

Runway Length Justification Report
Private and Confidential
 March 6, 2002

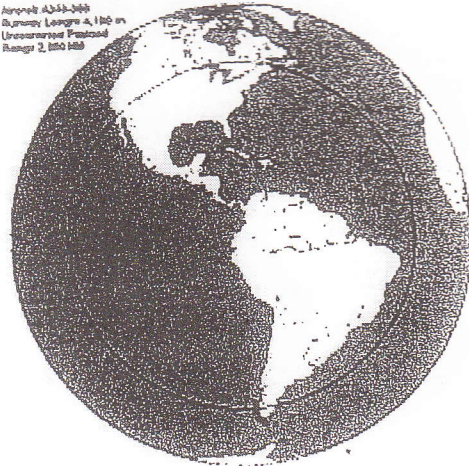
equivalent to 3015 m after subtracting the temperature adjustment of 712 m and slope adjustment of 373 m from 4100 m.

- Maximum allowable Break Release Gross weight at 2400 m altitude of 303,400 kg and 218,800 kg for the B747-400 and A340-300 respectively (consisting of Operating Empty Weight (OEW) and payload plus fuel).

Aircraft B747-400
 Runway Length 4,100 m
 Unrestricted Payload
 Range 2,250 NM



Aircraft A340-300
 Runway Length 4,100 m
 Unrestricted Payload
 Range 2,050 NM



5.2 4100 M RUNWAY LENGTH WITH MAXIMUM PASSENGER AND BAGGAGE PAYLOAD

Based on the above noted criteria and using a maximum runway length of 4,100 m, corrected for temperature and slope, combined with an unrestricted passenger and baggage load only, the maximum stage length available for typically configured design aircraft is increased as follows:

- B747-400	6,760 km	3,650 NM	Payload 41,000 kg – 65% of total
- A340-300	8,615 km	4,650 NM	Payload 32,000 kg – 60% of total

This calculation is based on the following:

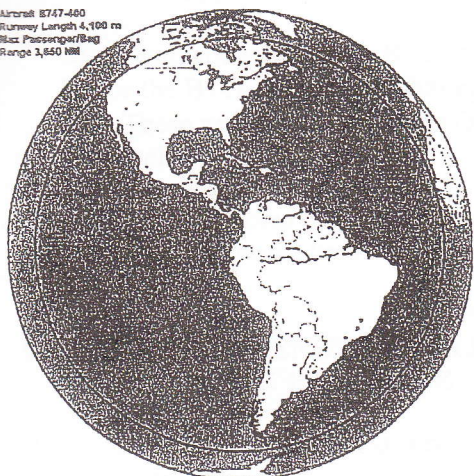
- Runway length used in performance charts is based on Standard Day conditions at 2400 m (Standard Temperature of -0.6°C) and zero runway gradient. This is equivalent to 3015 m after subtracting the temperature adjustment of 712 m and slope adjustment of 373 m from 4100 m.



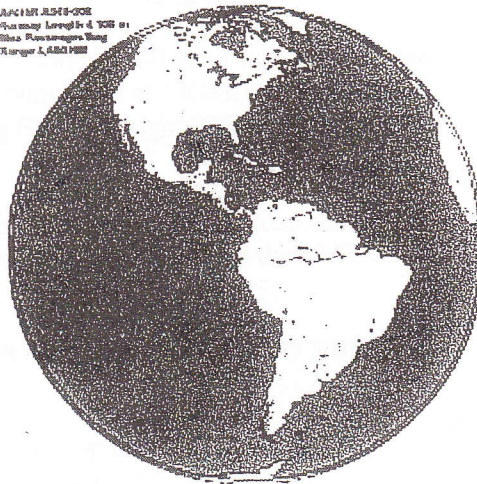
Runway Length Justification Report
Private and Confidential
 March 6, 2002

- Maximum allowable Break Release Gross weight at 2400 m altitude of 303,400 kg and 218,800 kg for the B747-400 and A340-300 respectively (consisting of Operating Empty Weight (OEW) and a full passenger/baggage payload plus fuel).

Aircraft: B747-400
 Runway Length: 4,100 m
 Max. Passenger/Bag
 Range: 1,650 NM



Aircraft: A340-300
 Runway Length: 4,100 m
 Max. Passenger/Bag
 Range: 1,650 NM



5.3 RUNWAY LENGTH TO ALLOW NON-STOP FLIGHT TO EUROPE
- NO WEIGHT RESTRICTION

Based on the need for the design aircraft to fly non-stop between Quito and Europe (Amsterdam) assuming no restrictions on uplift weight, the Quito Airport runway would need to be the following lengths to accommodate the design aircraft:

- B747-400 **6904 m*** Payload 59,000 kg (max) – 8% weight penalty
- A340-300 **5995 m*** Payload 44,400 kg (max) – 16% weight penalty

This calculation is based on the following:

- Distance Quito to Amsterdam – 9,574 Km – 5,169 NM.
- Runway lengths of 5,075 m for B747-400 (max tire speed) and 4,410 m for the A340-300 (brake energy limitation) are calculated from performance charts (Standard Day) based on Standard Day conditions at 2400 m and zero runway

7 KM

196 **VUC las neetas**