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# TYPE-CERTIFICATE DATA SHEET

**No. EASA.IM. A.176**

**for**

RRJ-95 aeroplanes

**Type Certificate Holder:**

Irkut Corporation JSC

125315, Moscow, Leningradsky Avenue, 68

Russian Federation

For Model: RRJ-95B aeroplanes



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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-95 / RRJ-95B / --**

#### 2. Performance Class

A

#### 3. Certifying Authority

Original Certifying Authority:

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

Since 28 November 2015, the State of Design responsibility was transferred from IAC-AR to the Russian Federation's Federal Air Transport Agency (Rosaviatsia) in accordance with the governmental decree No. 1283.

Since that date the Competent Authority is:

Federal Air Transport Agency (Rosaviatsia)  
Leningradsky Avenue 37, Building 2  
125993, Moscow,  
Russian Federation

#### 4. Manufacturer

Irkut Corporation JSC, Regional Aircraft Branch (Previously Sukhoi Civil Aircraft Corporation):

15 Tupoleva Street, Zukhovskiy 140180, Russian Federation  
*and*  
1 Sovetskaya Street, Komsomolsk-On-Amur 681018, Russian Federation



## 5. Original IAC-AR Application Date

15 April 2004 (Application correction 24 April 2009)

## 6. EASA Type Certification Application Date

22 July 2004 (Letter 4631/354 dated 03.07.2009 to update the reference date)

## 7. Original IAC-AR and FATA Type Certificates

### 7.1 IAC AR Type Certificate

Original issue of IAC-AR TC No. CT 322-RRJ-95: 28 January 2011  
Revision 1: 20 August 2013

### 7.2 FATA Type Certificate

Original issue of FATA TC No. FATA-01020A: 26 January 2018  
Revision 1: 18 February 2020

## 8. EASA Type Certificate

Original issue of EASA.IM. A.176: 03 February 2012

## 9. EASA Type Certificate Data Sheet for Noise (TCDSN)

Original issue: 03 February 2012  
Issue 02: 07 March 2017

## **II. Certification Basis**

### 1. Reference date for determining the applicable airworthiness requirements

27 January 2006

### 2. Reference Date for determining the applicable operational suitability requirements

June 2008 for Master Minimum Equipment List as per JAR MMEL/MEL amendment 1 as defined in ORI No. 4.  
31 January 2014 for Flight Crew Data as per CS-FCD.  
31 January 2014 for Cabin Crew Data as per CS-CCD.

### 3. Certifying Authority Certification Data Sheet

IAC-AR original Certificate Data Sheet CT 322-RRJ-05 dated 28 January 2011.  
FATA original Certificate Data Sheet FATA-01020A dated 26 January 2018.



## 4. Certifying Authority Certification Basis

IAC AR requirements as listed in Sukhoi document No. RRJ0000-LS-204-021RU, Rev. G, and FATA requirements as listed in Sukhoi document No. RRJ0000-LS-204-021RU, Rev. H, are based on Russian Federation's Aviation Regulations, Part 25 Airworthiness Regulations of Transport Category Airplanes with Amendments 1-5.

## 5. EASA Airworthiness Requirements

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

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

### 5.1. Special Conditions

5.1.1. 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) refers)

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-01	Interaction Systems and Structures
C-03	Engine and APU Load Conditions
C-06	Gust and Turbulence
C-07	Design Manoeuvre Requirements
C-11	Pilot Limit Forces
C-12	Design Dive Speed
C-14	Main Landing Gear Doors Load Condition
D-01	Type C Passenger Exits
D-06	Harmonized 671/672
D-07	Application of heat release and smoke density requirements to seat materials
E-01	Reversing System Requirements
F-01	HIRF Protection



- F-17 Aircraft Towing
- F-21 Flight Data Recorders
- F-24 Security Assurance Process to isolate or protect the Aircraft systems and networks from external network security threats

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

None

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

- B-02 Consistency between Crew Procedures and Published Performance Data
- D-03 Fire protection of thermal and acoustic insulation material
- D-04 Fuselage Doors, Hatches and Exits
- D-08 Flight Controls system - application of ARAC proposal 25.671
- E-02 Fuel Tank Safety
- E-04 Sustained Engine Imbalance
- E-07 Flawing and Blowing Snow
- 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

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

None

## 5.2. Exemptions

None

## 5.3. Deviations

None

## 5.4. Equivalent Safety Findings

- D-11 Green Aircraft Exit Configuration





## 5.5. Environmental Protection Requirements

- ICAO Annex 16 Volume 1 “Aircraft Noise” 3rd 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 October 2003)

## 5.6. Environmental Protection Standards

ICAO Annex 16, Volume I, Amendment 9 (Fifth Edition), Chapter 4 for Noise; and ICAO Annex 16, Volume II (Third Edition), Amendment 6, for Emissions.

For details of the certified noise levels see TCDSN EASA.IM. A.176.

