I'M AERO

UTILITY HELICOPTER

Ka-62

Technical description

Contents:


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1. General information

The new Ka-62 medium-class utility helicopter embodies the latest achievements in the world's aviation industry. Ka-62 complies with Russian and international airworthiness requirements (AP-29, CS-29, JAR-OPS3), rules of offshore operations, international standards in reliability, service life, flight safety, comfort conditions, maintenance and serviceability.

Wide range of helicopter missions

- transportation of passengers, including in the conditions of enhanced comfort;
- internal and external cargo transportation;
- patrolling and environmental monitoring;
- search and rescue;
- emergency medical evacuation;
- flight personnel training;
- offshore operations for oil industry.

Wide range of operating conditions

- the helicopter is designed for performing flights under visual flight rules (VFR) and instrument flight rules (IFR), during day and night, above land and sea, in icing conditions within the ambient temperature range from –50°C to +50°C;
- at temperatures up to –35°C the helicopter is operated without preheating of assemblies and engines;
- the helicopter is cleared for landing approach in adverse weather with a weather minimum of up to 30x350 m;
- operation in all geographical regions;
- the helicopter is cleared for operation from aerodromes/pads with hard-surfaced pavement and from unpaved sites with soil density not less than 4 kg/cm², with a maximum gradient of 5°.

1. Avionics bay
2. Retractable tailwheel landing gear
3. Transmission
4. Bird-resistant windshield
5. Spacious luggage compartment
6. Fan-in-fin multiblade rotor
7. Vertical fin stabilizer
8. Five-blade main rotor
9. Ardiden 3G turbo shaft engines
10. Shock absorbing seats

2. Flight performance
Flight performance (metric)

WEIGHT AND DIMENSION PARAMETERS	
MTOW, kg	6,800
Normal take-off weight, kg	6,500
MR diameter, m	13.8
Main rotor with 4th-gen blade profiles	5 blades
TR diameter, m	1.4
Fan-in fin tail rotor	12 blades

ENGINES (2 x Ardiden 3G equipped with dual channel Full Authority Digital Engine Control (FADEC))	
Take-off rating (5 min), kW	2 x 1,306
Maximum continuous rating (unlimited), kW	2 x 1,137
Power with OEI (2.5 min), kW	1 x 1,427
Continuous power with OEI, kW	1 x 1,306
Continuous take-off power (30 min), kW	2 x 1,306

FLIGHT PERFORMANCE (ISA)	normal take-off weight	maximum take-off weight
Service ceiling, m	6,100	5,500
Hovering ceiling (OGE), m	3,200	2,740
VNE, km/h	310	300
Cargo capacity at the external sling, kg	2,500	
Cruise speed at max continuous rating, km/h	290	285
Rate of climb, m/s	14	12
Flight range (Vecon, standard fuel, no reserve), km	760	720
Ferry range (standard fuel plus auxiliary fuel tanks 60 l, no reserve), km	1,135	1,035
Max endurance (standard fuel, no reserve), h	4	3.7

FUEL CAPACITY	
Total capacity, l	1,515
Unusable fuel, l	20

FUEL	
Fuel brand	Standard
PT-1	GOST-10227-86
TC-1	GOST-10227-86
Jet a-1	DEF STAN 91-91
No.3 Jet Fuel	GB 6537-2006

Flight performance (imperial)

WEIGHT AND DIMENSION PARAMETERS	
MTOW, lb	14,991
Normal take-off weight, lb	14,330
MR diameter, ft	45.27
Main rotor with 4th-gen blade profiles	5 blades
TR diameter, ft	4.59
Fan-in fin tail rotor	12 blades

ENGINES (2 x Ardiden 3G equipped with dual channel Full Authority Digital Engine Control (FADEC))	
Take-off rating (5 min), hp	2 x 1,776
Maximum continuous rating (unlimited), hp	2 x 1,546
Power with OEI (2.5 min), hp	1 x 1,940
Continuous power with OEI, hp	1 x 1,776
Continuous take-off power (30 min), hp	2 x 1,776

FLIGHT PERFORMANCE (ISA)	normal take-off weight	maximum take-off weight
Service ceiling, ft	20,013	18,044
Hovering ceiling (OGE), ft	10,500	8,990
VNE, knots	167	162
Cargo capacity at the external sling, lb	5,511	
Cruise speed at max continuous rating, knots	157	154
Rate of climb, fpm	2,756	2,362
Flight range (Vecon, standard fuel, no reserve), nm	410	388
Ferry range (standard fuel plus auxiliary fuel tanks 60 l, no reserve), nm	613	559
Max endurance (standard fuel, no reserve), h	4	3.7

FUEL CAPACITY	
Total capacity, gal	333,25
Unusable fuel, gal	4.4

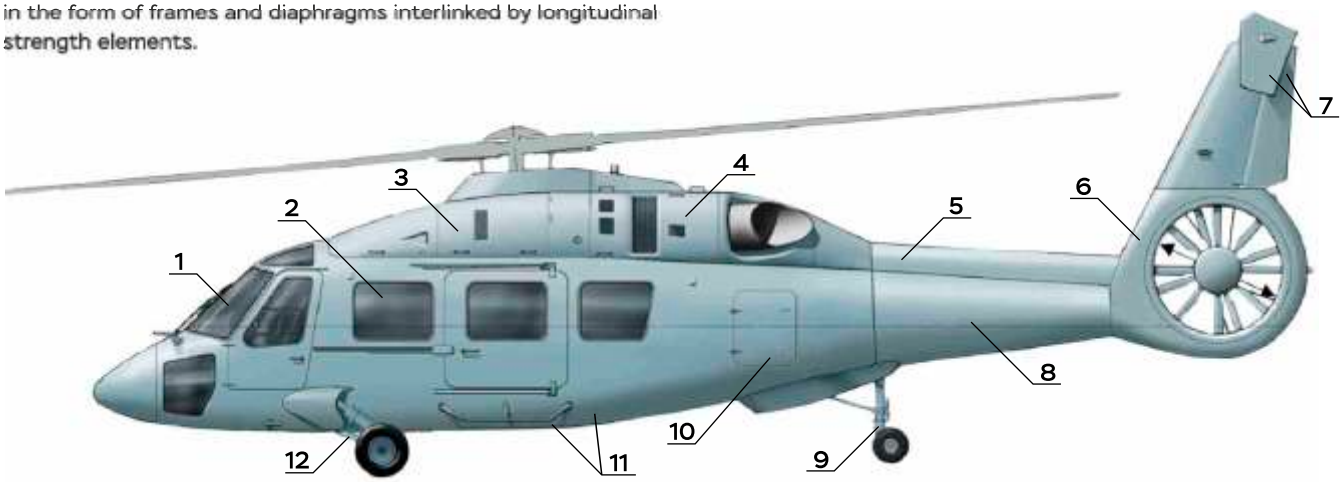
FUEL	
Fuel brand	Standard
PT-1	GOST-10227-86
TC-1	GOST-10227-86
Jet a-1	DEF STAN 91-91
No.3 Jet Fuel	GB 6537-2006

3. Design features
3.1 Fuselage and cockpit

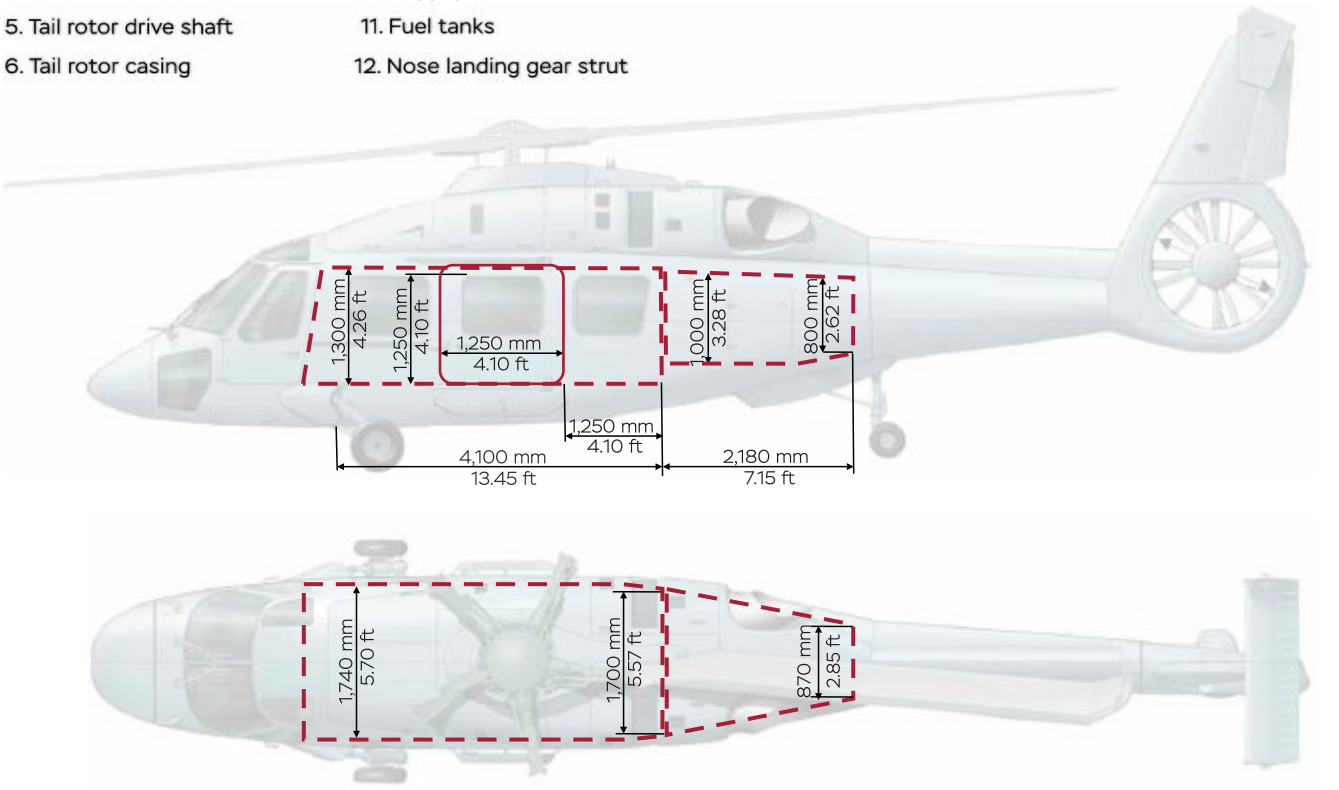
The helicopter fuselage has a semi-monocoque design. The outer fuselage contours are formed by large-sized polymeric composite material panels.

