



Ejemplos de aeronaves Commercial Transport



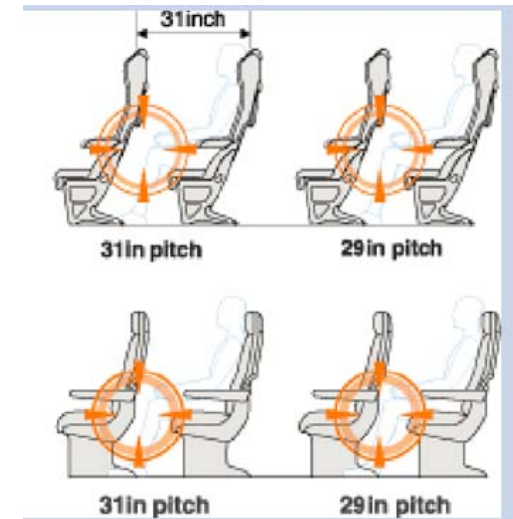
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Requirements For Proposal (RFP)

■ Características Generales

- 2 clases: 150 asientos en 2 clases
 - ~12 seats, 36" pitch first class,
 - ~138 seats @ 32" seat pitch economy class.
- 1 clase
 - 30" pitch seating sin límites de salida.
- Volumen de carga en cabina
 - Cargo capacity: $> 7.5 \text{ ft}^3/\text{pasajero}$ en compartimento de cabina.
- Carga de Pago
- Maximum payload capability
 - En configuración de carga de 1 clase (single class 30" pitch passenger capacity):
 - 185 lbs/pasajero, + 8 lbs/ft^3 en compartimento de cabina.
- Actuaciones:
 - Maximum Landing Weight (MLW) is operations with Maximum Zero Fuel Weight, plus fuel reserves for maximum range mission at that Payload.
 - Maximum Range:
 - 2800 nm with typical mission reserves
 - full dual class passenger load
 - assuming 225 lbs/passenger.
 - Typical mission (average) Ranges:
 - 500 nm 50% of missions,
 - 1000 nm for 40% of missions,
 - 2000 nm for 10% of missions.
 - Cruise speed Requirement:
 - .78 Mach (Long Range Cruise – LRC).
 - Objective: .80 Mach (LRC).
 - Altitud
 - Initial Cruise Altitude Capability at MTOW: $> 35,000' \text{ ISA} + 15 \text{ C degrees}$
 - Maximum operating altitude: 43,000'
 - Maximum landing speed (at Maximum Landing Weight): 135 knots
 - Takeoff Field Length (TOFL), MTOW: 7000' sea level, 86 deg F
 - Fuel burn block Fuel/seat 500 nm mission shall be requirement: $< 41 \text{ lbs/seat}$. Objective: $< 38 \text{ lbs/seat}$.



