p., which, with detailed changes within the nacelles, will fit into a Viscount 810 to bring it to 840 standard. Both Dart 525 and 541 have a two-stage compressor, seven interconnected straight-flow combustion chambers and a three stage axial-flow turbine.

SYSTEMS **Fuel Systems** The four-tank system comprises 20 Marlite nylon fuel cells with a total capacity of 1,900 Imp. gal—a few gallons less than the 800 series aircraft because of the addition of 55 Imp. gal water methanol tanks in each wing.

Flying Controls These are operated through push/pull rods and levers and—apart from a revised elevator tab—are identical with earlier Viscounts. The Bendix PB 10 autopilot fitted to Continental's V.812s has the servo motors situated directly under the tail surface torque tubes. Viscount 810s are otherwise equipped with a Smith's flight system and an S.E.P.2 autopilot.

Cabin Air Differential pressure is 6.5 lb/sq in, pressure being maintained by three Godfrey cabin blowers supplying air at 75 lb/min at 25,000ft. Provision is made for water separation, Freon refrigeration and Janitrol heating, and Continental's aircraft have an emergency oxygen supply.

De-icing Thermal de-icing utilizing exhaust-heated ram air is directed to the leading edges of mainplanes, tailplane and fin. Propeller blades, spinners and engine air intakes are protected electrically.

Hydraulics The 2,000-2,500 lb/sq in system provides power for the undercarriage, wheel brakes and nosewheel steering. Either Lockheed Mk 9 pump of the pair driven by the inboard engines will pressurize the system.

Radio and Radar Standard equipment includes H.F., V.H.F., glide slope, marker receiver, A.D.F., audio and public address system. AVQ-10 weather radar is fitted to Viscount 812s with the scope in the centre of the engine instrument panel.

Electrics Four 9kW DC generators, one driven by each engine, charge three 24-volt batteries and provide power for the electrical services, which include the flaps, engine starting, feathering and radio and radar supplies.

PAYLOAD ACCOMMODATION Continental's Viscount 812s are arranged as 56-seaters with eight in the forward cabin (four abreast with a central aisle), 44 in 11 rows in the main cabin and four in the rear lounge. The standard version is arranged to carry 52 passengers, with a flight crew of two and a freight hold replacing the rear lounge. Under the cabin floor and forward of the wing is a 250 cu ft freight hold, access being through two 30 x 42in doors on the starboard side of the aircraft. A further 25 cu ft of storage is available opposite the passengers' door and the upper rear (lounge) hold provides 120 cu ft.

Viscount 790 Earlier this year Vickers announced a version of the Viscount specially adapted to the needs of local service operators. It had a strengthened wing to cater for high speeds at low altitudes, more frequent landings and higher landing weights, a 700-series fuselage with increased passenger accommodation, and a number of features (such as airsteps, propeller brakes and increased battery capacity) to permit the most rapid possible turn-round time on the ground. Built almost entirely from proven Viscount components and systems, the 790 has been described as a "stretched-down" Viscount. Rolls-Royce Dart 506 engines have been adopted for reasons of lower cost, slightly lighter weight and the wealth of background experience that exists with this type.

The aircraft described above, the Viscount 810, is the latest and fastest development of the line, with a strengthened structure to take advantage of higher power from its Rolls-Royce Darts, RDa.7s and later RDa.11s and an all-up weight of 69,000 lb.

VISCOUNT 800

Four Rolls-Royce Dart 510 of 1,600 s.h.p., s.l., I.S.A. each driving four-bladed 10ft diameter Rotol propellers of parallel planform

Dimensions: Span, 93ft 8½in; length, 85ft 8in; height 26ft 9in.
Weights: Maximum take-off, 64,500 lb; max. landing, 58,500 lb; zero fuel, 54,000 lb; max. payload, 13,020 lb.

Performance: Typical cruising speed at 20,000ft, I.S.A., and 56,000 lb weight, 317 m.p.h.; total fuel, 1,910 Imp. gal; max. payload range, 790 st.m.*; take-off field length, max. T.O. weight, sea level, I.S.A., 5,310ft.

VISCOUNT 810

Four Rolls-Royce Dart 525 of 1,800 s.h.p., s.l., I.S.A. for take-off each driving four-bladed, 10ft diameter Rotol propellers of trapezoidal planform

Dimensions: As above.
Weights: Maximum take-off, 69,000 lb; max. landing, 62,000 lb; zero fuel weight, 57,500 lb; max. payload, 15,054 lb.

Performance: Cruising speed at 20,000ft, I.S.A. and 60,000 lb weight, 365 m.p.h.; max. payload range, 985 st.m.*; take-off field length, max. take-off weight, sea level, I.S.A., 5,550ft.

VISCOUNT 840

Four Rolls-Royce Dart 541 of 2,100 s.h.p., s.l., I.S.A. for take-off each driving four-bladed Rotol propellers

Dimensions: As above.
Weights: Maximum take-off, 69,000 lb; max. landing, 62,000 lb; zero fuel weight, 57,500 lb; maximum payload, 14,079 lb.

Performance: Cruising speed at 20,000ft, I.S.A. and 60,000 lb weight, 400 m.p.h.; max. payload range 1,070 st.m.*; take-off field length, max. take-off weight, sea level, I.S.A., 5,000ft.

VISCOUNT 700D

Four Rolls-Royce Dart 510 of 1,600 s.h.p., s.l., I.S.A. each driving four-bladed 10ft diameter Rotol propellers

Dimensions: Span, 93ft 8½in; length, 81ft 10in; height 26ft 9in; wing area, 963 sq ft.
Weights: Maximum take-off, 64,500 lb; max. landing, 57,500 lb; zero fuel, 50,168 lb; max. payload, 11,840 lb.

Performance: Typical cruising speed at 20,000ft, I.S.A. and 53,500 lb weight, 325 m.p.h.; total fuel, Imp. gal., 1,967; max. payload range, 1,340 st.m.*; take-off field length, max. take-off weight, sea level and I.S.A., 5,310ft.

VISCOUNT 790

Four Rolls-Royce Dart Mk 506 of 1,400 s.h.p., s.l., I.S.A. for take-off each driving four-bladed 10ft diameter Rotol 140 activity factor propellers

Dimensions: Span, 93ft 8.5in; length, 81ft 10in; height, 26ft 9in; wing area, 963 sq ft. Freight hold capacity (standard), 299 cu ft; freight hold capacity (60-65 seats), 174 cu ft.

Weights: Maximum take-off, 61,500 lb; maximum landing, 58,500 lb; zero fuel, 50,000 lb; empty, 37,240 lb; maximum payload (54-59 seats) 11,900 lb; max. payload (60-65 seats), 12,500 lb.

Performance: Max. cruising speed 320 m.p.h. Typical cruise speed at 20,000ft, I.S.A. and 53,000 lb weight, 312 m.p.h.; range (full payload, reserves for 115 mile diversion and 45 min. hold. at 5,000ft), 1,000 miles; take-off field length (I.S.A. 61,500 lb) 4,850ft.

* For V700D, V800, V810 and V840, max. payload range allows for 230 st.m. diversion + 45 mins holding.

