European Aviation Safety Agency

EASA

TYPE-CERTIFICATE DATA SHEET

No. EASA.IM.A.176

For
RRJ-95

Type Certificate Holder:

Joint Stock Company Sukhoi Civil Aircraft

Polikarpov str., 23B, building 2
Russian Federation, 125284, Moscow

For Models:

RRJ-95B

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SECTION 1: RRJ-95B

I. General

This Data Sheet, which is part of Type Certificate No. IM.A.176, prescribes conditions and limitations under which the product for which the Type Certificate was issued meets the airworthiness requirements of the European Aviation Safety Agency

1. Type/ Model/ Variant:

RRJ-95B

2. Performance Class:

A

3. Certifying Authority:

Interstate Aviation Committee Aviation Register
Bolshaya Ordynka str., 22/2/1
119017, Moscow, Russia

4. Manufacturer

Joint Stock Company Sukhoi Civil Aircraft
Polikarpov str., 23B, building 2
Russian Federation, 125284, Moscow

5. IAC AR Certification Application Date

April 15th, 2004

6. EASA Validation Application Date

July 22nd, 2004

7. IAC AR Type Certification Date

January 28th, 2011

8. EASA Type Validation Date

February 3rd , 2012

II. Certification Basis

1. Reference Date for determining the applicable requirements

January 27th, 2006

2. IAC AR Type Certification Data Sheet No

CT 322-RRJ-95

3. IAC AR Certification Basis

Requirements from the document №RRJ0000-LS-204-021RU, Rev. G, based on Aviation Regulations, Part 25 Airworthiness Regulations of Transport Category Airplanes with Amendments 1-5

4. EASA Airworthiness Requirements

EASA Certification Specification 25, Amendment 1, effective as of December 12, 2005, except where identified below.

Certification Specification All Weather Operations (CS AWO), Book 1 and 2 published October 17, 2003.

5. Special Conditions

5.1 *Special conditions* issued because the product has novel or unusual design features relative to the design practices on which the applicable CS 25 are based (EC 1702/2003 part 21 .A16(a)(1))

B-01	Motion and Effects of Cockpit Controls
B-03	Flight Envelope Protection
B-04	Normal load factor limiting system
B-05	Static Longitudinal Stability and Low energy awareness
B-06	Stalling and operating speeds
B-09	Flight in icing condition
C-03	Engine and APU Load Conditions
C-07	Design Manoeuvre Requirements
C-11	Pilot Limit Forces
C-12	Design Dive Speed
D-07	Application of heat release and smoke density requirements to seat materials
F-01	HIRF Protection
F-17	Aircraft Towing

F-24 Security Assurance Process to isolate or protect the Aircraft systems and networks from external network security threats

5.2 *Special conditions* issued because the intended use of the product is unconventional (EC 1702/2003 part 21 .A16 (a) (2))

None

5.3 *Special conditions* issued because experience from other products has shown that unsafe conditions may develop (EC 1702/2003 part 21 .A16 (a) (3))

B-02 Consistency between Crew Procedures and Published Performance Data

D-03 Fire protection of thermal and acoustic insulation material

E-02 Fuel Tank Safety

E-04 Sustained Engine Imbalance

E-08 Flammability Reduction System (Nitrogen Generation System)

E-09 Fuel Quantity Indication System

E-10 Water / Ice in Fuel System

H-01 Enhanced Airworthiness Program for Airplane Systems – ICA on EWIS

5.4 *Special conditions* issued from an elect to comply by the applicant with NPA or other regulatory proposals

None

6. Elect to Comply

None

7. Deviations

None

8. Equivalent Safety Findings

D-01 Type C Passenger Exits

D-04 Fuselage Doors, Hatches and Exits

D-08 Flight Controls system - application of ARAC proposal 25.671

E-07 Falling and blowing snow

E-15 Green Arc for Powerplant Instruments

9. Environmental Protection Standards

- ICAO Annex 16 Volume 1 " Aircraft Noise" 3-rd Edition, amendment 7, Part II "Aircraft Noise certification", Chapter 4 and
- CS 36 amendment 1 (ED decision n° 2007/007/R dated 3 April 2007)
- Part II, Chapter 2 of ICAO Annex 16 Volume II, 2nd Edition, Amendment 4
- CS 34 initial issue(ED decision n° 2003/3/RM dated 11/10/2003)

III. Technical Characteristics and Operational Limitations

1. Type Design Definition

The type aircraft is defined in document T7.TD.0000.000.13/J

2. Description

The RRJ-95B aircraft is a twin turbofan engine, single aisle, large category aircraft, short /medium range.

