



**MINISTRY OF TRANSPORT OF THE RUSSIAN FEDERATION
FEDERAL AIR TRANSPORT AGENCY**

**TYPE CERTIFICATE
DATA SHEET**

No. FATA-02023R

**Revision 08
May 17, 2019**

Models:

- Mi-171A
- = ~~Mi-171A~~1
- Mi-171A2

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Type Certificate Data Sheet No. FATA-02023R	03	14 December 2018

This data sheet forms an integral part of Type Certificate No. FATA-02023R. The data sheet prescribes conditions and limitations under which the product for which the Type Certificate was issued meets the airworthiness requirements of the Certification Basis.

Type Certificate Holder (Designer) Mil Moscow Helicopter Plant, JSC
26/1 Garshina Str., Tomilino work settlement,
Lyubertsy city, Moscow Region, Russia, 140070

Manufacturer Ulan-Ude Aviation Plant, SC
Ulan-Ude, Russia

1. Helicopter Model Mi-171A

Aircraft Designation: Model Mi-171A is approved for VFR and IFR day and night flight conditions, operations over water and land surfaces, in icing conditions, for internal passenger and cargo transportation.

Information about Initial Certification Type Certificate №132-171A dated 03.07.1997 issued by the Interstate Aviation Committee Aviation Register (IAC AR)

Aircraft Category: Transport Category A and B Helicopter

Engine: Two TB3-117BM or two TB3-117BM series 02 turbo-shaft engines (TC No. FATA-01045E)

Auxiliary power unit: APU АИ-9В

Noise Level: Noise Type Certificate No. 88 dated 01.07.97

Type Design:

- Master drawing list No.171A-000ПІІІЧ;
- Rotorcraft Flight Manual No.171A.0000.00PJIΘ dated 30.06.1997 approved by MIL MOSCOW HELICOPTER PLANT JSC General Designer, with Supplements Nos. 1-5;
- Rotorcraft Maintenance Manual No. 171A.0000.00PΘ dated 30.06.1997 approved by MIL MOSCOW HELICOPTER PLANT JSC General Designer;
- Rotorcraft Maintenance Schedule No. 171A.0000.00PO dated 30.06.1997 approved by MIL MOSCOW HELICOPTER PLANT JSC General Designer;
- Technical Specifications No. 171A.0000.00 TY. dated 01.07.1997

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**Engine power rating
(at sea level, ISA conditions):**

• Minimum take-off power:	2x 2000 h.p. (maximum for 6 minutes long)
• Minimum power at maximum continuous power conditions:	2x 1 700 h.p
• minimum 2.5-minute OEI power:	1 x 2200 h.p. maximum for 2.5 minutes long)
• minimum 30-minute OEI power:	1 x 2 000 h.p (maximum for 30 minutes long)

Rotor Limits:

Maximum main rotor speed for power-on flight no longer than 10 seconds (as indicated by main rotor tachometer):	
– For maximum continuous power conditions and upper:	101% (204.1 rpm)
– For power conditions less than maximum continuous:	103% (208.2 rpm)
Maximum main rotor speed for power-off flight (autorotation) as indicated by main rotor tachometer):	105% (212.2 rpm)
Minimum main rotor speed (as indicated by main rotor tachometer):	
In flight at transient modes with both engines operating for no longer than 30 seconds:	88% (177.9 rpm)
– With one engine inoperative, 4 times throughout service life for no longer than 10 seconds:	75% (151.6 rpm)
– At autorotation:	88% (177.9rpm) 80% (161.7 rpm) for helicopter weight less than 10000 kg and low negative ambient air temperatures
– At touchdown with pull-up of the main rotor collective pitch with one engine inoperative, 4 times throughout service life no longer than for 5 seconds:	70% (141.5 rpm)

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Airspeed Limits (IAS): 250 km/h IAS at sea level ISA on H= 0-1000 m conditions for helicopter weight less than 11100 kg

Fuel: According to the Rotorcraft Maintenance Manual

Oil:

For the engine:	According to the Engine Maintenance Manual
For the main gearbox:	Б-3В ТУ 38-101295-85
For the intermediate gearbox and for the tail gearbox:	<ul style="list-style-type: none"> - ТСГИП ТУ 38.1011332-90 - СМ-9 (mixture in proportion: $\frac{2}{3}$ ТСГИП ТУ 38.1011332-90 and $\frac{1}{3}$ АМГ-10 ГОСТ 6794-75); - «50/50» (mixture in proportion: $\frac{1}{2}$ ТСГИП ТУ 38.1011332-90 and $\frac{1}{2}$ АМГ-10 ГОСТ 6794-75).