## 6. Operational Suitability Requirements

### 6.1 Flight Crew Data

Certification Specifications for Operational Suitability Data (OSD) Flight Crew Data – CS-FCD, Initial Issue (dated 31 January 2014)

### 6.2. Cabin Crew Data

Certification Specifications for Operational Suitability Data (OSD) Cabin Crew Data – CS-CCD, Initial Issue (dated 31 January 2014)

### 6.3. Master Minimum Equipment List

Certification basis as recorded in ORI No. 4 is JAR-MMEL Section 1 Subpart A and B Amendment 1 with the MoC specified in SCAC position in the ORI No.4.

## **III. Technical Characteristics and Operational Limitations**

### 1. Type Design Definition

The aircraft type design is defined in Irkut Corporation (previously Sukhoi Civil Aircraft Company) document T7.TD.0000.000.13/J and all Type Design changes associated with the Major and Minor Changes approved by EASA.

### 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 Irkut Corporation (previously Sukhoi Civil Aircraft Company) 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<sup>2</sup> (902 ft<sup>2</sup>)

### 5. Engines

Two (2) PowerJet S.A. Turbofan Engine Models

SaM146-1S17 turbofan (EASA Engine Type Certificate: EASA.E.034 refers)

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)
<b>Maximum for Take-off (5 min)</b>	6814 (105%)	18523 (110%)	7684	972
<b>Maximum continuous</b>	6814 (105%)	18523 (110%)	6637	928

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

SaM146-1S18 turbofan (EASA Type Certificate EASA.E.034 refers) Installation covered by major change approval 10060566 and major change approval 10061094)

	Low Pressure Rotor Speed N1 (rpm)	High Pressure Rotor Speed N2 (rpm)	Sea Level static thrust ratings (daN)	Maximum Exhaust Gas Temperature (°C)
<b>Maximum for Take-off (5 min)</b>	6814 (105%)	18523 (110%)	7900	972
<b>Maximum continuous</b>	6814 (105%)	18523 (110%)	6637	928



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 rises up to 155°C is allowed)

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

## 6. Auxiliary Power Unit

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

## 7. Propellers

Not Applicable

## 8. Fluids (Fuel, Oil, Additives, Hydraulics)

### 8.1 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

### 8.2 Oil

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

### 8.3 Hydraulics

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

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



## 9. Fluid Capacities

### 9.1 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 LH or RH	5070	3954
<b>Total</b>	<b>15805</b>	<b>12327</b>
	Unusable fuel	
Center Tank	2	1.6
Wing tank LH or RH	21	16.8
<b>Total</b>	<b>44</b>	<b>18.4</b>

\* Fuel Density 0.78 Kilograms / Litre

### 9.2 Oil

Maximum Engine Oil Volume:	13,9 Litres per tank
Minimum Engine Oil Volume:	6,95 Litres per tank
Maximum APU Oil Volume:	4,83 Litres
Minimum APU Oil Volume:	3,55 Litres

## 10. Airspeed Limits

(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
- $V_{MCL}$  (sea level) FLAPS 3/FULL: 112 kts
- $V_{MCL}$  (sea level) FLAPS 3/FULL: 117 kts (When equipped with by major change 10060566)
- $V_{MC}$  (sea level) 117 kts
- $V_{MC}$  (sea level) 116 kts (When equipped with by major change 10060566)
- $V_{MCG}$  (sea level) 106 kts
- $V_{MCG}$  (sea level) 111 kts (When equipped with by major change 10060566)
- 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



## 11. Flight Envelope

Maximum Operating Altitude: 12200 m / 40000 ft

## 12. Operating Limitations

### 12.1 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:

- RVSM
- Visual (VFR)
- Instrument (IFR)
- Icing Conditions
- Contaminated Runway
- Low weather minima (CAT I operations and CAT II operations and CAT IIIA operations)
- Contaminated Runways
- Flexible Take-off
- Vertical Navigation (VNAV)
- RNAV1 /PRNAV /SELCAL
- Narrow Runway up to 30 m
- ADS-B OUT
- Protected Mode-Controller Pilot Data Link Communication (PM-CPDLC) ATN B1 datalink

### 12.2 Other Limitations

Airport Elevation	up to 8466 ft (2580 m) (barometric pressure)
Environmental Ground Temperature	+45/- 40°C
Maximum Crosswind (take off/landing)	30 Kts
Maximum tailwind (take off/landing)	10 Kts
Runway slope	+/- 2%

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

## 13. Maximum Certified Masses

- Maximum Ramp Weight (MRW) 46055 kg
- Maximum Take-Off Weight (MTOW) 45880 kg
- When equipped with by major change 10060566- Maximum Take-Off Weight (MTOW) 49450 kg
- When equipped with by major change 10061094 - Maximum Take-Off Weight (MTOW) 45880 kg
- Maximum Landing Weight (MLW) 41000 kg
- Maximum Zero Fuel Weight (MZFW) 40000 kg

## 14. 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

## 15. Datum

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

## 16. Mean Aerodynamic Chord (MAC)

3063mm [120.6 inches]

## 17. Levelling Means

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

## 18. Minimum Flight Crew

Two (2): Pilot and co-pilot

## 19. Minimum Cabin Crew

In accordance with the following:

Installed Passenger Seats	Minimum Cabin Crew
98	2
103	3

NOTE: The above minimum cabin crew numbers are those demonstrated by the type certificate holder. A lower number is acceptable in the case of specific cabin layouts if documented in an EASA approved major design change or Supplemental Type Certificate (STC).

