

Mi-8 / MSB 8

Helicopter programme | Technical presentation



A technical presentation of the MSB 8 programme, supplied for a Mi-8 enquiry. The document does not identify an individual helicopter offered for sale.

Technical reference

Pricing, legacy commercial terms and private booking information are excluded where present.

MSB 8

Technical Data





Fire fighting with Bambi-Bucket

Refilling fire extinguishing agent bucket

A low-angle shot of a helicopter in a blue sky with scattered clouds, hoisting a large, dark tree trunk. The helicopter is positioned in the upper right, with its rotors blurred. A thin cable extends from the helicopter down to the tree trunk. The tree trunk is being lifted from a dark, forested mountain slope in the lower left. A horizontal white line is positioned below the text 'The 5 Star Helicopter'.

The 5 Star Helicopter

1

SAFETY

2

PERFORMANCE

3

POWER

4

DEDICATION

5

PASSION

On October 10, 2018, Cyprus Aircraft Leasing delivered the first MS 8 with European certification. This Ukrainian built helicopter is inspired by the proven historic Mi-8 series. It is powered by two modern Motor Sich TV3-117VMA-SBM1V 4E engines with 1,100 kW (1,500 hp) each.

The MS 8 has a maximum take-off weight of 12,000 kg (26,500 lbs) and a payload of 4,000 kg (8,800 lbs) internally or externally. The cabin has room for 22 passengers plus equipment and it features large clamshell rear doors.





With a ceiling of 9,150 meters (30,019 ft), the MS 8 holds the world altitude record in its class. The single-engine-altitude is 5,000 meters (16,400 ft). The helicopter can take off under full power at ambient temperature up to 55° Celsius (131° F).

The historic Mi-8 series is a standard helicopter for UN organizations for missions in remote areas and high temperature regions. The German Bundeswehr uses the older Mi-8 version for logistical support in Mali and Afghanistan. The exceptional hot-and-high performance is an enormous operational advantage. While other helicopters need to reduce their payload, the new MS 8 can still take off with 4 tons on board.

Vertical Take-Off and Landing (VTOL)

General Certification

The procedure for T/O and landing on offshore helidecks complies with requirements of EU-OPS and EU-OPS sub-category H and describes the VTOL procedure CAT A for the helicopter MS 8.

The MS 8 is certified as a multi-engine helicopter for CAT A and meets the requirements for Helicopter Flight Performance Class 1 according to EU-OPS.

(Reference: CZ-ZOLZ-6398)

Definitions:

CAT A

A multi-engine helicopter designed with engine and system isolation features and a helicopter flight performance based on a critical engine failure concept, which assures adequate performance capability for a continued safe flight in the event of an engine failure.

Performance Class 1

In the event of a critical power unit failure, the helicopter is able to land within a rejected, available takeoff distance, or safely continue the flight, depending on the circumstances of power loss.



Takeoff decision point (TDP)

The point used in determining takeoff performance from which, a power-unit failure occurring at this point, either a rejected takeoff may be made or takeoff safely continued (ICAO). Applies to performance class 1 helicopters only.

Landing decision point (LDP)

The point used in determining landing performance from which, a power-unit failure occurring at this point, the landing may be safely continued or balked landing initiated (ICAO). Applies to performance class 1 helicopters only.

Rearward T/O distance

Distance for takeoff, which is available to complete the takeoff in addition to the helicopter dimensions.

Continued Landing Distance

The additional horizontal distance required for a helicopter to land with one inoperative engine and come to a complete stop on the landing surface.

Helideck (elevated)

A stable landing deck on a floating sea base.