Maximum Weight: 12 000 kg Category A
13 000 kg Category B

Minimum Weight: 7 500 kg

Fuel capacity

Main tanks	2615 liters
Left tank	1140 liters
Right tank	1030 liters
Feeder tank	445 liters
Auxiliary tank	915 liters
Unusable fuel	25 liters

Minimum Crew 4 (pilot, co-pilot, flight engineer, flight attendant.).

Note: It is allowed to carry out the flight without a flight attendant, if it is not meant for passenger transportation.

Passenger Seats: 26

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Maximum Cargo or Baggage Weight in Passenger Configuration:

2000 kg cargo and mail inside the cabin

Maximum Operating Altitude:

with passengers on board:	4200 m (according to Supplement №1, Section 6 of RFM)
without passengers on board	5000 m

C. G. Range:

Longitudinal limits:

Flight Weight less than 12 500 kg
 Forward (ahead of the main rotor axis):
 +300 mm
 Flight Weight less than 12 570 kg
 Aft (behind the main rotor axis): -95 mm
 Flight Weight 13 000 kg:
 Forward: +257 mm
 Aft: +20 mm

Lateral limits:

Lateral C.G. positions are in permissible limits and are not rated in operation.

Datum:

Station 0 is located on the main rotor axis

Ambient Air Temperatures:

from minus 40°C to plus 50°C

Certification Basis:

Basis Details:

CB 17.29 with Supplements 1, 2 and 3
 Noise requirements:
 – Aviation Regulations, Part 36, Section H;
 – The ICAO Requirements, Annex 16, Chapter 8.

Equivalent Level of Safety is established for the following CB Provisions:

- 29.807 (b);
- 29.815;
- 29.859 (b);

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- 29.923 (a)(1), (a)(2), (a)(3)(ii), (b)(2), (c), (d), (e), (f), (h), (i), (k)(1);
- 29.927 (d);
- 29.1183 (a);
- 29.1185 (a);
- 29.1191 (d), (e);
- 29.1193 (e)(3);
- 29.1194;
- 29.1201 (b);
- 29.1203 (e);
- 29.1305 (a)(9), (a)(12), (a)(15);
- 29.1321 (b)(4);
- 29.1323 (b)(1);
- 29.1353 (c)(6);
- 29.1359 (b)

For other limitations, refer to the operational documentation of Mi -171A Helicopter.

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2. Helicopter Model Mi-171A1

Aircraft Designation: Model Mi-171A1 is approved for VFR and IFR day and night flight conditions, operations over water and land surfaces, in icing conditions, for passenger and internal and external cargo transportation.

Aircraft Category: Transport Category A
Transport Category B

Data of initial certification Supplements to Type Certificate No.132-171A dated July 30, issued by Interstate Aviation Committee Aviation Register (IAC AR)

Engine: Two TB3-117BM or two TB3-117BM series 02 turbo-shaft engines (CT No. FATA-01045E)

Auxiliary power unit: APU АИ-9В

Type Design:

- Master drawing list No. 171A1-0000ППЧ;
- Rotorcraft Flight Manual No.171A1.0000.00ПІЭ dated 18.02.2005 approved by MIL MOSCOW HELICOPTER PLANT JSC General Designer, with Supplement No. 6;
- Rotorcraft Maintenance Manual No. 171A1.0000.00PЭ dated 03.03.2005 approved by MIL MOSCOW HELICOPTER PLANT JSC General Designer with Amendment No. 1 dated 30.06.2005;
- Rotorcraft Maintenance Schedule No. 171A1.0000.00PO dated 03.03.2005 approved by MIL MOSCOW HELICOPTER PLANT JSC General Designer with Amendment No. 1 dated 30.06.2005;
- Technical Specification No. 171A.0000.00TY with Supplement No.5 with Supplement No.7.