60% of the fuselage structure is made of polymeric composite materials. Panels are mounted on metal elements of framework in the form of frames and diaphragms interlinked by longitudinal strength elements.

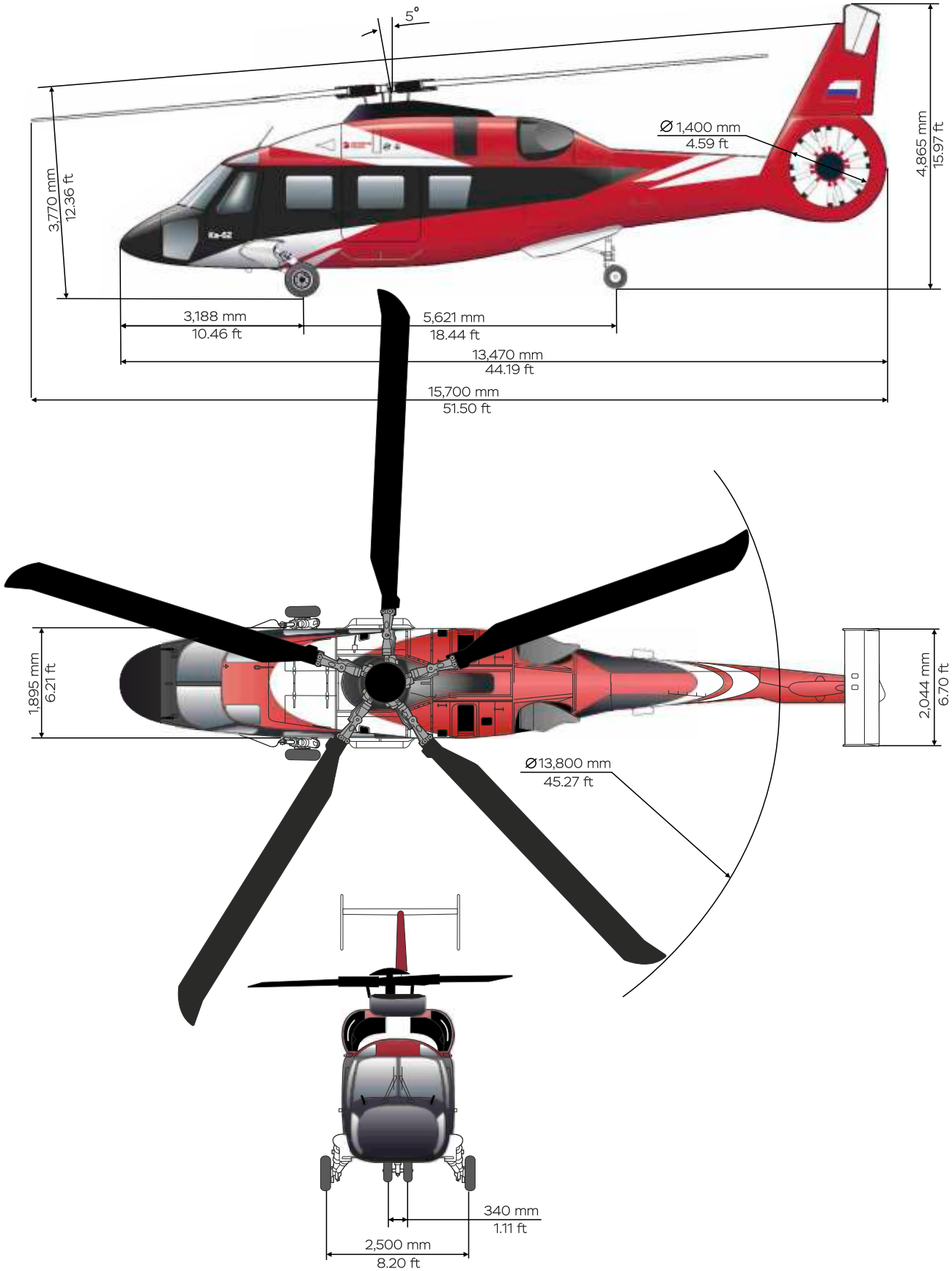
Components which bear high concentrated loads are made of titanium alloy. For corrosion resistance, all parts of the airframe are protected by coating systems individually selected for each type of material and approved by VIAM (All-Russian Research Institute of Aviation Materials).



1. Cockpit
2. Transport cabin
3. Main gearbox
4. Engine
5. Tail rotor drive shaft
6. Tail rotor casing
7. Empennage
8. Tail boom
9. Rear landing gear strut
10. Luggage compartment
11. Fuel tanks
12. Nose landing gear strut



3.1 Cabin and luggage compartment dimensions



3.2 Ka-62 helicopter. Main dimensions

3.2 Landing gear

The helicopter features a tail-wheel retractable landing gear absorbing impact energy during helicopter landing and taxiing on unpaved, concrete and special runways with a soil density not less than 4 kg/cm². The landing gear consists of two main struts and one tail strut that can partially retract into the fairings in flight for the reduction of aerodynamic resistance. The main LG wheels are fitted with brakes. The LG design ensures increased shock absorbing capability during a crash landing.

3.3 Wheel landing gear with increased shock absorbing capability

3.3 Engines

The helicopter power plant consists of two new-gen Ardiden 3G turboshaft engines by Safran HE, France. The engine has modular design comprising 3 modules (assemblies gearbox, gas generator, power turbine). The engine features two independent shafts: the shaft of compressor and gas generator turbine and the power turbine output shaft. Each engine is equipped with dual channel Full Authority Digital Engine Control (FADEC). Engine startup is electric. Air intake is effected through the radial-type air intake.

3.4 Rotor system

The helicopter is fitted with a five-blade main rotor with elastomeric bearings and a 12-blade fan-in-fin tail rotor. Main rotor blades are made of polymeric composite materials with swept tip to improve aerodynamic quality and reduce the noise from the main rotor. The blades are equipped with electro thermal anti-icing system.

3.4 Fan-in-fin tail rotor

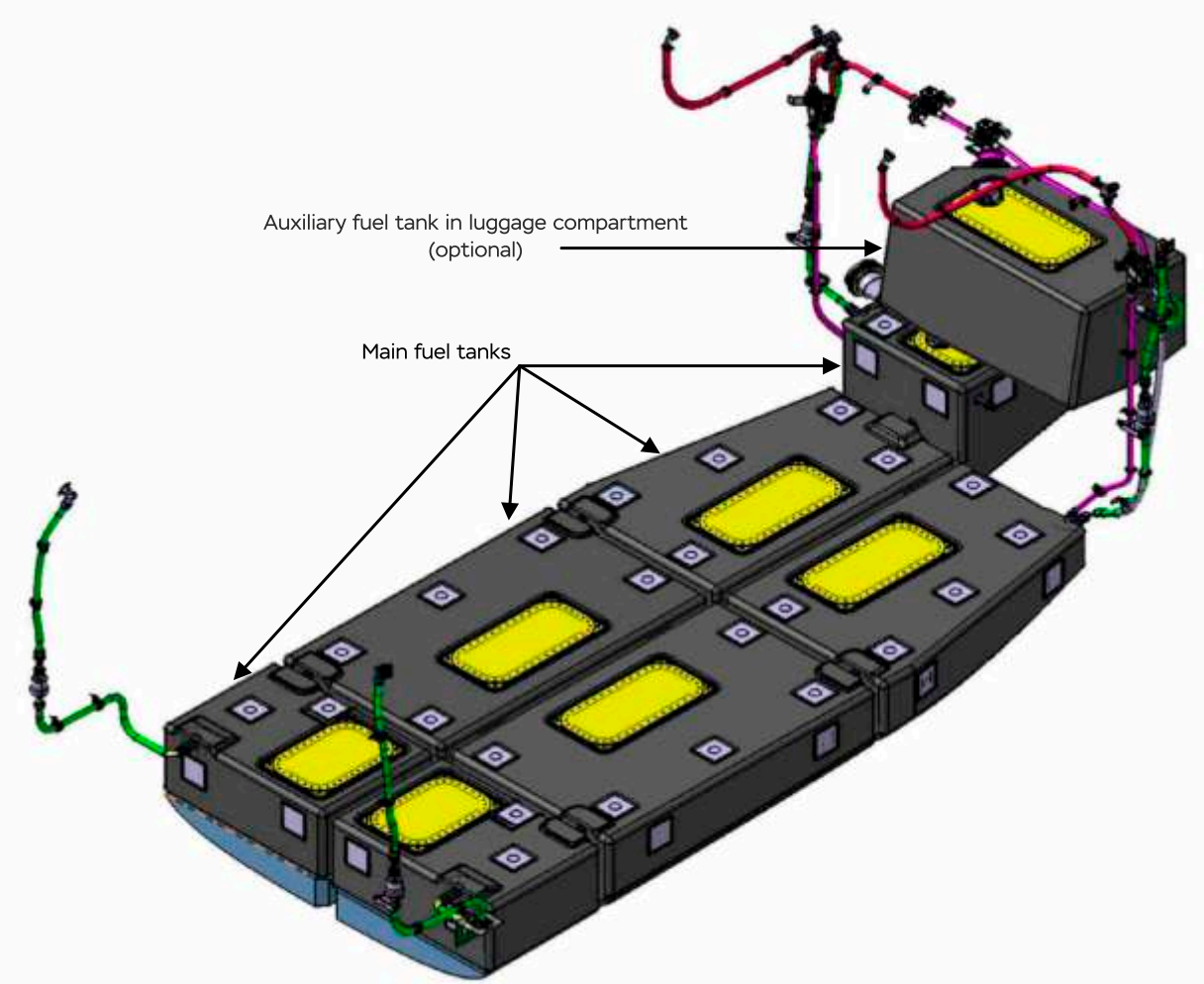
3.5 Fuel system

The helicopter is fitted with crashworthy fuel system by **SAFRAN AEROSYSTEMS**. The fuel system is designed and successfully tested as per the AP-29/CS-29/FAR-29 requirements.