MS 8 Operational Parameters

Engine type	TV3-117VMA-SBM1V, series 4E	
Engine take-off power rating	2x 1,500 hp	
Engine starting system	Electric	
Service ceiling - with take off weight of 9,000kg or less	7,300 m	23,950 ft
Hourly fuel consumption with standard take-off weight at 1,000 m (at indicated airspeed of 180 km/h)	500 kg/h	1,102 lb/h
Maximum take-off weight	12,000 kg	26,000 lbs
Standard take-off weight	11,100 kg	24,471 lbs
Maximum weight of cargo transported in the compartment (due to fuel quantity reduction)	4,000 kg	8,819 lbs
Maximum weight of cargo transported on external load (due to fuel quantity reduction)	4,000 kg	8,819 lbs
Cruise speed at a height up to 1,000 m: - with standard take-off weight - with maximum take-off weight	km/h 220 - 250 205 - 215	kts 119 - 135 111 - 116
Maximum speed at a height up to 1,000 m	280 km/h	151 kts
Practical range with 10,000 kg take-off weight at 3,000 m (with fuel weighting 1,450 kg)	550 km	297 nm
Practical range with standard take-off weight at 3,000 m with two extra fuel tanks (with fuel weighing 2,500 kg)	1,210 km	653 nm
Minimum temperature	- 35 °C	
Maximum temperature	ISA (max)	+ 35 °C + 55 °C

Main Characteristics of TV3-117VMA-SBM1V Series 4E, Engine

2.5-min OEI power rating

Continuous OEI 1 power rating

60-minute (Cont 1) (H=0, Mfl=0, ISA +20°C):

Power	1,700 (1,251) hp (kW)
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Continuous OEI 2 power rating

60-minute (Cont 2) take-off power rating

Continuous take-off power rating (30 min) (H=0, Mfl=0, ISA):

Power	1,500 (1,104) hp (kW)
Flat-rating temperature	+ 55 °C
Specific fuel consumption	0.251 kg/hp·h

Maximum continuous power rating

(H=0, Mfl=0, ISA):

Power	1,200 (883) hp (kW)
Flat-rating temperature	+ 60 °C
Specific fuel consumption	0.266 kg/hp·h

Cruise power rating

(H=0, Mfl=0, ISA):

Power	1,000 (736) hp (kW)
Flat-rating temperature	+ 60 °C
Specific fuel consumption	0.280 kg/hp·h
Engine dry weight	295 kg

Avionics / Flight Instruments

Avionics / Flight instruments allow day and night flights under difficult meteorological conditions according to the instrument flight rules (IFR) taking ICAO requirements into account.



- Landing according to the 1st category using systems NDB, ILS, VOR, DME and marker beacon;
- Non-precision approach based on satellite navigation data GPS;
- Flying under area navigation conditions B-RNAV (RNP-5);
- Flying in vertical separation system with a warning indication of deviations from selected altitude;
- Preprogramming of the flight plan;
- Flying search-and-rescue operations;
- Flying low-altitude day or night in unknown unmarked areas, including mountainous areas, under ordinary and difficult meteorological conditions using the information received from HTAWS;
- Automatic flight data transmission to AT controller;
- Automatic flight data transmission to air traffic participants to take joint measures for collision prevention;
- Providing external communication in the VHF range within frequency spectrum of 8.33/25 kHz, internal communication between crew members, public address and communications between passengers and crew members;
- Providing external communication in the HF range;
- Providing monitoring of helicopter position and satellite communication

Avionics Composition

The Supplementary Type Certificates (STC) were obtained for all equipment of the MS 8 helicopter:

GTN650/750

Multifunctional navigation and communication equipment;

SN3500H

Terrain Awareness and Warning System;

KN63

Radio distance measurement equipment with indicator;

ADF3502

Automatic radio compass;

MKR3300

Marker beacon receiver;

RDR2100

Meteo-navigation radar station;

KVG-350

Vertical gyro;

EX600

Multifunctional radar indicator;

KT-76C

ATC transponder;

MDU-268

Multifunctional displays;

AD32

System for air data measurement, indication and warning of deviations from selected altitude;

AGB-3K

Gyro horizon;

Almaz-UP

Airborne equipment for voice warning system;

Aerox

Oxygen equipment;

Artex C406-1HM

Emergency Location Transmitter (ELT);

DK140

Hydroacoustic beacon;

CAS67A

Traffic collision avoidance system;

BAS-V

Centralized warning system;

DVCS6100

Digital voice communication system;

ISAT200A

Satellite communication and position monitoring system;

IC-F8100

Communication radio;

DF-935

Radio equipment for orientation;

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Emergency operational flight (FDR) and voice recorder (CVR).