**Engine power rating
(at sea level, ISA conditions):**

minimum take-off power:	2x 2000 h. p. (maximum for 6 minutes long)
minimum power at maximum continuous power:	2x 1 700 h. p.
minimum 2.5-minute OEI power:	1 x 2 200 h. p. (maximum for 2,5 minutes long)

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minimum 30-minute OEI power:	1 x 2 000 h. p (maximum for 30 minutes long)
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Rotor Limits:

Maximum main rotor speed for power-on flight no longer than 10 seconds (as indicated by main rotor tachometer):

– For maximum continuous power conditions and upper:	101% (204.1 rpm)
– Minimum power at maximum continuous power conditions:	103% (208.2 rpm)
Maximum main rotor speed for power-off flight (autorotation) as indicated by main rotor tachometer):	105% (212.2 rpm)

Minimum main rotor speed (as indicated by main rotor tachometer):

– In flight at transient modes with both engines operating no longer than for 30 seconds:	88% (177.9 rpm)
– With one engine inoperative, 4 times throughout service life no longer than for 10 seconds:	75% (151.6 rpm)
– At autorotation:	88% (177.9 rpm) 80% (161.7 rpm for helicopter weight less than 10000 kg and low negative ambient air temperatures)
– At touchdown with pull-up of the main rotor collective pitch with one engine inoperative, 4 times throughout service life no longer than for 5 seconds:	70 % (141,5 rpm)

Airspeed Limits (IAS):

250 km/h IAS at sea level ISA on H=0-1000m conditions for helicopter weight 11 100 kg and less

Fuel:

According to the Rotorcraft Maintenance Manual

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Oil:

For the engine:	According to the Engine Maintenance Manual
For the main gearbox:	Б-3В ТУ 38-101295-85
For the intermediate gearbox and for the tail gearbox:	<ul style="list-style-type: none"> - ТС_{ГИП} ТУ 38.1011332-90 - СМ-9 (mixture in proportion: $\frac{2}{3}$ ТС_{ГИП} ТУ 38.1011332-90 and $\frac{1}{3}$ АМГ-10 ГОСТ 6794-75); - «50/50» (mixture in proportion: $\frac{1}{2}$ ТС_{ГИП} ТУ 38.1011332-90 and $\frac{1}{2}$ АМГ-10 ГОСТ 6794-75).

Maximum Weight:

12 000 kg Category A

13 000 kg Category B

Minimum Weight:

7 500 kg

Fuel capacity

Main tanks	2765 liters
Left tank	1380 liters
Right tank	1385 liters
Auxiliary tank	915 liters
Unusable tank	15 liters

Minimum Crew

4 (pilot, co-pilot, flight engineer, flight attendant).

Note: It is allowed to carry out the flight without a flight attendant, if it is not meant for passenger transportation.

Passenger Seats:

26

Maximum Internal Cargo or Baggage Weight

4000 kg

Maximum Sling Load Weight:

4000 kg

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Maximum Operating Altitude:

passengers on board:	Up to 4200 m
no passengers on board	Up to 5000 m

C. G. Range:

(a) Longitudinal limits:

Flight Weight less than 12 500 kg

Forward (ahead of the main rotor axis): +300 mm

Flight Weight less than 12 570 kg:

Aft (behind the main rotor axis): - 95 mm

Flight Weight 13 000 kg:

Forward	Aft
+257 mm	+20 mm

(b) Lateral limits:

Lateral C.G. positions are in permissible limits and are not rated in operation.

Datum:

Station 0 is located on the main rotor axis

Outside Air Temperatures:

from minus 40°C to plus 50°C

Certification Basis:

CB 17.29 with Supplement No. 4, the requirements of the RBHA 29, corresponding to FAR Part 29 including Amendments 1 through 32 effective on September 16, 1991 except RBHA/ FAR 29. 561 and 29.562 for Amendment 26, and other requirements for which CTA found necessary to provide the level of safety equivalent to the level of safety specified in the applied Brazilian requirements.

RBHA 36 corresponding to ICAO Annex 16 dated July 3, 1993, and the Equivalent Level of Safety:

- Passenger emergency exit(FCAR HES-01);
- Rotor drive system certification(FCAR HPR-01);
- Engine power indicator(FCAR HPR-02);
- Free power turbine speed indicator (FCAR HPR-03).

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Production Certification:

Production Certificate No. OИ22-ИIBC

Serial Number Eligible:

No.59489617778

For other limitations, refer to the operational documentation of Mi -171A Helicopter.