To increase flight range, the luggage compartment can fit an additional crashworthy fuel tank with capacity up to 200 liters. In ferry configuration two more auxiliary tanks can be installed in the transportation cabin (option).

The system comprises the following key elements:

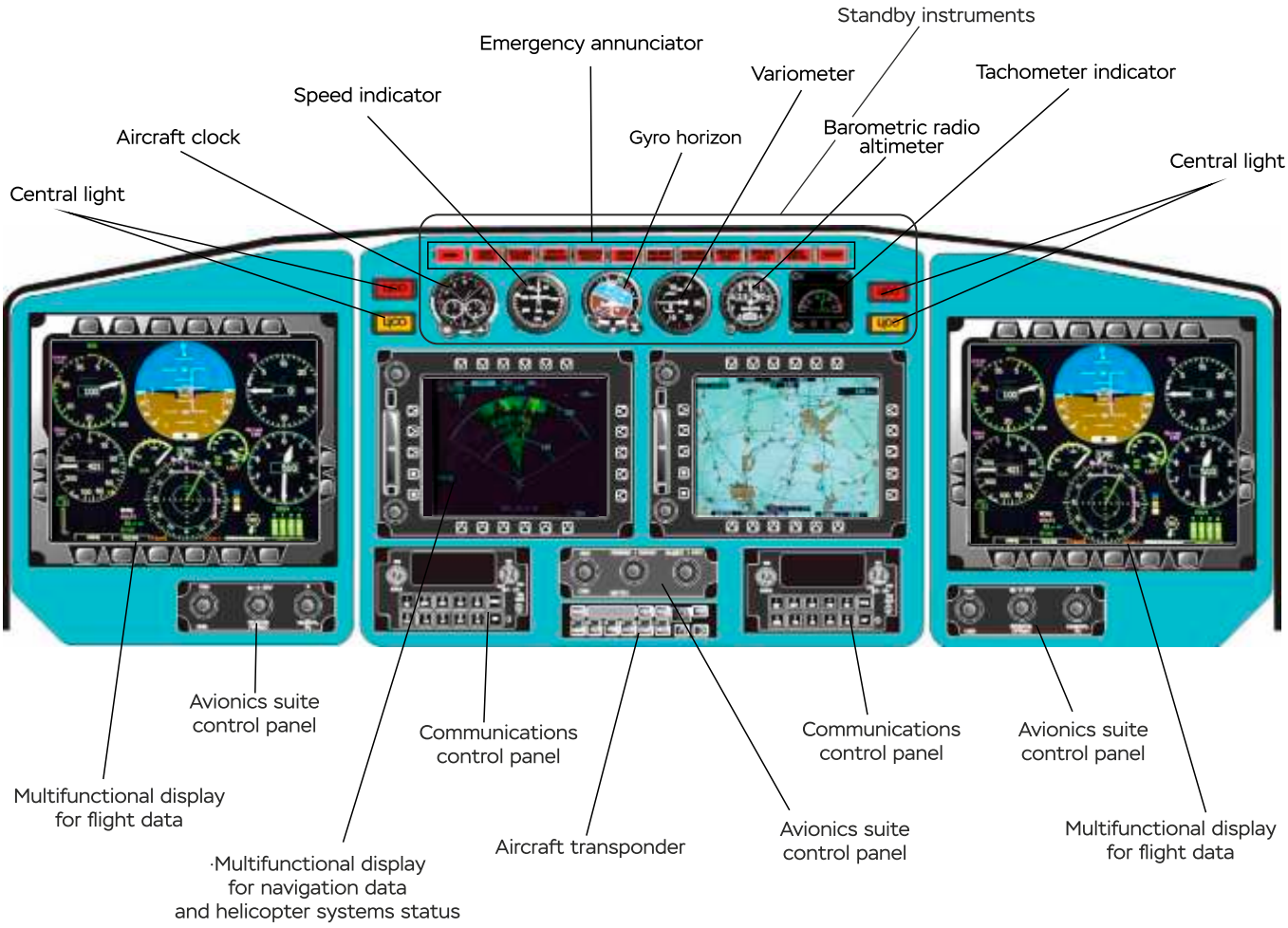
- seven fuel tanks divided in two independent fuel sub-systems;
- system of gravity fueling (pressure fueling as an option);
- feed line from service tanks to engines;
- fuel transfer pipelines;
- fuel sediment drain electric valves;
- fuel level sensors in each tank;
- low fuel level indicator.



3.5 Ka-62 fuel system diagram

4. Avionics suite
4.1 Instruments

Crew cockpit accommodates: instrument panel, overhead panel, central console. The instrument panel consists of left, central and right parts. The controls, displays and alarms that the crew uses in flight are located on the instrument panel, the overhead panel and the central console. Some of the controls are on the collective pitch control stick and on the cyclic pitch control stick. The left and right parts of the instrument panel have multifunctional displays (MFDs) for output of flight control and navigation data to the pilot. The central part of the instrument panel accomodates: emergency light annunciators, reserve MFDs for output of data about operation of the power plant and other helicopter systems and control panels for radio communication and flight and navigation equipment. The central console is between the pilot seats. The internal cockpit and transportation cabin lighting is white. There is a provision to adjust brightness of control panels, MFDs and standby instruments including day/night modes. Lighting in the transport cabin is controlled from crew cockpit.



4.1 Central console

3.6 Power supply system

The main power supply system provides direct current.

Main sources of DC:

- two starter-generators with a capacity of 8.5 kW installed on the engines with GCUs. Provide engine startup and connect to corresponding buses of central distribution devices;
- two storage batteries with a capacity of 40 Ah installed in two battery compartments located under the nose fairing. Storage batteries' capacity is enough to power Cat-1 consumers for at least 30-min flight in case of power generating system failure;
- switch and security blocks of General Helicopter Equipment Management System (SUOVO-S) perform the functions of secondary distribution circuit;
- standby storage battery is designed for powering standby instruments and UHF1 radio station for safe flight completion and landing in case of main DC sources failure.

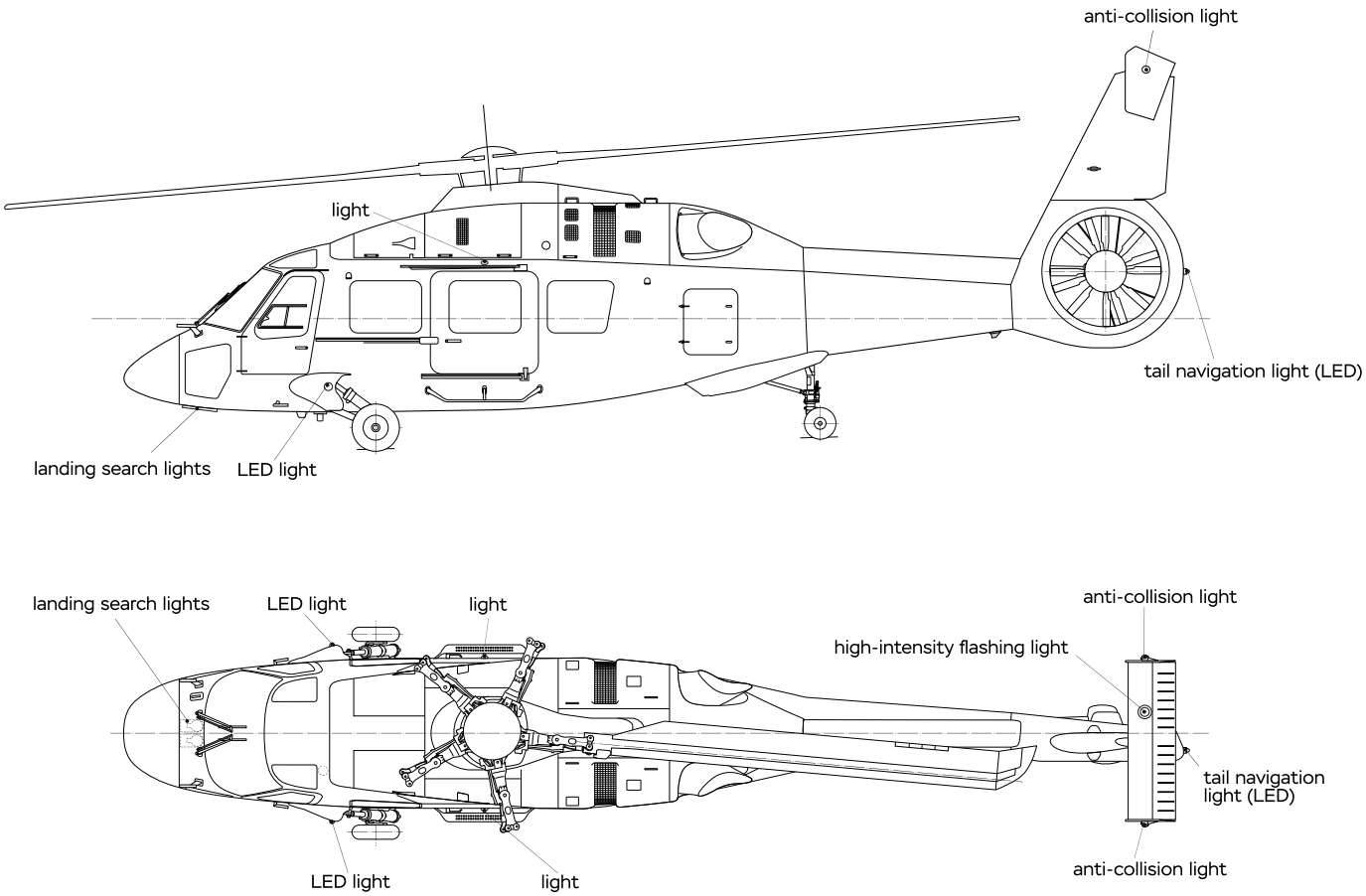
  AC system is installed in combination with high-power AC consumers (such as heating elements of the helicopter anti-icing system and so on).

