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## AVRO RJ Technical Data - *at a glance*



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# Avro RJ - Technical Data

The Avro RJ family combines main line passenger accommodation with high performance to provide unmatched operating potential for both major and regional operators. With complete commonality across the three fuselage length family, Avro RJ customers can optimise regional jet operations to maximise revenue at minimal cost.

Configurations of the aircraft vary from less than 70 to more than 100 seats and include four, five or six abreast, mixed class or convertible seating. The high volume and easy access freight holds allow for additional mail and cargo.

This revenue earning capability, with high standards of performance, enables both niche and prime routes to be served. Longer routes, up to 3,000km, requiring less than 100 seats are regularly operated with full multi-class service by the Avro RJ.

In addition, excellent airfield performance permits comfortable jet travel to downtown, mountainous, or other restrictive airfields.

This brochure provides typical data for the Avro RJ but due to wide variations in delivery specification, BAE Systems Regional Aircraft should be consulted during the evaluation of a specific variant.



## Leading Particulars

Design Weights	RJ70	RJ85	RJ100
<b>Maximum take-off weight</b>			
• Standard	38,102 kg (84,000 lb)	42,185 kg (93,000 lb)	44,226 kg (97,500 lb)
• Optional	Up to 43,029 kg (95,000 lb)	Up to 43,999 kg (97,000 lb)	Up to 46,040 kg (101,500 lb)
• Unpaved runways	39,009 kg (86,000 lb)	39,009 kg (86,000 lb)	Not available
<b>Maximum landing weight</b>	37,875 kg (83,500 lb)	38,556 kg (85,000 lb)	40,143 kg (88,500 lb)
<b>Maximum zero-fuel weight</b>			
• Standard	32,423 kg (71,500 lb)	35,834 kg (79,000 lb)	37,422 kg (82,500 lb)
• Optional	33,793 kg (74,500 lb)	-	37,875 kg (83,500 lb)
<b>Operating Weight Empty*</b>			
(including crew & catering)	5 a/b 23,900 kg (52,690 lb) 6 a/b 24,100 kg (53,131 lb)	5 a/b 24,600 kg (54,234 lb) 6 a/b 24,820 kg (54,719 lb)	5 a/b 25,600 kg (56,438 lb) 6 a/b 25,670 kg (56,593 lb)

\* Based on typical in-service aircraft

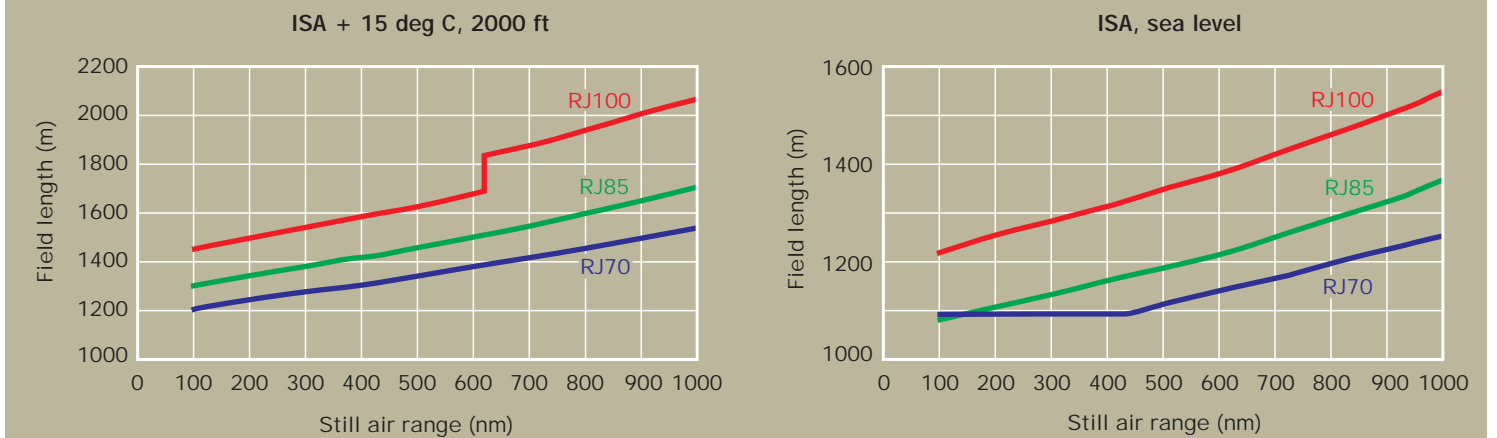
Design Speeds	RJ70	RJ85	RJ100
• Vmo	300 kt IAS	300 kt IAS	305 kt IAS
• Mmo (JAR)	MO.72	MO.72	MO.72
• Mmo (FAR)	MO.73	MO.73	MO.73