Seat Specifications

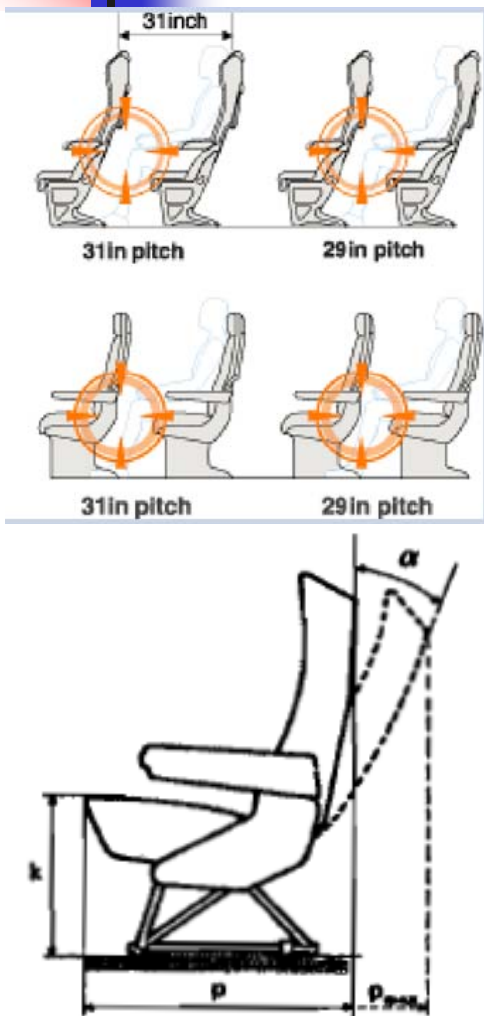


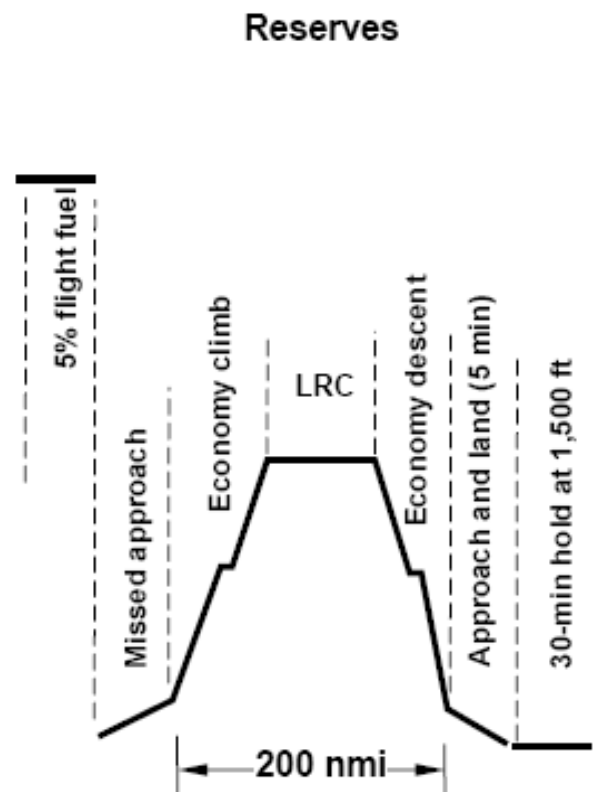
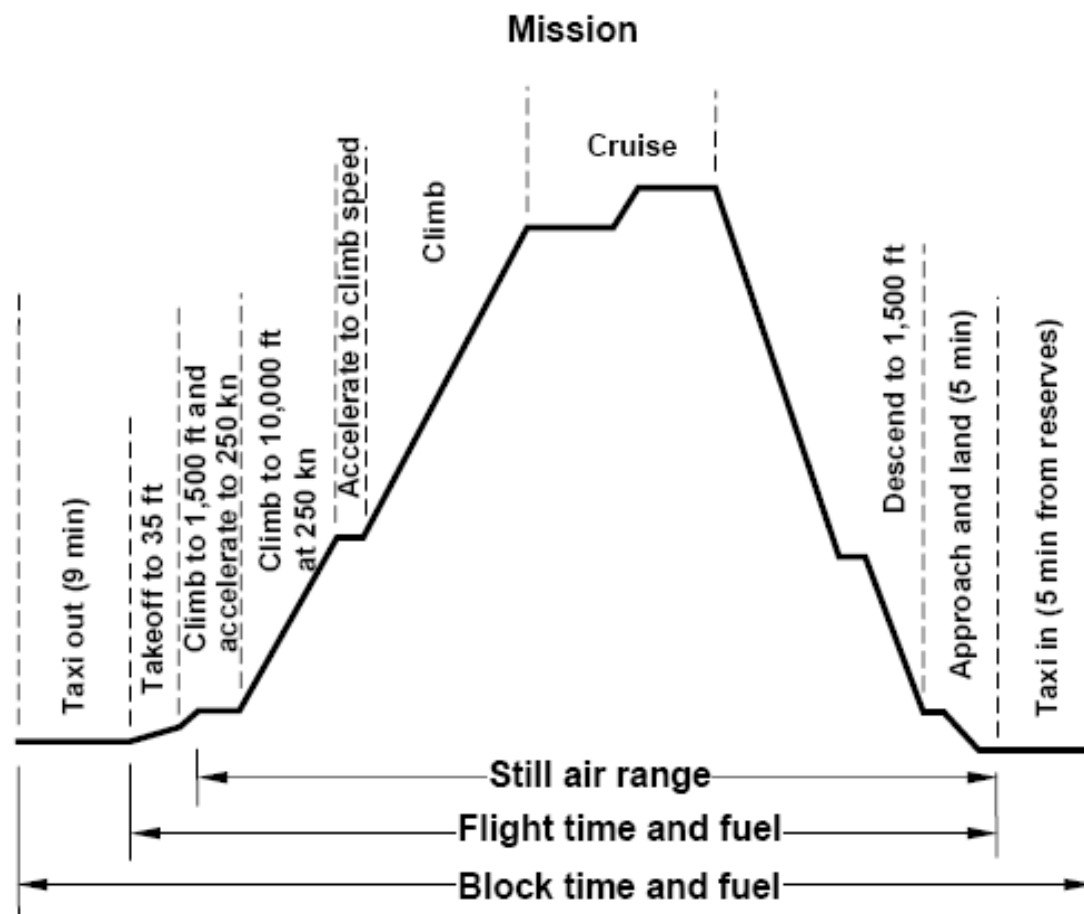
Fig. 3-15. Definitions of seat dimensions