Main sources of AC:

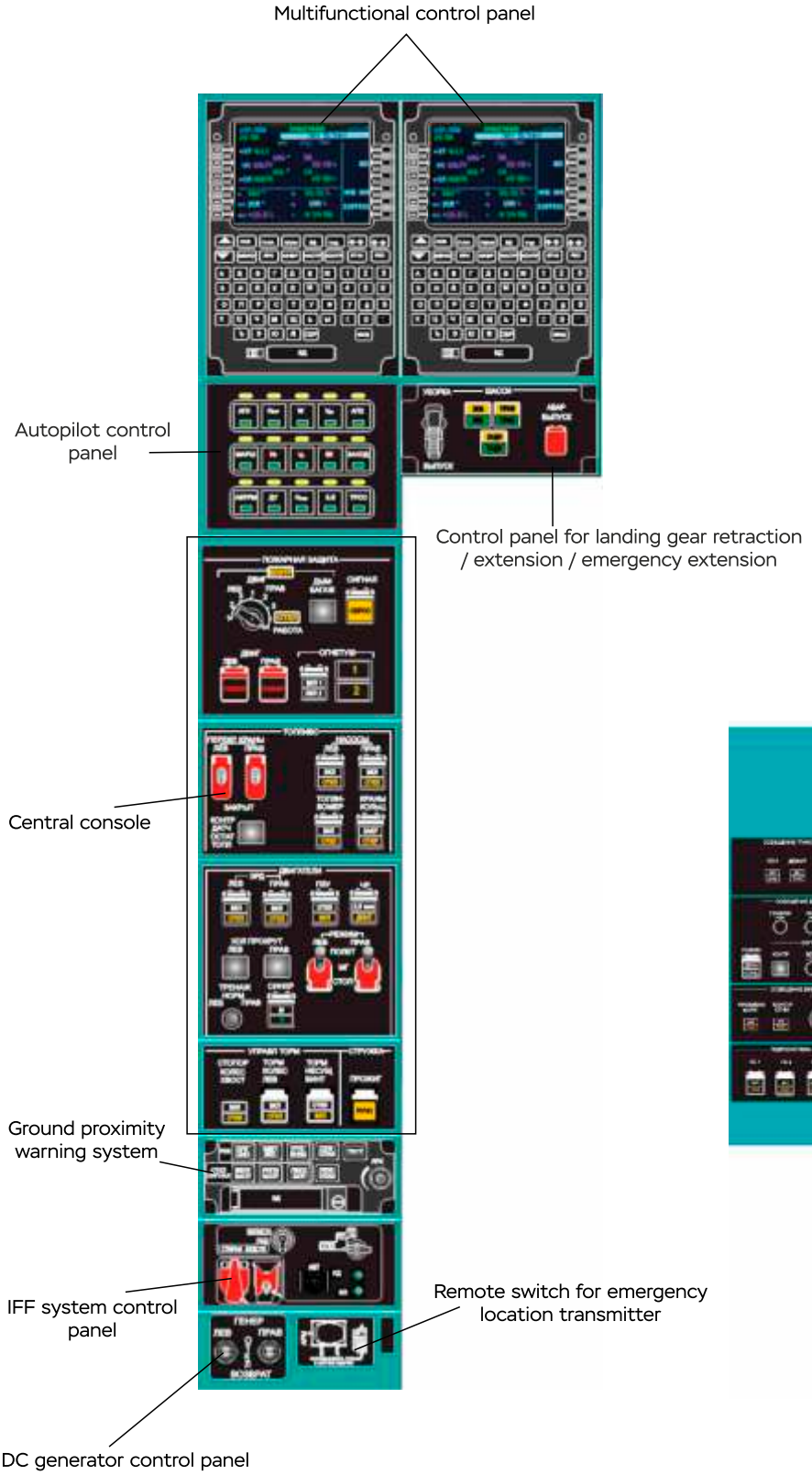
- two three-phase AC generators with a capacity of 30 kVA each installed on the main gearbox wheelcase.

3.7 Lighting equipment

Lighting equipment ensures the performance of flights round-the-clock. Internal and external lighting equipment is LED-based and complies with modern requirements of Russian and foreign airworthiness regulations. Emergency lighting sources have independent power supply. The helicopter is fitted with two landing search lights with independent control, light to illuminate cargo at the external sling (option, subject to external sling availability), navigation lights (red on portside, green on starboard), five blade tip lights, two red-color anti-collision lights, cabin and emergency lights.



3.6 External lighting diagram



4.2 Central console

4.3 Overhead panel

4.2 General Helicopter Equipment Management System (SUOVO-S)

General Helicopter Equipment Management System is designed for implementation of general helicopter equipment automatic control modes.

SUOVO-S performs the following tasks:

- control of helicopter systems in automatic and manual modes;
- automation of decision-making in case of pre-emergency situations in controlled equipment;
- diagnostics of interfaced equipment and generation of data to localize failures;
- status display and failure alarm for interfaced equipment at crew stations;
- control of its own running hours and service life to provide SUOVO operation on-condition;
- control of backup actuators in emergency mode directly from the controls on the pilot control panel;
- automatic advanced preflight equipment testing with indication of the faulty structurally replaceable unit;

SUOVO equipment controls and manages the following

- general helicopter systems:
- electrical power supply system;
- air conditioning system;
- heating and ventilation system;
- fire protection system;
- fuel system;
- anti-icing system;
- internal and external lighting system;
- engine startup and control system;
- hydraulic system;
- transmission.

To perform these functions, SUOVO is based on a distributed architecture of general helicopter systems principle with the use of integrated modular avionics technology.

SUOVO composition:

- 2 system computer units;
- 8 remote signal concentration units;
- overhead panel;
- central console;
- 6 commutation and protection units;
- Commutation and protection units control panel (ground equipment).

4.3 System of operating controls (SOOU-62)

SOOU-62 is an integrated system of controls located on HOCAS-type helicopter control sticks. The system is fully digital with high reliability and long service life. If required, functions of the controls can be reprogrammed without changing the stick design.

4.4 Radio communication equipment

Radio communication equipment is designed for performing two-way radio communication between the flight crew and ground control points, between crews of several aircraft in flight, for in-flight communication between crew members, alerting passengers and sending a distress signal from the emergency landing or ditching location.

Radio communication suite provides:

- simplex radiotelephone communication of the flight crew with ground ATC and crews of other aircraft within radio line of sight up to 120 km range via two channels of VHF band;
- simplex radiotelephone communication of the flight crew with ground ATC and crews of other aircraft via one channel of HF band;
- interphone communication between crew members and with passengers (if required) as well as with support crew;
- announcements through loudspeaker system for cargo (passenger) cabin;
- continuous reception of distress signals at 121.5 MHz emergency frequency.

4.5 Baseline avionics suite

Ka-62 helicopter is fitted with a KBO-62 baseline avionics suite. The KBO-62 suite is designed for helicopter piloting and navigation and enables performance of VFR and IFR flights.

Coupled with the other on-board systems, KBO-62 must provide the following functions:

- continuous automatic calculation of current helicopter coordinates and their indication;
- automatic (continuous) or manual (intermittent) correction of calculated helicopter coordinates based on the data from the satellite navigation system;
- manual correction of calculated coordinates based on visual landmarks during flyover. At least three landmarks must be able to be stored in memory for each flight program;
- automatic pre-flight check of KBO-62 operability, identification and indication of faulty units and digital connections;
- formation of integral signal about KBO-62 flight readiness;
- use of air navigation database on removable storage with capability to record data on this storage on the ground;
- memory storage of up to 1 000 waypoints and at least 20 flight routes, each 20 to 30 waypoints, as well as the air navigation database. Automatic and manual input, recording and memory storage of at least 20 flight routes and special maneuvering trajectories, including total of at least 6 airfields and 99 waypoints;
- initial setting of heading by gyrocompassing;
- manual correction of heading via multifunctional control panel (MFCP);
- input and storage of coordinates for ten operating navigation points:
  - at flyover;
  - via MFCP input;
- Calculation and output of the following information to crew (on demand):
  - remaining distance to any waypoint, either en-route flight distance or shortest distance;
  - estimated time of arrival to any waypoint, as well as estimated time of arrival to any checkpoint or to any landing airfield (at current ground speed at least 70 km/h);
  - remaining flight range and time in current flight mode based on the remaining fuel (incl. one engine inoperative (OEI) flight);
  - remaining fuel upon reaching any waypoint;
  - text warning to crew about reaching waypoints and entry to airfield zones;
- operating change of flight program (via MFCP);

  automatic (using air navigation database) and manual (via MFCP) control of radiotechnical navigation and landing systems, as well as VHF radio stations;
- output of flight and navigation data to crew in text and symbol formats via MFDs, electromechanical indicators and emergency warning system (EWS) light panels;
- output of horizontal situation against the background of the digital terrain map;
- calculation and warning of terminal values for roll, pitch and indicated airspeed;
- formation and indication of director control signals;
- formation and output of failure signals to the on-board data acquisition, monitoring and registration system as per the approved signal list for FDR registration;
- determination of the helicopter position en route and in airfield zone:
  - in inertial tracking mode, based on the data from the attitude and heading reference systems;
  - in satellite navigation correction mode;
- formation, warning and indication of notification, alarm and emergency messages;
- automatic and automated monitoring of the technical status, operating parameters and modes of the onboard equipment suite with formation and indication of the monitoring results to the onboard registration systems;
- automated performance of pre-flight preparation procedures.