3. Equipment

The basic required equipment as prescribed in the applicable airworthiness regulations shall be installed in the aircraft. Those equipment are identified in document T7.92.0000.000.000.30.

4. Dimensions

Overall Length	29,940 m (98.23 ft)
Total Height	10,283 m (33.74 ft)
Wing Span	27,80 m (91.21 ft)
Wing Area	83.80 m^2 (902 ft^2)

5. Engines

Two (2) PowerJet S.A. Turbofan Engine Models
SaM146-1S17 turbofan (EASA Engine Type Certificate: EASA.E.034)

Engine Limits:

	Low Pressure Rotor Speed N1 (rpm)	**High Pressure Rotor Speed N2 (rpm)**	**Sea Level static thrust ratings (daN)**	**Maximum Exhaust Gas Temperature (°C)**
Maximum for Takeoff (5 min)	6814 (105%)	18523 (110%)	7684	972
Maximum continuous	6814 (105%)	18523 (110%)	6637	928

Reference Speeds (100%): N1 6489rpm & N2 16839

Oil Temperature: Starting: - 40°C (min.)
Minimum before take-off: 10°C
Maximum: 140°C
(During transients within the flight envelope an oil supply temperature rise up to 155°C is allowed)

Note: Other engine limitations: See the relevant Engine Type Certificate Data Sheet.

6. Auxiliary Power Unit

One APU Honeywell RE220 (RJ) (approved by TSO C-77A)
Oils: refer to the applicable approved manuals

7. Fluids (Fuel, Oil, Additives, Hydraulics)

7.1 Fuel

KEROSENE	Specification			
	FRANCE	UK	USA	RUSSIA
JET A-1	DCSEA 134	DEF STAN 91-91	ASTM D 1655	GOST R 52050
JET A			ASTM D 1655	
RT TS-1				GOST 10277

7.2 Oil

Type I: BP2389 (MIL-PRF-7808)
Type II: MJII reference oil (MIL-PRF-23699 and SAE AS5780)

7.3 Hydraulics

Nominal pressure: 3000 psi
Hydraulic fluids: SKYDROL LD4 and HyJet IV-Aplus
(in compliance with specifications AS1241).

Note: Refer also to the Limitations Section of the Airplane Flight Manual

8. Fluid Capacities

8.1 Fuel

Tanks	Usable Fuel	
	Liters	Kg(*)
Center Tank	5665	4419
Wing tank compartment 1	1925	1501
Wing Tank compartment 2	1660	1295
Wing tank compartment 3	1350	1053
Wing tank supply compartment	135	105
Total wing tank L or R	5070	3954
Total	**15805**	**12327**
	Unusable fuel	
Center Tank	2	1.6
Wing tank L or R	21	16.8
Total	**44**	**18.4**

* Fuel Density 0.78 Kilograms / Liter

8.2 Oil

Maximum Engine Oil Volume: 13,9 liters per tank
Minimum Engine Oil Volume: 6,95 liters per tank

Maximum APU Oil Volume: 4,83 liters
Minimum APU Oil Volume: 3,55 liters

9. Airspeed

(Unless otherwise specified, speeds are indicated airspeeds)

- Maximum operating limit speed (V_{MO}) 308 kts IAS.
- Maximum operating limit Mach number (M_{MO}) 0.81 M.
- V_{MCL} (sea level) FLAPS 2: 115 kts

  FLAPS 3/FULL: 112 kts
- V_{MC} (sea level) 117 kts
- V_{MCG} (sea level) 106 kts

- Landing Gear Extension speed (V_{LO}) 255 kts CAS
- Landing Gear Retraction speed (V_{LO}) 215 kts CAS
- Landing Gear Extended (V_{LE}) 255 kts CAS

10. Flight Envelope

Maximum Operating Altitude: 12200 m / 40000 ft

11. Operating Limitations

11.1 Approved Operations

The airplane is approved for the following kinds of flight and operation, both Day and Night, provided the required equipment is installed and approved in accordance with the applicable regulations/specifications:

- Visual (VFR)
- Instrument (IFR)
- Icing Conditions
- Low weather minima (CAT I operations)

11.2 Other Limitations

Airport Elevation	up to 5000 ft (1524m) (barometric pressure)
Environmental Ground Temperature	+/- 40°C
Maximum Crosswind (take off/landing)	20 Kts
Maximum tailwind (take off/landing)	10 Kts
Runway slope	+/- 2%