SYMBOL	UNIT	SEAT CLASSIFICATION		
		DE LUXE	NORMAL	ECONOMY
a	inch	20(18½-21)	17(16½-17½)	16.5(16-17)
	cm	50(47-53)	43,5(42,5-45)	42(40,5-43,5)
b ₂	inch	47(46-48½)	40(39-41)	39(38-40)
	cm	120(117-123)	102(100-105)	99(97-102)
b ₃	inch	-	60(59-63)	57
	cm	-	152(150-160)	145
l	inch	2½	2½	2
	cm	7	5.5	5
h	inch	42(41-44)	42(41-44)	39(36-41)
	cm	107(104-112)	107(104-112)	99(92-104)
k	inch	17	17½	17½
	cm	43	45	45
m	inch	7½	8½	8½
	cm	20	22	22
n	inch	usually 32	32 (24-34)	
	cm	81	(61-86)	
p/p _{max}	inch	28/40	27/37½	26/35½
	cm	71/102	69/95	66/90
alpha/alpha _{max}	deg	15/45	15/38	15/38

*the index denotes the number of seats per block

Misión

Typical mission rules



- Standard day
- 6.7 lb per U.S. gal fuel density
- Nominal performance

Boeing 737 Next Generation (NG)

■ Passengers

- **Typical 2-class configuration** 126
- **Typical 1-class configuration** 149
- **Cargo** 966 cu ft (27.3 cu m)
- **Engines (maximum thrust)** CFMI CFM56-7
26,300 lb
- **Maximum Fuel Capacity** 6,875 U.S. gal (26,020 L)
- **Maximum Takeoff Weight** 154,500 lb (70,080 kg)
- **Maximum Range** 3,365 nautical miles (6,230 km)
- **Typical Cruise Speed (at 35,000 feet)** 0.785 Mach
- **Basic Dimensions**
 - **Wing Span** 112 ft 7 in (34.3 m)
With Winglets 117 ft 5 in (35.8 m)
 - **Overall Length** 110 ft 4 in (33.6 m)
 - **Tail Height** 41 ft 2 in (12.5 m)
 - **Interior Cabin Width** 11 ft 7 in (3.53 m)



Airbus A320

- **Características Capacidad de pasajeros:** 148 (dos clases); 180 (una clase)
- **Longitud:** 37,57 m
- **Envergadura:** 34,10 m
- **Altura:** 11,76 m
- **Área o superficie alar:** 122,6 m²
- **Ancho del fuselaje:** 3,95 m
- **Ancho de la cabina (de pasajeros):** 3,70 m
- **Longitud de la cabina:** 27,51 m
- **Peso vacío:** 42.400 kg
- **Máximo peso al despegue:** 77.000 kg
- **Capacidad de combustible:** 29.680 litros
- **Capacidad de carga:** 16,6 tn
- **Actuaciones**
 - **Velocidad crucero:** Mach 0.82 (900 km/h, 485 nudos)
 - **Autonomía:** 5.600 km (3.025 millas náuticas)
 - **Techo de servicio:** 12.000 m
 - **Empuje unitario (x2):** 120 kN



Airbus A320 - II

■ Aircraft Dimensions

■ Overall length	37.57 m.
■ Height	11.76 m.
■ Fuselage diameter	3.95 m.
■ Maximum cabin width	3.70 m.
■ Cabin length	27.51 m.
■ Wingspan (geometric)	34.10 m.
■ Wing area (reference)	122.6 m ²
■ Wing sweep (25% chord)	25 degrees
■ Wheelbase	12.64 m.
■ Wheel track	7.59 m.