Dimensions	RJ70	RJ85	RJ100
<b>Wing span</b>	26.34 m (86 ft 5 in)	26.34 m (86 ft 5 in)	26.34 m (86 ft 5 in)
<b>Gross wing area</b>	77.3 sq m (832 sq ft)	77.3 sq m (832 sq ft)	77.3 sq m (832 sq ft)
<b>Overall length</b>	26.16 m (85 ft 10 in)	28.55 m (93 ft 8 in)	30.99 m (101 ft 8 in)
<b>Overall height</b>	8.61 m (28 ft 3 in)	8.61 m (28 ft 3 in)	8.59 m (28 ft 2 in)
<b>Main landing gear track</b>	4.72 m (15 ft 6 in)	4.72 m (15 ft 6 in)	4.72 m (15 ft 6 in)
<b>Wheelbase</b>	10.09 m (33 ft 1.5 in)	11.20 m (36 ft 9 in)	12.52 m (41 ft 1 in)
<b>Passenger cabin</b>			
• Length	15.42 m (50 ft 7 in)	17.81 m (58 ft 5 in)	20.20 m (66 ft 3 in)
• Headroom	2.07 m (6 ft 9.5 in)	2.07 m (6 ft 9.5 in)	2.07 m (6 ft 9.5 in)
• Internal diameter	3.42 m (11 ft 3 in)	3.42 m (11 ft 3 in)	3.42 m (11 ft 3 in)
• Floor width	3.24 m (10 ft 8 in)	3.24 m (10 ft 8 in)	3.24 m (10 ft 8 in)

## Airfield Performance

<b>Elevation range</b>	From -1,000 ft to 8,000 ft (Optional to 14,000 ft)	
<b>Temperature range</b>	From -40 deg C to 50 deg C (below 2,525 ft) / ISA + 35 deg C	
<b>Approach category</b>	RJ70 & RJ85	B
	RJ100	C
<b>ILS category</b>	<ul style="list-style-type: none"> <li>• Standard</li> <li>• Optional</li> </ul>	JAA / FAA category IIIa, 50 ft DH, minimum operational RVR 200 m (FAA 700 ft) JAA category IIIb, 50 ft DH, minimum operational RVR 150 m
<b>Maximum certificated approach angle</b>	RJ70 & RJ85	6 degrees
	RJ100	5.5 degrees
<b>Maximum demonstrated crosswind</b>	35 kt	
<b>Maximum certificated tailwind</b>		
	<ul style="list-style-type: none"> <li>• Take-off &amp; normal landing</li> <li>• Steep approach landing</li> </ul>	15 kt 5 kt
<b>ILS/Autoland limits</b>	Headwind	25 kt
	Crosswind	15 kt
	Tailwind	10 kt