5. Baseline version specification

FUSELAGE

- Nose section
- Mid-fuselage
- Tail boom
- Tail rotor frame
- Tail fin with vertical and horizontal empennage

POWER PLANT, TRANSMISSION

- 2 x Ardiden 3G turbo shaft engines
- Main gearbox
- Tail gearbox
- Two main shafts
- Tail shaft

ROTOR SYSTEM

- Main rotor hub
- 5 blades of main rotor
- 12-blade tail rotor
- Swashplate

FUEL SYSTEM

- 7 soft multi layered tank
- Basic gravity fueling system
- Fuel control and measurement system
- Pumps
- Complex of pipelines and valves

LANDING EQUIPMENT

- Retractable tail-wheel landing gear

CONTROL SYSTEM (fully-powered, non-reversible, with push-pull control linkage)

- Flight controls
- Elements of steering linkage
- Trim steering actuators with sensors in each one of four control channels
- Combined control units (one three-channel and one single-channel)

ELECTRICAL POWER SUPPLY SYSTEM

PRIMARY DC POWER SUPPLY SYSTEM, 27V

- 2 starter-generators mounted on the engines
- Starter generator control units
- Current transformers
- Inverter
- 2 batteries
- 2 central distribution devices
- SUOVO units

EMERGENCY POWER SUPPLY SYSTEM

- 2 storage batteries
- Independent standby power source for standby instruments group

COCKPIT EQUIPMENT

- Cockpit cladding
- Instrument panel
- Overhead panel, central console
- 2 crew seats
- Outside air thermometer
- Ventilation device
- General lighting
- Air duct grids for heating and ventilation system, individual air outlets
- Heat and sound insulation
- Fire extinguisher
- Bird-resistant windshield
- 2 doors with emergency jettisoning function

HYDRAULIC SYSTEM

- Independent hydraulic system No. 1
- Independent hydraulic system No. 2

OIL SYSTEM

- Main gearbox oil systems
- Engine's oil systems (autonomous)
- Tail gearbox oil systems

ENGINE AND MAIN ROTOR BRAKE CONTROL

- 2-channel FADEC-type electronic engine control system
- Mechanisms installed on main gearbox frame

FIRE PROTECTION SYSTEM

- Fire-proof partitions and engine bays cowlings
- Fire detecting system
- Fire extinguishing system in engines' bays
- 1st and 2nd stage fire extinguishers

AIR-CONDITIONING AND VENTILATION SYSTEM

- Section of air bleeding from engine compressors
- Pipeline of air feed in the cockpit and transport cabin
- Controls and warnings
- Section of storage batteries' heating

EMERGENCY RESCUE EQUIPMENT

- Fire extinguisher
- Means if light and sound indication
- First aid kit
- Emergency location transmitter
- Emergency flashlight
- Protective gloves

EXTERNAL LIGHTING EQUIPMENT

- 2 landing search lights with independent control
- Navigation lights
- Signal coupler
- 2 anti-collision lights
- Blade tip lights
- Cabin and emergency lights
- 5 blade tip lights

EQUIPMENT AND FURNISHING OF PASSENGER CABIN

- Up to 15 shock absorbing passenger seats
- Interior set
- Heat and sound insulation
- General lighting with brightness adjustment
- Floor cover
- Light annunciators “Выход / EXIT”
- Legends and stencils
- Fire extinguisher

ANTI-ICING SYSTEM

- Main rotor blade heating elements
- Tail rotor casing heating element
- Spinner heating element
- Icing indicators
- Pitot heating
- Windshield cleaning system

GENERAL HELICOPTER EQUIPMENT CONTROL SYSTEM

- System computer unit
- Remote signal concentrator unit
- Central console
- Switch and protection unit 27V
- Overhead panel

LIGHT ANNUNCIATOR

- Instrument panel of PIC or co-pilot

RADIOELECTRONIC EQUIPMENT

INSTRUMENT PANELS AND CONSOLES

- Instrument panel (left part, central part, right part)
- System of operating controls

FLIGHT AND NAVIGATION EQUIPMENT

- Digital computer
- Automatic control system
- Attitude and heading reference system
- Magnetic heading sensor
- Air data computer
- Stagnation-temperature probe
- Low-altitude radio altimeter
- Digital signals switch
- Set of navigation receivers, receiver with antenna feeder device
- Pitot

FLIGHT AND NAVIGATION INSTRUMENTS (on instrument panels and consoles)

- Multifunctional display
- Control device
- Terrain awareness warning system
- Multifunctional control panel
- Gyro horizon
- Aircraft clock
- Altimeter
- Speed Indicator
- Variometer
- Tachometer indicator
- Magnetic compass

RADIO COMMUNICATION EQUIPMENT SUITE

- VHF/HF radio station
- Crew headsets
- Interphone control panel
- Antenna feeder system
- Automatic emergency location transmitter
- Portable emergency beacon

FLIGHT DATA RECORDING SYSTEM

- Small-size protected flight recorder

EQUIPMENT FOR CARGO TRANSPORTATION (inside the cabin)

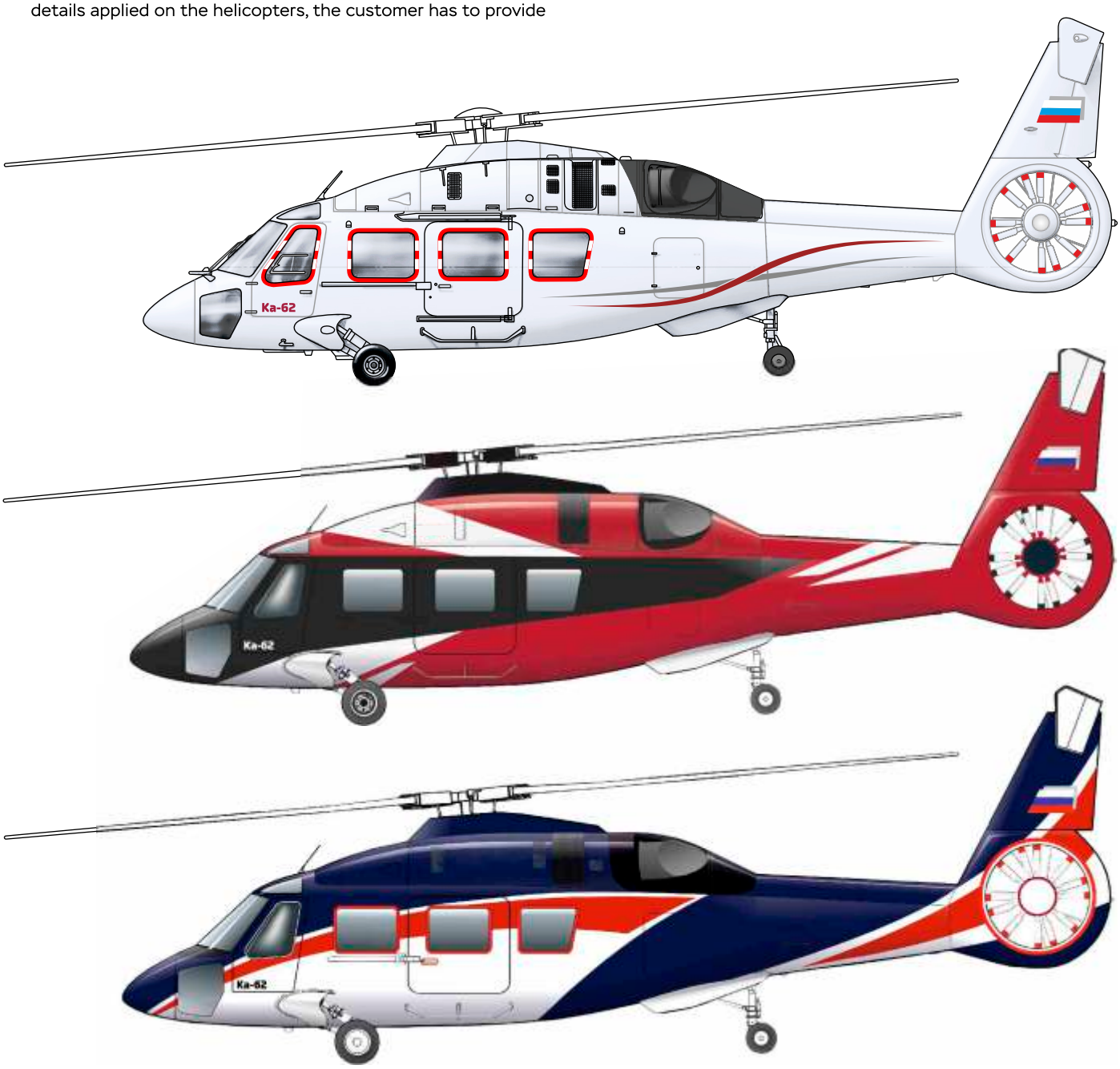
- Set of equipment for fastening and accommodating the cargo in transportation cabin
- Mooring net for luggage

Additional units, equipment and standard helicopter components (optional)

Anti-icing system (removable part)
HUMS-type system
Sun visors
External rearview mirrors
Wire-strike protection system
Smoke protection and oxygen equipment
On-board rescue hoist with 300 kg lifting capacity
Group rescue aids
Traffic collision avoidance system
Emergency ditching system
Life vests
External cargo sling
Medical equipment

6. Painting scheme variants

Any configuration is offered with standard painting schemes. External helicopter surfaces are painted with gloss polyurethane or acrylic urethane enamels. Customized painting schemes as per customer's individual design is optional and shall be approved by a representative of JSC “Russian Helicopters”. Any customer may develop a painting scheme jointly with a representative or provide an independently made design and color scheme as per the Federal Standard 595B color catalog (1994, July) or the RAL-K1 chart. To have company name, logo and other external painting details applied on the helicopters, the customer has to provide information on colors, dimensions and locations of such details and attach corresponding files in vector format. When negotiating any painting schemes please note that the state registration number, technical warning legends, helicopter model and OEM logo are mandatory markings at fixed locations on the fuselage.



6.1 Standard painting schemes

7. Helicopter application variants
Passenger variant

Wide side sliding doors ensure easy access on board the helicopter.

All versions of Ka-62 feature six push-out windows which can serve as Type IV emergency exits. For baggage transportation, a spacious compartment is available with access from outside the helicopter (starboard and portside).

If required, the seats may be removed to refit the helicopter for other application variants. The seats are attached to the floor by cross-bars in blocks of three via easily detachable bolted connections.

Standard layouts:

- high-density: 15 passengers (Fig. 7.1);
- comfort: 12 passengers (Fig. 7.2);
- high-comfort: up to 9 passengers (Fig. 7.3).