## 20. Maximum Seating Capacity

The maximum number of passengers approved for the emergency evacuation is 103. (EASA Approval No. 10062135 dated 08 June 2017 refers).

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



## 21. Baggage/ Cargo Compartment

Cargo compartment (class C)	Maximum Load (kg)
Forward	1945
Aft	2255
<b>Total</b>	<b>4200</b>

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

## 22. Wheels and Tyres

### 22.1 Wheels

Nose Landing Gear: H24x7.7-10

Main Landing Gear: H40x14.5-19

### 22.2 Tires:

Nose Landing Gear: 24x7.7 R10 - 16 PR - 225 MPH

Main Landing Gear: 40x14.5 R19 - 24PR - 225 MPH

## 23. ETOPS

No ETOPS approval.

## IV. Operating and Service Instructions

### 1. Aeroplane Flight Manual (AFM)

EASA Approved Aeroplane Flight Manual referenced № M7.92.0AFM.000.000.EN

### 2. Instructions for Continued Airworthiness and Airworthiness Limitations

EASA-Approved Irkut Corporation (previously Sukhoi Civil Aircraft Company) Aircraft Maintenance Manual Chapter 04, Airworthiness Limitations Section reference No. M7.92.0AMM.004. 000.EN Revision 5 or later EASA-approved revision. (Including Certification Maintenance Requirements (CMR), Airworthiness Limitation Items (ALI), Safe Life Limits and Fuel Tank Safety.)

### 3. Weight and Balance Manual (WBM)

Irkut Corporation (previously Sukhoi Civil Aircraft Company) document with reference № M7.92.0WBM.000.000.EN .



## **V. Operating Suitability Data (OSD)**

The Operational Suitability Data elements listed below were approved by the European Aviation Safety Agency under the EASA Type Certificate EASA.IM.A.176 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014.

### **1. Master Minimum Equipment List**

The Master Minimum Equipment List applicable is defined in Irkut Corporation (previously Sukhoi Civil Aircraft Company) document M7.92.MMEL.000.000.EN Revision 14 (dated 17 December 2019) or later EASA-approved revisions.

### **2. Flight Crew Data**

The Flight Crew Data are defined in the Irkut Corporation (previously Sukhoi Civil Aircraft Company) document RRJ0000-RP-205-3294 (dated 28 April 2015) or later EASA-approved revisions.

### **3. Cabin Crew Data**

The Cabin Crew Data are defined in Irkut Corporation (previously Sukhoi Civil Aircraft Company) RRJ0000-RP-205-3322 (dated 28 May 2015) or later EASA-approved revisions.

## **VI. Notes**

### **1. Import Requirements:**

The FATA-issued Export Certificate of Airworthiness to a country of the EU 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 (latest revision) and to be in condition for safe operation."

### **2. Commercial Designations**

2.1 When equipped with the SaM146-1S18 engine, installed by major change EASA approval reference 10060566, the aircraft receive the commercial designation RRJ-95LR-100.

2.2 When equipped with the SaM146-1S-18 engine, installed by the major change EASA approval reference 10061094, the aircraft receive the commercial designation RRJ-95B-100





## **SECTION: ADMINISTRATIVE**

### **I. Acronyms and Abbreviations**

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

### **II. Type Certificate Holder Record**

Irkut Corporation, JSC  
125315, Moscow, Leningradsky Avenue, 68



### **III. Change Record**

<b>TCDS Issue</b>	<b>Date</b>	<b>Changes</b>	<b>TC Issued</b>
01	3 February 2012	Initial Issue	3 February 2012
02	10 December 2015	Update to include the following points and major changes: <ul style="list-style-type: none"><li>- OSD information</li><li>- CAT II</li><li>- High Altitude Airfield</li><li>- High Temperature</li><li>- Crosswind</li><li>- Contaminated Runway</li><li>- Flexible Take-Off</li><li>- AFM Issue B</li><li>- AMM Revision 5</li><li>- WBM Revision B</li></ul>	
03	07 March 2017	Introduction of major change 10060566 and 10061094, for installation of SaM146-1S18 turbofan engines.	
04	09 February 2021	Introduction of manual updates, FATA as new primary certification authority. Change of TC holder's name.	09 February 2021

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