### Take-off Field Length



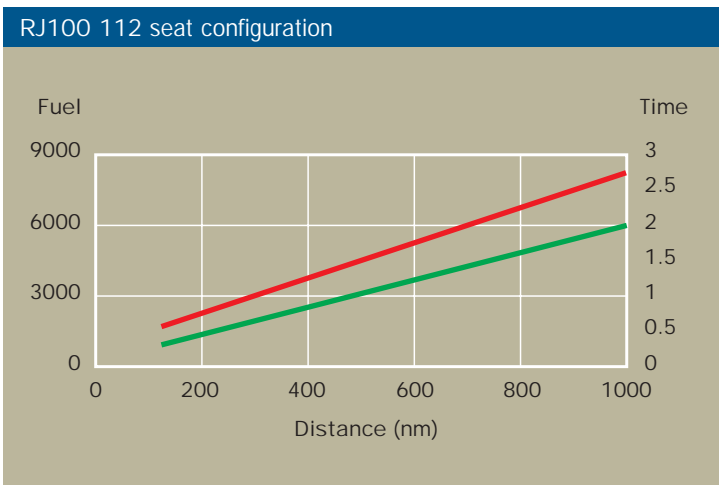
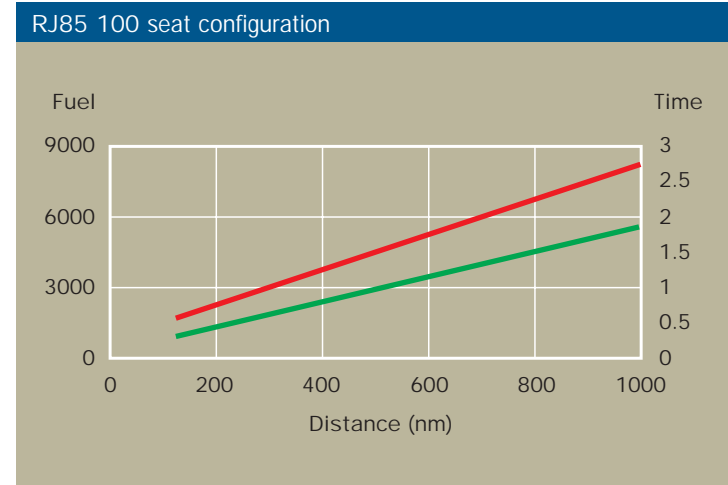
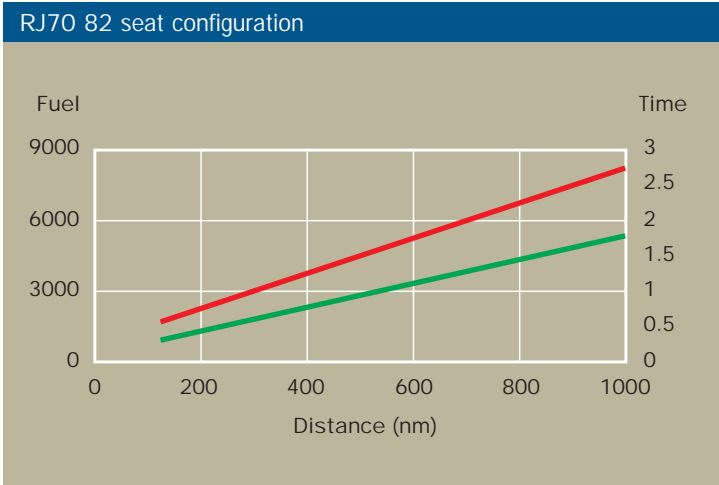
### Assumptions

JAR reserves, 150 nm diversion. Level, paved runway, no obstacles.  
Maximum passenger payload, 6 abreast configuration.  
Optional 33 deg maximum flap setting for RJ85 and RJ100.

Landing Field Length	RJ70		RJ85		RJ100	
<b>Payload</b>	7,790 kg (17,174 lb)		9,500 kg (20,944 lb)		10,640 kg (23,457 lb)	
<b>Equivalent to</b>	82 pax @ 95 kg		100 pax @ 95 kg		112 pax @ 95 kg	
<b>Elevation</b>	Sea level	2,000 ft	Sea level	2,000 ft	Sea level	2,000 ft
<b>Normal Approach</b>						
<b>Dry runway</b>	1,082 m	1,129 m	1,137 m	1,187 m	1,211 m	1,261 m
	3,550 ft	3,704 ft	3,730 ft	3,894 ft	3,973 ft	4,137 ft
<b>Wet runway</b>	1,245 m	1,298 m	1,308 m	1,365 m	1,392 m	1,450 m
	4,085 ft	4,258 ft	4,291 ft	4,477 ft	4,566 ft	4,757 ft
<b>Steep Approach (35 ft screen height)</b>						
<b>Dry runway</b>	1,000 m	1,046 m	1,060 m	1,109 m	1,067 m	1,117 m
	3,281 ft	3,432 ft	3,478 ft	3,638 ft	3,501 ft	3,665 ft
<b>Wet runway</b>	1,162 m	1,215 m	1,230 m	1,287 m	1,249 m	1,306 m
	3,812 ft	3,986 ft	4,035 ft	4,222 ft	4,097 ft	4,284 ft

JAR reserves, 400 nm sector, 150 nm diversion.