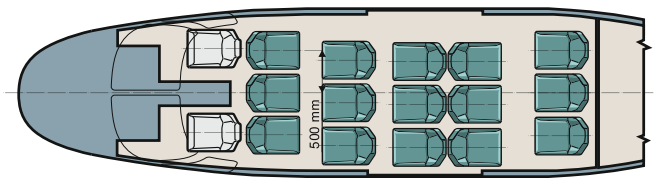


Fig. 7.1

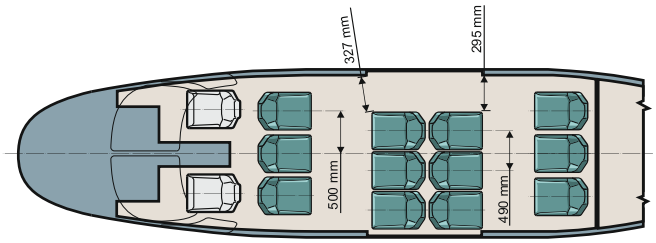


Fig. 7.2

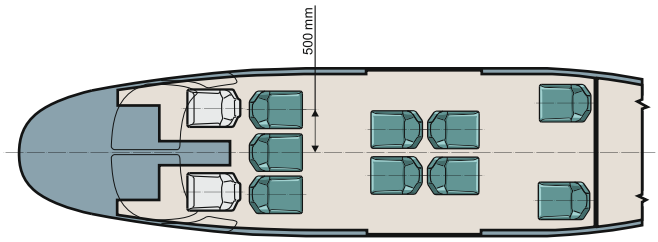


Fig. 7.3

7.4 Passenger seats (block of three)

7.5 Enhanced comfort cabin variant for 9 passengers

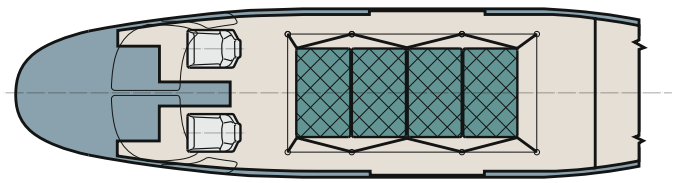
Transport variant

Cargo capacity 2,000 kg (internally) (2,500 kg at the external sling)

Designed for transporting up to 2,000 kg of cargo inside the fuselage and up to 2,500 kg at the external sling.
Cargo transported in the transport cabin may be assembled as a package of separate cases, boxes, bags, packages, etc. or barrels. Special devices with mooring points are installed on transport cabin floor to place and fix the cargo.

Loose cargo is covered with a net that is attached with ropes and stretching screws to the mooring points on the floor. Along the floor surface there are five load-bearing profiles that can be used for attaching any optional equipment (passenger seats, medical equipment etc.) and cargo.

The external cargo sling system is comprised of non-removable part affixed to load-bearing fuselage components and a removable suspension cable with electromagnetic locks for tactical or emergency cargo detachment.



7.6 Scheme of cargo accommodation and mooring on transport cabin floor

7.7 Attachment of cargo at the external sling

7.8 Layout of cargo and equipment mooring points on the floor

7.9 Transport cabin. Volume 9.5 m³

EMS version

The use of EMS aviation considerably reduces time for medical personnel's arrival to an accident site even in hard-to-reach or faraway areas.

EMS helicopters feature higher speed as compared with automobile transport and need less time to arrive to the site since they do not depend on traffic, which makes them indispensable when literally every second counts.

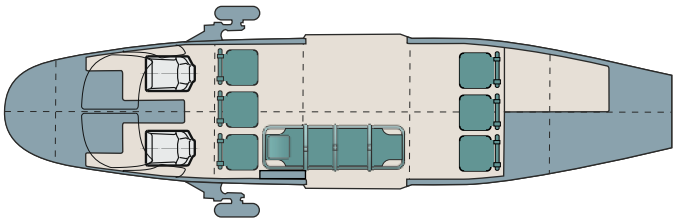


Fig. 7.10

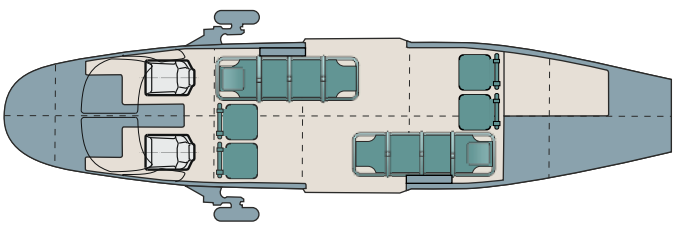


Fig. 7.11

Ka-62 helicopter is able to accelerate to 310 km/h which is one of the best performances among EMS rotorcraft.

Operator can convert the transport cabin by installing medical equipment in various configuration and medical personnel transportation equipment at the standard passenger seat attachment points.

The composition of cabin equipment in medical configuration depends on the performed mission and is determined by the customer.

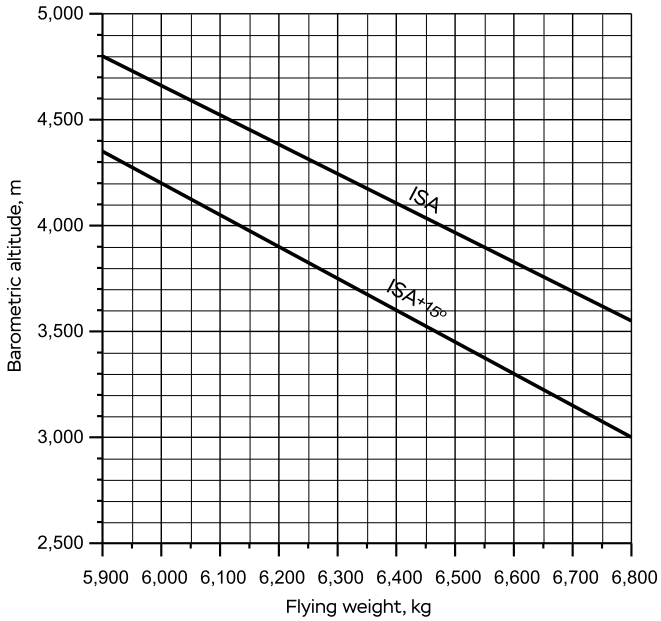
Medical configuration variants:

Variant A (Fig. 7.10):
- One medical module / two stretchers (stacked)
- Passenger seats – up to six

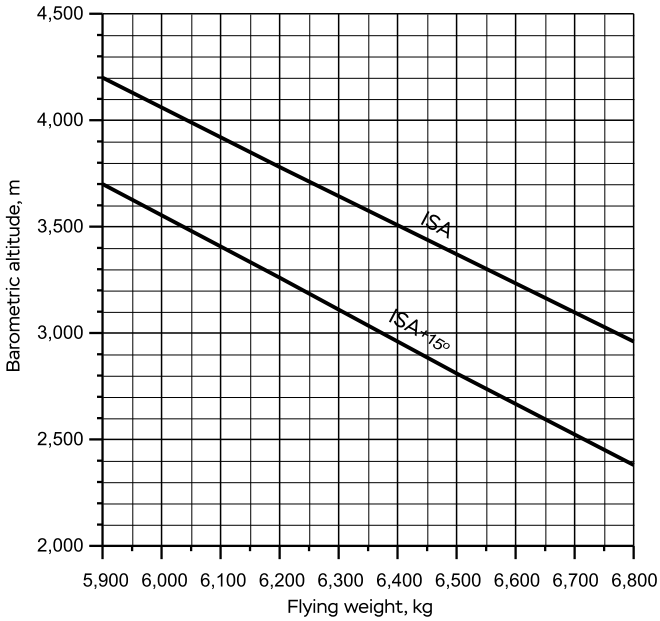
Variant B* (Fig. 7.11):
- Two medical modules / four stretchers (2 x 2 stacked)
- Passenger seats – up to four

*To be worked out in more detail during the stage of obtaining a supplement to the certificate for the EMS application variant.

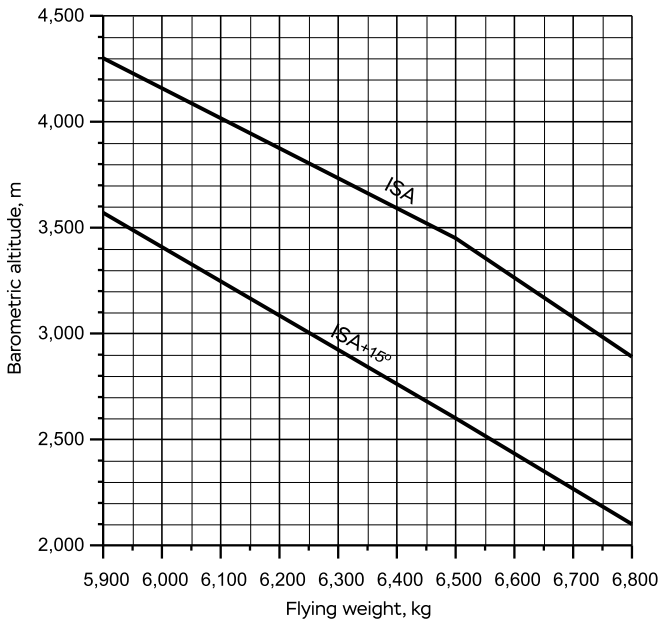
8. Parameter graphs



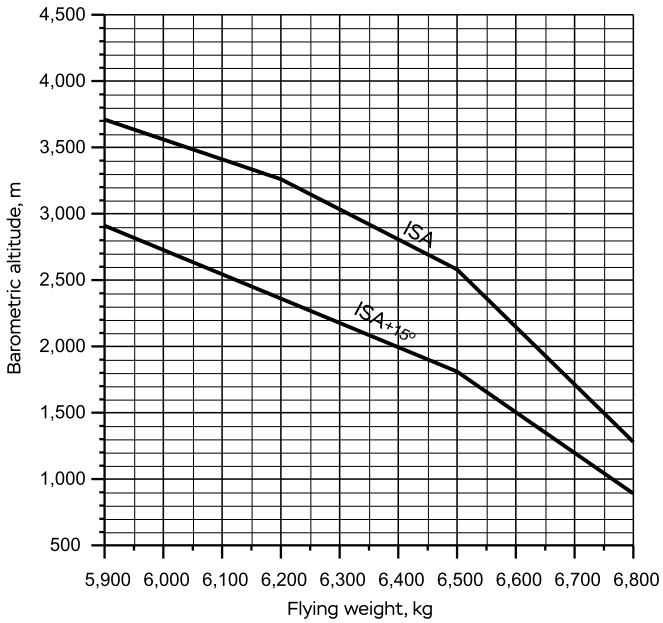
Take-off rating of power plant hovering IGE