■ BASIC OPERATING DATA

■ Engines	two CFM56-5 or IAE V2500
■ Engine thrust range	111-120 kN
■ Typical passenger seating	150
■ Range (w/max. passengers)	4,800 (5,700) km.
■ Max. operating Mach number (Mmo)	0.82 Mo.
■ Bulk hold volume - Standard/option	37.41 m ³

■ DESIGN WEIGHTS

■ Maximum ramp weight	73.9 (77.4) tonnes
■ Maximum takeoff weight	73.5 (77) tonnes
■ Maximum landing weight	64.5 (66) tonnes
■ Maximum zero fuel weight	61 (62.5) tonnes
■ Maximum fuel capacity	23,860 (29,840) Litres
■ Typical operating weight empty	42.4 tonnes
■ Typical volumetric payload	16.6 tonnes



Tupolev 154



- **Años de construcción:** 1968 - 1999
- **Constructor:** Túpolev
- **Envergadura:** 37,55 m
- **Longitud:** 47,9 m
- **Altura:** 11,4 m
- **Superficie de las alas:** 201,5 m²
- **Peso máximo de despegue:** 100.000 kg (Tu-154M)
- **Pasajeros:** 160-180
- **Velocidad máxima:** 860 km/h
- **Altitud máxima:** 11.000 m
- **Alcance máximo:** 4.000 km
- **Turbinas:** 3 *Kuznetsov NK-8-2U* (Tu-154A und B) con 103 kN de potencia cada una o 3 *Soloviev D-30 KP/KU* (Tu-154M) con 108 kN.



Sistemas de Propulsión

IAE V2500

■ IAE V2500

- Two-shaft high-bypass turbofan engine
- Thrust Range 22,000 to 33,000 lbs of thrust
- Models V2500-A1, V2500-A5, V2500-D5
- Applications Airbus A319, A320 and A321 Airbus Corporate Jetliner (ACJ) Boeing MD-90



V2500 engine specifications

	V2522-A5	V2524-A5	V2527-A5	V2530-A5	V2533-A5
Application	A319-100	A319-100	A320-200	A321-100	A321-200
EIS	October 97	June 97	December 93	March 94	April 97
Take-off thrust (lbf)	22,000	24,000	27,000	31,400	33,000
Fan diameter (in)	63.5	63.5	63.5	63.5	63.5
Air flow rate (lbs/s)	770	781	811	858	872
Bypass ratio	4.9	4.9	4.8	4.6	4.5
Cruise sfc (lbs/hr/lbf)	0.543	0.543	0.543	0.543	0.543