## Block Fuel and Time



— Time (hr)  
— Fuel (kg)

**Assumptions**  
Normal cruise procedure  
ISA, still air



Capacities	RJ70	RJ85	RJ100
<b>Lower holds (front and rear)</b>			
• Total volume	13.56 cu m (479 cu ft)	18.25 cu m (645 cu ft)	22.98 cu m (812 cu ft)
• Maximum loading	366 kg/sq m (75 lb/sq ft)	366 kg/sq m (75 lb/sq ft)	366 kg/sq m (75 lb/sq ft)
• Maximum weight	2,267 kg (5,000 lb)	3,026 kg (6,670 lb)	3,834 kg (8,370 lb)
<b>Overhead bin volume</b>	3.6 cu m (127.3 cu ft)	4.4 cu m (155.1 cu ft)	5.2 cu.m. (183.4 cu ft)
<b>Fuel capacity</b>	11,728 litres (2,580 Imp Gal, 3,099 USG)		

## Performance Assumptions

**JAR Reserve Policy**

- 5% trip fuel
- Overshoot at destination
- Diversion and approach to alternate
- 30 minutes hold at 1500 ft at alternate

Manoeuvre Allowances	Fuel (kg)	Time (min)
Engine start and pre-taxi checks	18	
Taxi-out (all engines)	89	5.0
Take-off and climb to 1500 ft	Varies with take-off weight	
Approach and land	143	5.0
Taxi-in (2 engines - fuel from reserves)	23	2.5

No distance credit below 1500 ft

**Operating Speeds**

	Normal (minimum cost) cruise	Long range cruise
<b>Climb</b>	280 kt* / M0.66	250 kt / M0.62**/M0.66***
<b>Cruise</b>	Vmo / M0.70 / MCT	99% Max SAR
<b>Descent</b>	290 kt* / M0.70	250 kt / M0.65

\* 250 kt below 10,000 ft \*\* M0.64 for TOW above 41,000 kg \*\*\* M0.66 above 31,000 ft

## Powerplant

Engines		Auxiliary Power Unit	
<b>Type</b>	Honeywell LF 507-1F	<b>Type</b>	Sundstrand APS 1000
<b>Take-off thrust</b> (static, sea level, ISA)	31.15 kN (7,000 lb)	<b>In flight start ceiling</b>	20,000 ft
Flat rated	23.3 deg C	<b>Electrical power ceiling</b>	25,000 ft
<b>Maximum continuous</b>	29.14 kN (6,548 lb)	<b>Air conditioning ceiling</b>	15,000 ft
Flat rated	25.0 deg C		
<b>Overall pressure ratio</b>	13 : 1		
<b>By-pass ratio</b>	5.0 : 1		
<b>Overall length</b>	1.49 m (4 ft 10.6 in)		
<b>Fan diameter</b>	1.06 m (3 ft 5.7 in)		
<b>Bare engine weight</b>	628 kg (1,385 lb)		

## Avionics

**EFIS Flight Deck**

The Avro RJ flight deck features EFIS displays and digital avionics. The avionics fit will vary from aircraft to aircraft but the list below covers the likely avionics specification of a typical aircraft:

- Collins passenger address system
- Honeywell DFCS
- Dual ADF
- Single or dual Collins Radalt
- Dual GNS-X or Collins GNLU910A Nav. Management Systems
- TCAS Change 7
- Flight Data Recorder
- Dual Collins 8.33Khz VHF Comms
- Dual Collins DME700
- Dual VHF Nav (ILS720/VOR700A)
- Sundstrand Mk5 GPWS or Honeywell EGPWS
- Honeywell RDR-4A Weather radar
- Dual Mode 'S' transponders
- Cockpit Voice Recorder