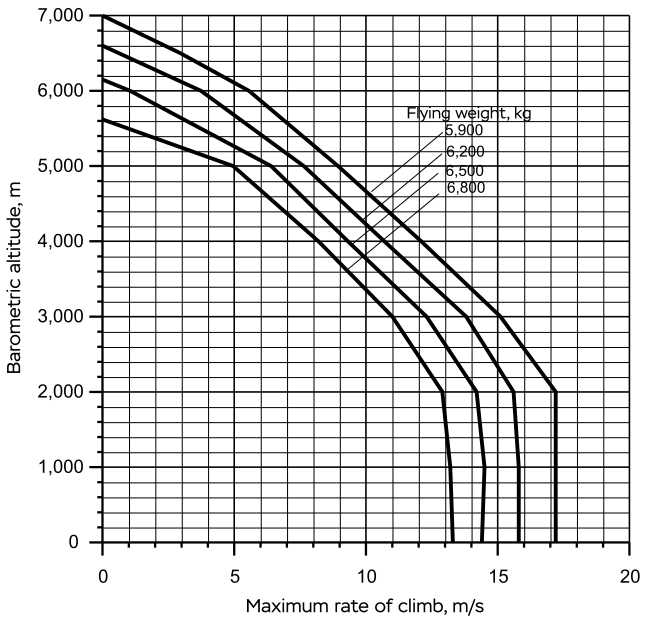
Take-off rating of power plant hovering OGE



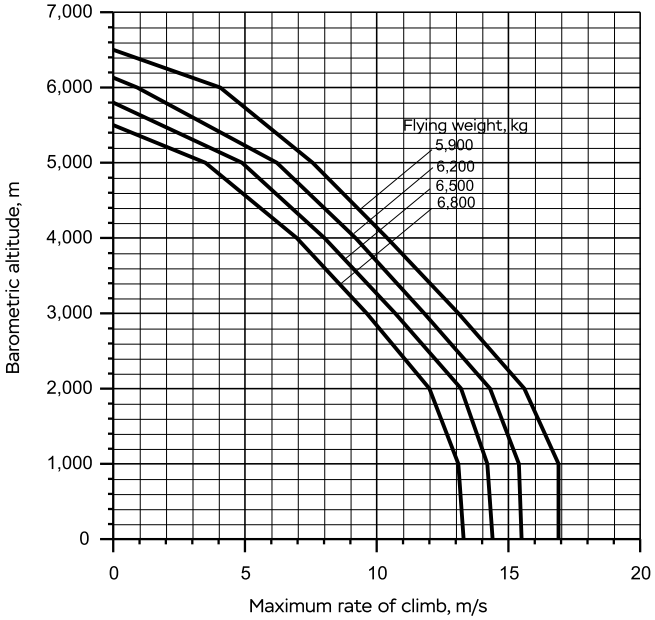
Maximum continuous rating of power plant hovering IGE



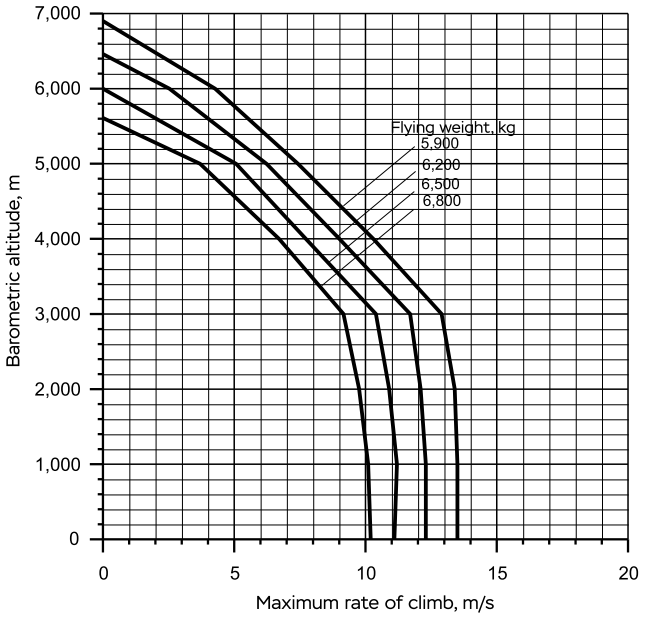
Maximum continuous rating of power plant hovering OGE



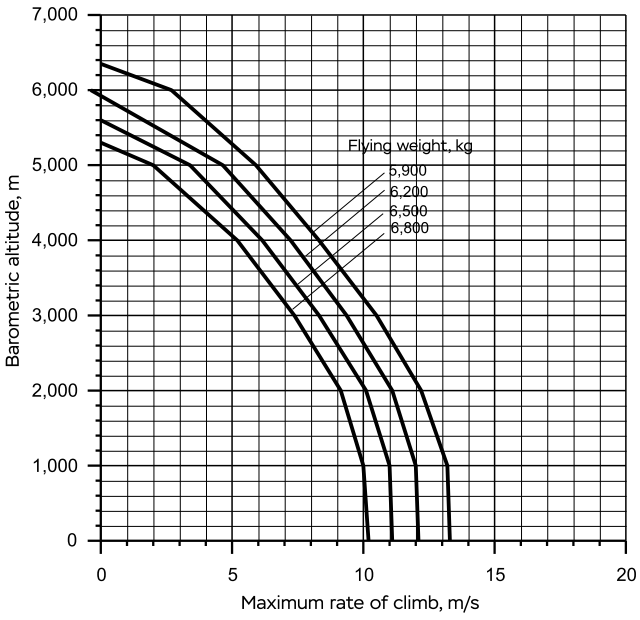
ISA Take-off rating of power plant



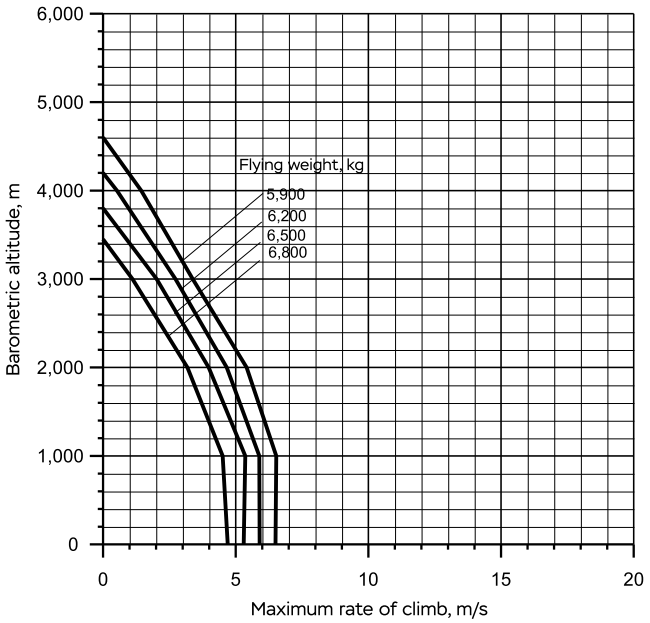
ISA+15°C Take-off rating of power plant



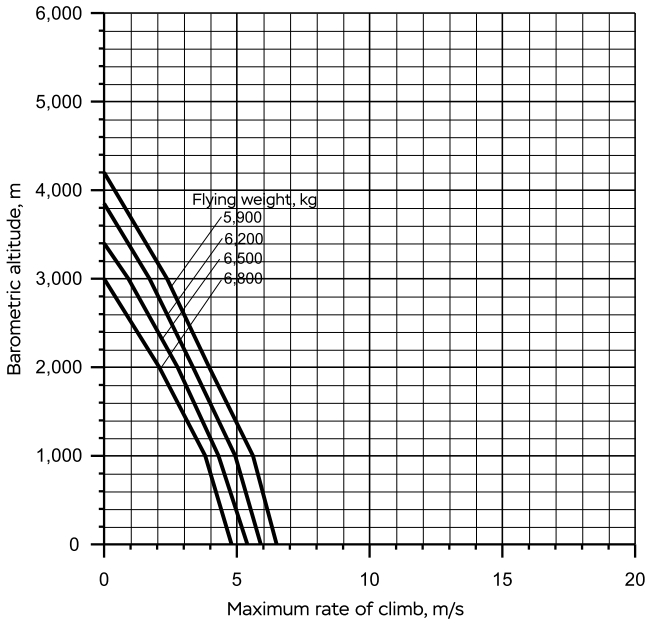
ISA Maximum continuous of power plant



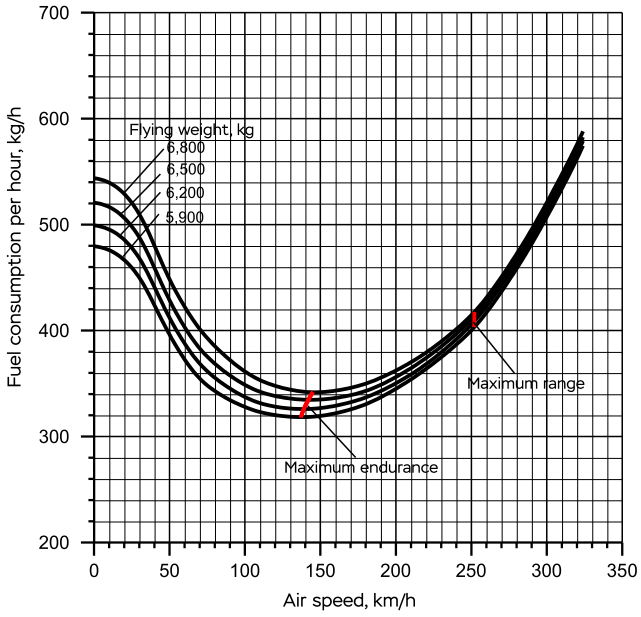
ISA+15°C Maximum continuous rating of power