CFM International CFM56

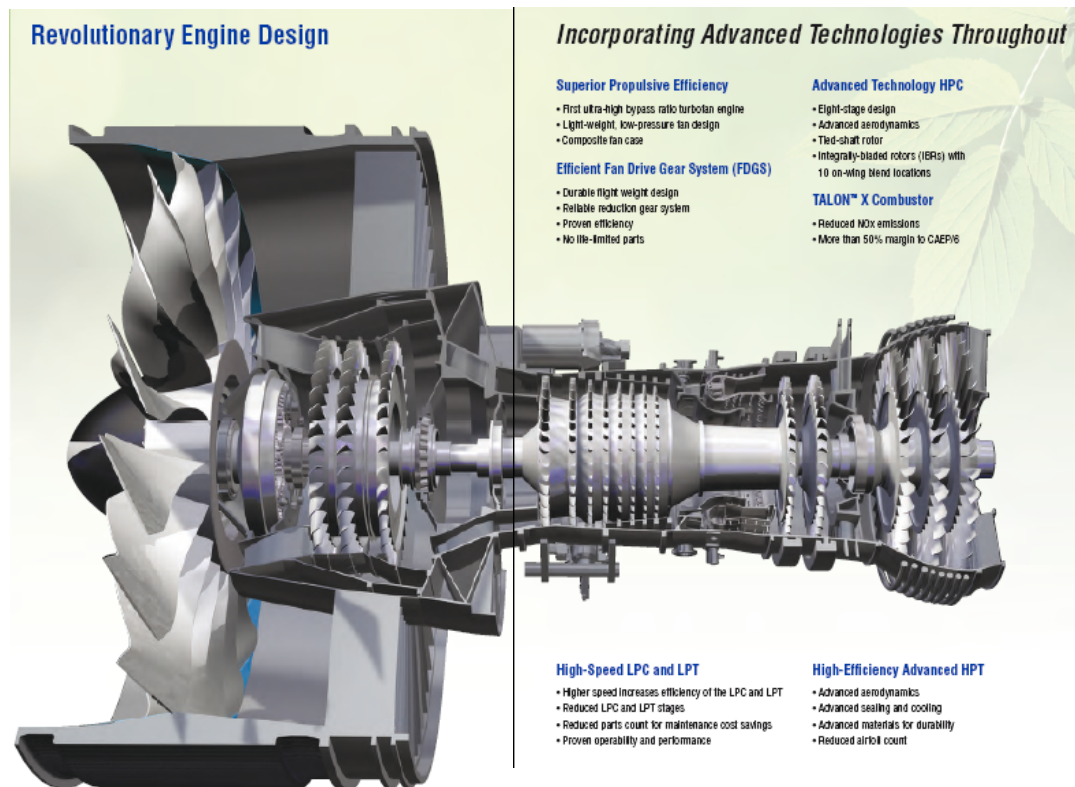
- **CFM International CFM56**

- high-bypass turbofan engines

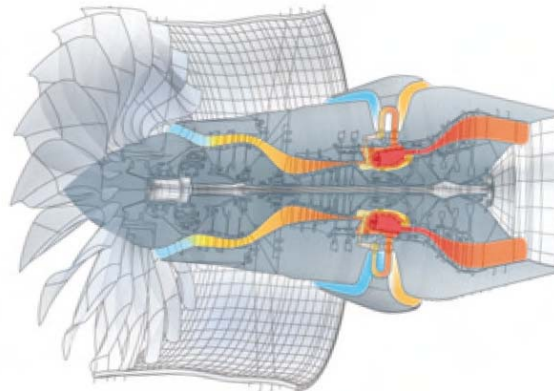
- Thrust range from 18,500 to 34,000 lbf (82 kN to 151 kN)
 - CFM 56-7B26



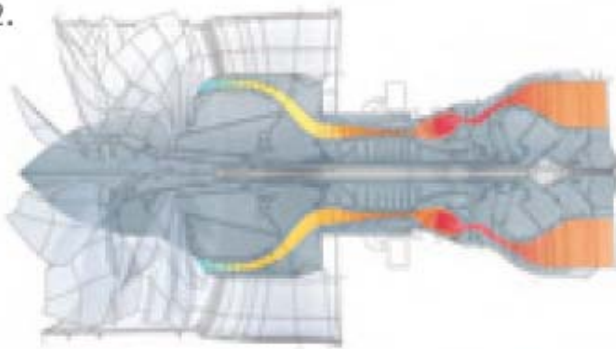
Pure Power PW1000



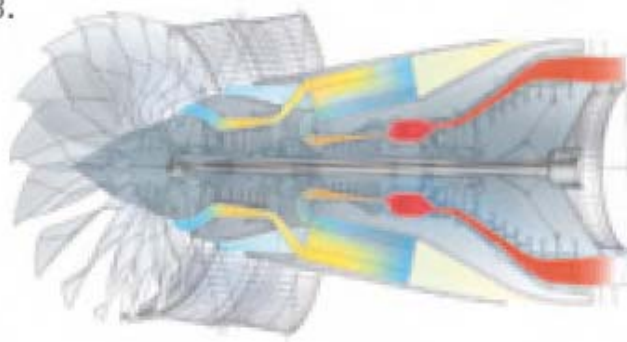
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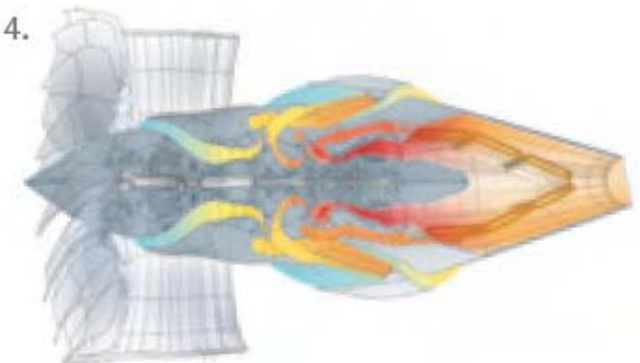
2.



3.



4.



1). Active Core 2). Flow Controlled Core 3). Intercooled Core 4). Intercooled Recuperative Core



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