# Cabin Features

## Spaceliner Cabin - 4, 5, 6 Abreast Configurations

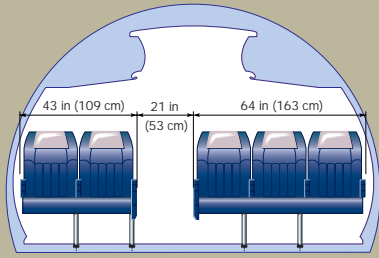
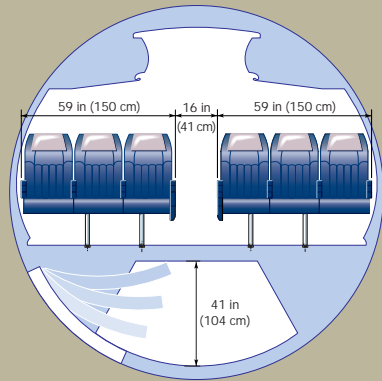
The Avro RJ matches any regional jet requirement in capacity and service standard. With six-abreast economy, five-abreast business and four-abreast first class cabin options, a whole range of existing aircraft from 50 seat turboprops to 130 seat mainline jets can be successfully replaced.

The outstanding 'Spaceliner' interior with its large overhead bins and two large underfloor holds can accommodate a mixture of hand luggage, checked bags and additional revenue earning freight.

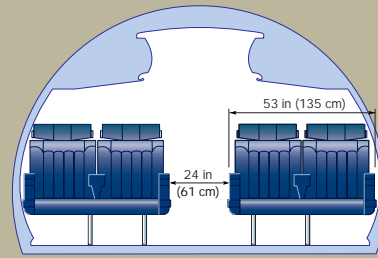
With passenger and cabin service doors, galleys and toilet locations at both ends of the cabin, the Avro RJ family matches 'big jet' standards at regional market cost levels.



### Economy Class



Business Class



First Class

## Typical Economy Layouts

**RJ70**  
82 seat capacity - 31 in pitch



**RJ85**  
100 seat capacity - 31 in pitch



**RJ100**  
112 seat capacity - 31 in pitch

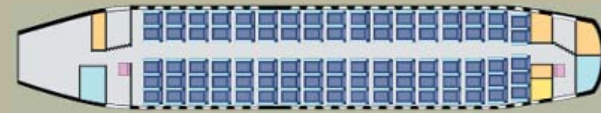


## Typical Business Layouts

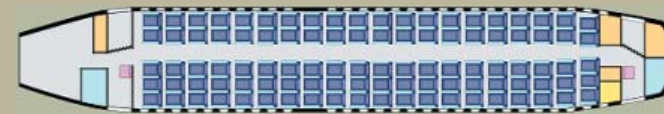
**RJ70**  
70 seat capacity - 31 in pitch



**RJ85**  
85 seat capacity - 31 in pitch



**RJ100**  
100 seat capacity - 31 in pitch



Attendant seat Galley Toilet Stowage

# Range Capability

5 Abreast Configuration	RJ70	RJ85	RJ100
<b>Seating</b>	70	85	100
<b>Payload</b>	6,650 kg (14,660 lb)	8,075 kg (17,802 lb)	9,500 kg (20,944 lb)
<b>Range</b>			
• Standard	2,715 km (1,465 nm)	2,531 km (1,366 nm)	2,255 km (1,217 nm)
• Optional	2,715 km (1,465 nm)	2,531 km (1,366 nm)	2,301 km (1,242 nm)
6 Abreast Configuration	RJ70	RJ85	RJ100
<b>Seating</b>	82	100	112
<b>Payload</b>	7,790 kg (17,174 lb)	9,500 kg (20,944 lb)	10,650 kg (23,457 lb)
<b>Range</b>			
• Standard	2,500 km (1,349 nm)	1,959 km (1,057 nm)	1,816 km (980 nm)
• Optional	2,618 km (1,413 nm)	2,424 km (1,308 nm)	2,222 km (1,199 nm)
Flight Envelope		Assumptions	
<b>Maximum altitude:</b>	35,000 ft	ISA, still air	
<b>Temperature range:</b>	From BCAR Arctic (-50 deg C at sea level / -65 deg C at 35,000 ft) to ISA + 35 deg C	JAR reserves, 150 nm diversion	
		Long range cruise	
		Sea level airfields	
		Payload is maximum passengers at 95 kg each.	

## Payload Range