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3. Helicopter Model Mi-171A2

Aircraft Description	A single rotor helicopter with two turboshaft engines and non-retractable landing gear.
Category	Transport category A and B
Purpose	<p>Helicopter model Mi-171A2 is approved for:</p> <ul style="list-style-type: none"> - IFR and VFR flights; - Day and night; - Over land and water surface; - Along local and international airlines; - For persons transportation; - For cargo transportation inside fuselage.
Type Design	<p>Type design is specified in the following:</p> <ul style="list-style-type: none"> - Master Drawing List No.17139-0002-00 ППЧ dated 14.08.2017, No.17164-0000-00 ППЧ dated 29.01.2019(for helicopter serial number 171A02398170106U); - Mi-171A2 Rotorcraft Flight Manual No.171A2.0000.00PJIЭ dated 14.08.2017 and revisions approved later; - Mi-171A2 Maintenance Manual No.MI171A2-SAZS0-MM000 dated 14.08.2017 and revisions approved later; - Mi-171A2 Information for maintenance planning manual No. 171A2.0000.000ИПТО dated 14.08.2017 and revisions approved later; - Specifications No.171A2.0000.00TY dated 14.08.2017 and Supplement No.171A2.0000.00- 01ДТУ (for helicopter serial number 171A02398170106U); - Master Minimum Equipment List 171A2.0000.000.ПМО dated 06.05.2019.

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Certification Basis

Certification basis	Airworthiness codes	List of CB paragraphs with the established Equivalent Level of Safety (ELOS)	Special Conditions (CS)
Certification basis CB 171A2.29 approved by FATA 14.08.2017 with Supplements 1,2,4,9,10,11,12 and 15, approved by FATA, including CB 17.29 requirements.	Aviation regulations AP-29 rev. 2003; Aviation regulations AP-34; Aviation regulations AP-36.	29.855(d); 29.1203(d); 29.1321(b)(2); 29.1323(b)(1); 29.1457(c)(4)(ii); A.3 (b)(1)(2)(3)(4); Д29.2.8. 8.7.4.15.	HIRF CS; TAWS SC; GBAS and AFD SC; laser television thermal imager p. 1,2 SC; IFE SC; CS MMEL.050; CS MMEL.100; CS MMEL.105 (a)(b)(c)(d)(e)(f)(g)(h)(i)(j)(k); CS MMEL.110; CS MMEL.115; SC MMEL.120 (a)(b)(1)(2)(3); CS MMEL.125; CS MMEL.130 (a)(1)(2)(b)(c)(d)(1)(2)(3); CS MMEL.135; CS MMEL.140 (a)(b)(c)(d); CS MMEL.145 (a)(b)(c)(1)(2)(e); CS MMEL.150 (a)(b).

Noise Levels Characteristics

The helicopter meets the requirements A, O, H Part 36 Aviation regulations AP-36 Noise Standards: Aircraft Type and Airworthiness Certification, rev.2

Mi-171A2 helicopter model, TOW 13000, engines BK-2500IC-03 (2000 hp take-off power)

Flight	Climb	Level Flight	Approach
Measured value (EPNdB)	93,9	93,9	94,7
90% confidence limit	±0,7	±0,3	±0,6
Prescribed limit AP-36 (EPNdB)	98,1	96,1	101,1

Engines

2 turbo shaft engines BK-2500IC-03,
Type certificate No FATA-01045E

Fuel

PT, TC-1 GOCT 10227-86 and their mixtures with anti-icing additive:
 – «И» GOCT 8313-88;
 – «ИМ» OCT 54-3-175-73-99 0,1+0,05% capacity.
 Foreign fuel grades – see RFM.

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Oil

Engine and gearbox	<p>Domestic oil grades:</p> <ul style="list-style-type: none"> - JI3-240 TY 301-04-010-92; - Б-3В TY 38-101295-85. <p>Foreign equivalents:</p> <ul style="list-style-type: none"> - Mobil Jet Oil 254; - Mobil Jet Oil II; - Turbonycoil-35M; - Turbonycoil-98; - Turbonycoil 525-2A; - Turbonycoil 600; - Turbonycoil-699; - Castrol-98; - Castrol-599; - Castrol-5000; - BP Turbo Oil 2380; - BP Turbo Oil 25; - HP-926.
For intermediate gearbox and tail rotor gearbox	<p>Domestic oil grades</p> <ul style="list-style-type: none"> - Б-3В TY 38-101295-85; - Oil mixture «50/50» (mixture in proportion 0,5 by oil volume for hypoid gears ТСГПП TY 38.1011332-90 and 0,5 by volume АМГ-10 ГОСТ 6794-75). <p>Foreign equivalents</p> <ul style="list-style-type: none"> - Turbonycoil-98.