Note : refer to the Airplane Flight Manual for any other limitation

12. Maximum Certified Masses

- Maximum Ramp Weight (MRW) 46055 kg
- Maximum Take-Off Weight (MTOW) 45880 kg
- Maximum Landing Weight (MLW) 41000 kg
- Maximum Zero Fuel Weight (MZFW) 40000 kg

13. Centre of Gravity Range

Extreme forward: 8% MAC
Extreme aft 36% MAC

Note: Refer to the approved Airplane Flight Manual for dependence of allowable CG's position depending on the aircraft weight

14. Datum

Station 0.0 is located 1.78 m [70.08 in] forward of the airplane nose

15. Mean Aerodynamic Chord (MAC)

3063mm [120.6 inches]

16. Levelling Means

Leveling targets are marked in red on the fuselage, wing and stabilizers. Laser means are used for leveling

17. Minimum Flight Crew

Two (2): Pilot and co-pilot

18. Maximum Seating Capacity

The maximum number of passengers approved for the emergency evacuation is 98

Note: See interior layout drawing for the maximum passenger capacities approved for each aeroplane when delivered

19. Baggage/ Cargo Compartment

Cargo compartment (class C)	Maximum Load (kg)
Forward	1945
Aft	2255
Total	4200

For the positions and the loading conditions authorized in each position (references of containers, pallets and associated weights), see Weight and Balance Manual

20. Wheels and Tyres

20.1 Wheels

Nose Landing Gear: H24x7.7-10
Main Landing Gear: H40x14.5-19

20.2 Tires:

Nose Landing Gear: 24x7.7 R10 - 16 PR - 225 MPH
Main Landing Gear: 40x14.5 R19 - 24PR - 225 MPH

IV. Operating and Service Instructions

1. Airplane Flight Manual (AFM)

EASA Approved Airplane Flight Manual referenced № M7.92.0AFM.000.000.EN Revision A

2. Instructions for Continued Airworthiness and Airworthiness Limitations

EASA Approved Aircraft Maintenance Manual Chapter 04 Airworthiness Limitations Section referenced № M7.92.0AMM.004.000.EN Revision 00 including

2.1 Certification Maintenance Requirements (CMR)

2.2 Airworthiness Limitation Items (ALI)

2.3 Safe Life Limits

3. Weight and Balance Manual (WBM)

SCAC document referenced № M7.92.0WBM.000.000.EN Revision 0

V. Notes

1. Import Requirements:

a. The Export Certificate of Airworthiness to EU country issued by IAC AR should contain the following statement (in the English language):
"The aircraft covered by this certificate has been examined, tested, and found to conform to the Type Design approved under EASA Type Certificate No. IM.A.176 as defined in TCDS IM.A.176 issue 1 (or later revision) and to be in condition for safe operation."

b. Before the issuance of an Export Certificate of Airworthiness to EU Country by IAC AR:

- the actions defined in SCAC Letter referenced 246/354 dated 01/02/2012 must be satisfactory completed, and

- the Maintenance Review Board Document in English version is approved by the Agency.

- Instructions for Continued Airworthiness in English language must be made available per Regulation (EC) No 1702/2003 21.A61.

SECTION II : ADMINISTRATIVE

I. Acronyms and Abbreviations

A/C Aircraft
AFM Airplane Flight Manual
ALI Airworthiness Limitation Items
AMC Acceptable Means of Compliance
APU Auxiliary Power Unit
CG Center of Gravity
CMR Certification Maintenance Requirements
CRI Certification Review Item
EASA European Aviation Safety Agency
EU European Union
EWIS Enhanced Wiring Interconnection System
ICA Instructions for Continued Airworthiness
ICAO International Civil Aviation Organization
IFR Instrument Flight Rules
VFR Visual Flight Rules
NPA Notice of Proposed Amendment
TCDS Type Certificate Data Sheet
TCDSN Type Certificate Data Sheet for Noise
VFR Visual Flight Rules

II. Type Certificate Holder Record

Joint Stock Company Sukhoi Civil Aircraft
Polikarpov str., 23B, building 2
Russian Federation, 125284, Moscow

III. Change Record

Issue	Date	Changes	TC issue
Issue 01	3 February 2012	Initial Issue for Model RRJ-95B Initial Issue,	Initial Issue, 3 February 2012

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