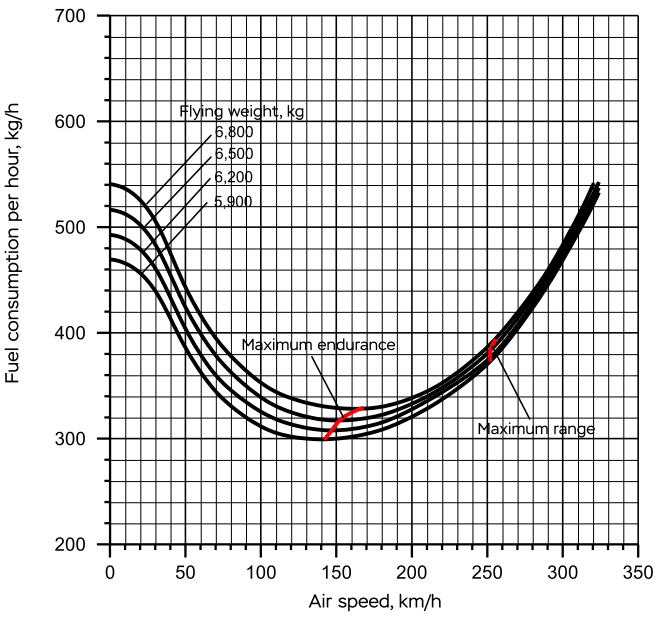
ISA Continuous OEI rating of power plant



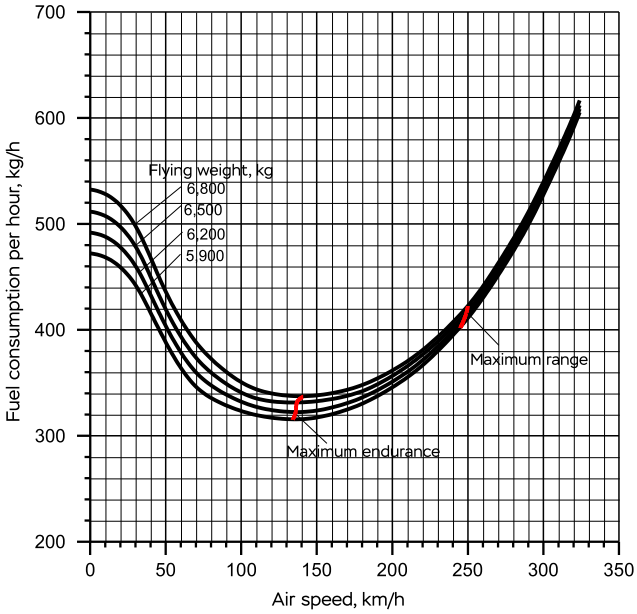
ISA+15°C Continuous OEI rating of power plant



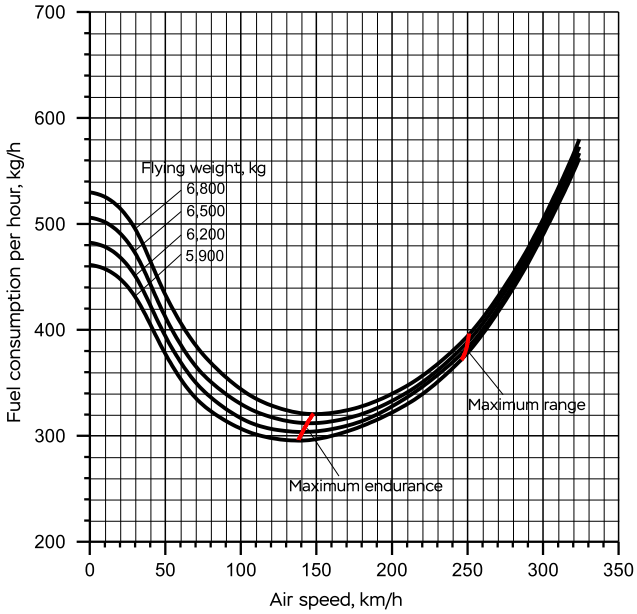
ISA+15°C Sea level



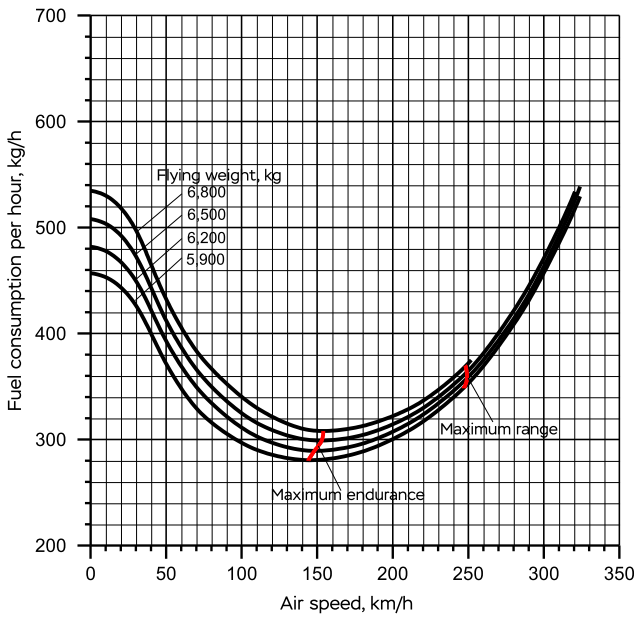
ISA+15°C Barometric altitude 1,000 m



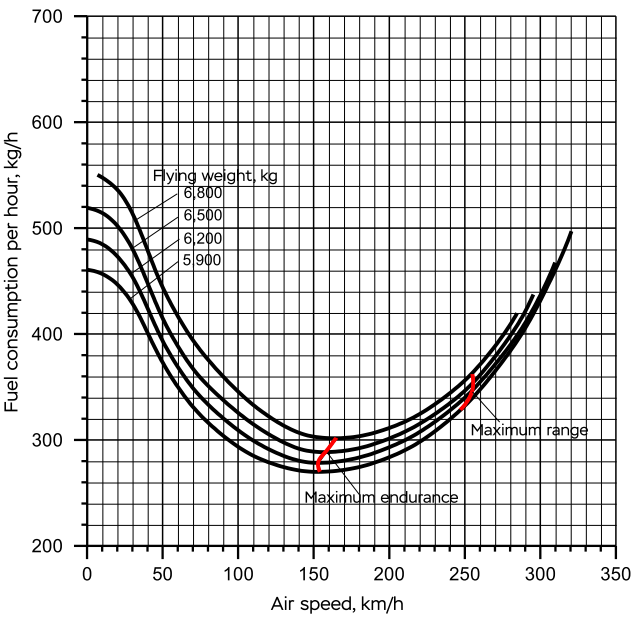
ISA Sea level



ISA Barometric altitude of 1,000 m



ISA Barometric altitude of 2,000 m



ISA Barometric altitude of 3,000 m

9. Maintenance and overhaul

Ka-62 helicopter requires the following main maintenance types:

Line maintenance:

- preliminary preparation;
- departure activities;
- reception activities;
- parking activities.

Line maintenance is performed by the ground crew and the specialists of maintenance teams either at the airfield or on unprepared special purpose sites using built-in test equipment and ground maintenance equipment transported on-board.

Periodic maintenance forms:

- 500-hour scheduled maintenance
- 1,000-hour scheduled maintenance
- 1,500-hour scheduled maintenance
- 3,000-hour scheduled maintenance

Scheduled (periodic) maintenance is performed by specialists of the operator's service teams either at the airfield or in a laboratory of the primary operation base using built-in test equipment, ground maintenance equipment and test equipment for components subject to laboratory checking.

Periodic maintenance for engines, assemblies and instruments is assigned based on the airframe flight hours since new or since last overhaul; it shall include basic and additional works the necessity of which is determined as per the helicopter operating hours after each 500 flight hours regardless of the variation of the previous periodic maintenance.

To ensure trouble-free helicopter operation in various climatic conditions, heavy-duty use, special applications and in case of lengthy cease of flying, a senior official of the operator's airworthiness management service may give instructions to perform any additional works or to perform any of the periodic maintenance forms out of schedule.

Maintenance of Ardiden 3G helicopter engines is performed as per the engine maintenance manual.

Special inspections:

- helicopter maintenance during storage.
- If there is a cease of flying operation, the helicopter shall be put into storage.
- helicopter preservation can last up to 6 months. If a storage period over 6 months is required, the helicopter shall undergo re-preservation after 6 months of storage.
- the helicopter can be stored up to one month without undergoing preservation.
- If the helicopter is to be stored longer than one month, the operator shall make a decision whether to perform preservation.
- works performed after replacement of main engines, main gearbox, main rotor hub, swashplate, main shaft, tail shaft, tail gearbox and tail rotor.

Unscheduled maintenance.

Unscheduled maintenance shall be performed regardless of scheduled maintenance after each emergency situation in operation.

Helicopter maintenance shall be performed by trained engineering and technical personnel with the following knowledge:

- aircraft maintenance and repair manual;
- safety rules;
- maintenance schedule;
- works performance procedure.

The engineering and technical personnel is admitted to helicopter maintenance as per the established procedure and shall be held responsible for completeness and quality of performed works.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10. Service life of helicopter and its components

The helicopter maintenance doctrine is based on the on-condition principle (excluding assemblies with limited service life). The service life periods of the main assemblies are listed below.

COMPONENT	TBO, hrs*
Engine	5,000
Main gearbox	5,000
Tail gearbox	5,000
Main rotor control hydraulic actuator	5,000
Tail rotor control hydraulic actuator	5,000
Main rotor hub	5,000
Tail rotor hub	5,000
Main rotor blade	10,000 (assigned)
Tail rotor blade	10,000 (assigned)
Fuselage	20,000
Periodic maintenance – 500 flight hours or 12 months.	*target service life

11. Training

The aviation training center (ATC) of PJSC AAC “PROGRESS” provides Ka-62 conversion training services for flight crews and technical/engineering personnel. The training is available either in the training center or at the customer's base. The plant territory has an aviation training center hotel offering business-class and luxury-class rooms.

It is planned to equip the aviation training center with a full flight simulator of the Ka-62 helicopter (Type III as per the ICAO 9625 classification) and a computer-aided training course.
A portion of theoretical studies may be undergone by the trainees remotely via an LMS system at the web portal of JSC “Helicopter Service Company”.

Aviation training center of PJSC AAC “PROGRESS”:

- total area of facilities 1,440 m²;
- access to workshops and labs of the plant, as well as to actual aircraft;
- computerized classrooms with benches and mock-ups of Ka-62 assemblies;
- technical library;
- canteen and break room.

11.1 Training class at aviation training center of PJSC AAC “PROGRESS”

11.2 Ka-62 simulator

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