Engine Limitations

Takeoff power	2×2000 hp.
Maximum continuous power	2×1700 hp.
2.5-minute OEI power	1×2700 hp
30-minute OEI power	1×2400 hp

Auxiliary power unit (APU)

SAFIR 5K/G MI

Type Certificate No. CT 221-ВД dated 09.07.2003

Main Rotor rpm limitations

Maximum permissible main rotor rpm (as indicated)	
- At flight mode not exceeding 20 sec	103%
- At autorotation power off	105%
- In case of free turbine circuit breaker actuation	113%

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Minimum permissible main rotor rpm (as indicated)	
- At transient mode AEO for the time not exceeding 30 sec	88%
- One engine failure for 10 sec at most, 4 times during life limit.	75%
- At MR autorotation	88%
- At MR autorotation with in-flight weight less than 10,000 kg and low ambient temperatures (less than minus 20°C)	80%
- Pull-up landing, OEI 4 times during life limit for 5 sec at most.	70%

Maximum take-off weight 13 000 kg category A

Minimum permissible in-flight weight 8 280 kg

Speed Limits

	toat < -20 °C	toat ≥ -20 °C
Never-exceed indicated speed with in-flight weight 11 100 kg and less at altitude up to 1 000 m	250 km/h	280 km/h
Never-exceed indicated speed with in-flight weight more than 11 100 kg at altitude up to 1 000 m	230 km/h	250 km/h

Centre of Gravity Range See approved RFM

Minimum crew

- Pilot (left pilot's station);
- Co-pilot (right pilot's station).

Note: Flight attendant is included in crew while carrying passengers.

Maximum number of seats in the transport cabin 20

Maximum number of passengers

- 19 + flight attendant
- 17 + flight attendant (flights over the water surface).

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Maximum load weight transported onboard 4 000 kg

Fuel capacity

Main tanks:	2440 liters
– (left tank)	(1330 liters)
– (right tank)	(1110 liters)
Extra long-range fuel tank	915 l liters
Unusable fuel	15 l liters

Maximum Operating Altitude

With passengers, not more than	4200 m
Without passengers, not more than	6000 m

Maximum altitude for taking off and landing 3 500 m

Outside Air Temperatures From minus 50°C to plus 50°C

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4. Additional Information:

Note. Information is pertinent to Mi-171A and Mi-171A1

Operating the helicopter under natural icing conditions is allowed at ambient air temperature not lower than minus12°.

List of data sheet changes

Data sheet revision	Date	Description	Applicability
01	03.06.97	Initial issue of Mi-171A model.	Mi-171A
02	05.04.05	KAY-115 single-chamber hydraulic actuator is replaced with KAY-80B two-chamber hydraulic actuator. The fuel system design is modified	Mi-171A1
02 rev.01	05.04.05	The helicopter transport version for cargo transportation up to 4 000 kg inside fuselage or up to 4 000 kg with external sling	Mi-171A1
03	27.03.07	The equivalent level of safety requirements changed.	Mi-171A1
04	07.12.09	Minimum crew is changed	Mi-171A1
01*	14.08.17	Model Mi-171A2	Mi-171A2
02	15.10.18	Extension of operating characteristics for low temperature operations	Mi-171A2
03	14.12.18	Helicopter operation at high mountain airports and airfields	Mi-171A2
04	17.12.18	Extension of operating characteristics for high temperature operations	Mi-171A2
05	28.12.18	Installation of equipment of reception and transformation of differential data	Mi-171A2
06	01.02.19	Bringing KBO-17 (onboard equipment suit) up to full functions	Mi-171A2
		Installation of high comfort cabin interior (VIP-cabin)	Mi-171A2
07	16.05.19	Modification of Section 04 of the Airworthiness Limitations of the Maintenance Manual	Mi-171A2
08	17.05.19	Master Minimum Equipment List	Mi-171A2

*- type certificate and data sheet are re-issued by Federal Air Transport Agency

Note: Other limitations are contained in the approved operating documentation of the helicopter.

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*Original in Russian is signed by
Alexey Novgorodov
Deputy Director General*