LAWIAIR LIMITED

AVIATION COMPANY
AIR SERVICES EXPOSITION

Certificate of Incorporation (COI) No: COY-PLUKRKL
Air Services License (ASL) No: ASL-002/2025
Air Operator Certificate (AOC) No: 2026-001

P.O. BOX 31286, CAPITAL CITY, LILONGWE, Central Region, Malawi
d Floor Casino Marina BLD, Golden Peacock Hotel Complex, Plot 13/1243. LILONGWE, MALAWI.
Phone:+265 888 892 494 /+265 980 383 501; FAX:+1 425 434 5639
Email: info@Lawiair.com ; WEBSITE: https://lawiair.com/

COMPANY NO. COY-PLUKRKL

GOVERNMENT OF MALAWI
COMPANIES ACT
(Cap. 46:03)

CERTIFICATE OF INCORPORATION

OF

LAWIAIR LIMITED

(Private Limited by Shares)

I hereby certify that the above-mentioned company has this day been incorporated under the Companies Act, No. 15 of 2013 and that the company is **a Private Limited by Shares .**

Given under my hand at Blantyre, Malawi, this **Wednesday, 19 March, 2025**

REGISTRAR GENERAL MALAWI

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Registrar of Companies

MINISTRY OF TRANSPORT AND PUBLIC WORKS

CIVIL AVIATION AUTHORITY

LICENCE TO PROVIDE

AIR SERVICES

NO. ASL 002/2025

1. In accordance with Regulation 6 of the Aviation (Air Transport Licensing) Regulations, Lawi Air Limited, P.O Box 31286 in Lilongwe, **Malawi**, are hereby granted an Air Service Licence to provide **International and Domestic Non-Scheduled** Passenger and Cargo services for commercial purposes.

2. The authority of the licence is subject to the conditions set out in the attached schedule.

3. The validity of this licence is stipulated in the Validity schedule attached

Honourable Jacob Hara, MP
MINISTER OF TRANSPORT AND
PUBLIC WORKS

CA. Form: OPS 410

CIVIL AVIATION AUTHORITY

Air Service Licence: ASL 002/2025	**Civil Aviation Authority** **AIR OPERATOR CERTIFICATE**	File Reference No. CAA/2/21/129

Expiry date: *12-05-2027* AOC #: 2026-001	**LAWIAIR LIMITED** 3rd Floor Casino Marina BLD, Golden Peacock Hotel Complex P.O. Box 31286, Capital City Lilongwe 3, Malawi Tel: +265 888 892 494 Email: info@lawiair.com	Tel: +265 888 892 494 Email: info@lawiair.com Contact details, at which operational management can be contacted without undue delay, are listed in Operations Manual Part A Chapter 1 Page A 1.1

This certificate certifies that ***LAWIAIR LIMITED*** is authorized to perform commercial air operations, as defined in the existing operations specifications, in accordance with the operations manual and the ***Malawi Aviation (Air Operator Certification & Administration) Regulations, 2013.***

Date of issue: *13-05-2026*	Name: Dr. Clement C. Mwale DIRECTOR GENERAL	Signature & Stamp The Director General Civil Aviation Authority of Malawi 13 MAY 2026 Private Bag B311, Capital City, Lilongwe, Malawi

CIVIL AVIATION AUTHORITY

Malawi Civil Aviation Authority

OPERATIONS SPECIFICATIONS

(subject to the approved conditions in the operations manual)

ISSUING AUTHORITY CONTACT DETAILS

Telephone: **+265 1 770 577**	Fax: **+265 1 774 986**	E-mail: **dg@caa.gov.mw**

AOC No: **2026/001** Operator name: **Lawiair Limited** Date: **13th May 2026**

D/B/A trading name: **N/A** Signature:

Aircraft model: **MI-8MTV-1**

Aircraft Nationality & Registration Mark: **7Q-LAW and 7Q-LAL**

Type of operation: Commercial air transportation ☒ Passengers ☒ Cargo ☒ Other: Aerial Word Category (SAR, Firefighting, Casualty evacuation, Air Patrol & Surveillance, Helicopter Emergency Medical Services HEMS)

Area(s) of operation: **Worldwide**

Special limitations: **NIL**

SPECIAL AUTHORIZATIONS	YES	NO	SPECIFIC APPROVALS	REMARKS
Dangerous goods	☒	☐		
Low visibility operations				
Approach and landing	☐	☒	CAT I RVR: **550m** DH: **200 FH**	
Take-off	☐	☒	RVR: **600m**	
Operational Credit(s)	☐	☒		
RVSM ☒ N/A	☐	☐		
EDTO ☒ N/A	☐	☐		
Navigation specifications for PBN operations	☒	☐	RNAV5, RNAV1, RNP (LNAV) APPROACH, VNAV and Horizontal Ops	
Helicopters operations with the aid of night	☒	☐		

vision imaging operations				
Helicopters Hoist operations (HHO)	☒	☐	OM-A Chapter 8.12	
Helicopters Emergency Medical Services (HEMS)	☒	☐	OM-A Chapter 8.14	
Aerial work Category	☒	☐	Search and Rescue (SAR) operations over the land and water surface Helicopters External Sling Load operations (HESLO) Helicopters surveillance (observations) operations (HSO), with approved radio electric/optical devices Forest Firefighting Operations (FFO) using Water Discharge Devices (WDD). Human External Cargo/(rappelling) operations (HEC)	
Continuing airworthiness			AAL Group	**Base & Line Maintenance (Wilson Airport, Kenya)**
EFB	☒	☐	Software application type B as listed in OM-A Chapter 8.11	
Other(use one line per authorization)	☐	☒		

CONTENTS

AIR AMBULANCE CAPABLE OF TRANSFORMING INTO 4 CONFIGURATIONS WITHIN 40 MINUTES

Aircraft equipment and its capability of quick conversion allow efficient and safe performance of a wide range of tasks 24/7 (day and night): medical evacuation, patrolling/monitoring, reconnaissance/quick response, SAR, passenger/military units and cargo transportation. The change of helicopter configuration from aeromedical evacuation (Air Ambulance) to SAR, combi (passengers & cargo), passenger or cargo configurations, depending on the task set, is done by the crew in the field within 40 minutes.

For this purpose, the helicopter is fitted with the following equipment:

- One to three ICU medical modules with a full set of medical equipment;
- FLIR Electro-Optical Forward-Looking Infrared Surveillance System;
- Integrated Night Vision Imaging System (including NVGs, NVG-compatible cockpit, FLIR-compatible steerable dual mode searchlight, along with FLIR);
- SCOTTY Satellite Video Data Transmission, Processing and Storage System;
- EuroNAV and Easy Task systems;
- Enhanced Capacity Rescue Hoist with SU Rappelling Device and a full set of rescue equipment;
- Protection systems (anti-missile and small arms);
- State-of-the-art avionics and navigation equipment;
- Becker DVCS6100 Digital Voice Communication System with an option to connect passenger headsets;
- Axnes Polycon Wireless Intercom System for communication with rescuers;
- Max-Viz EVS Enhanced Vision System.

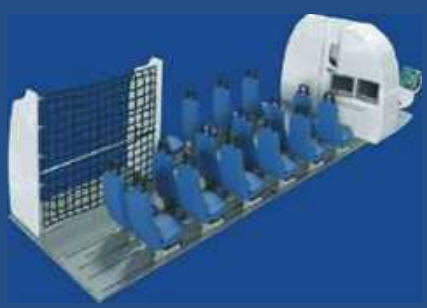
MULTIPLE MISSIONS UNDER ONE ROTOR

AIR AMBULANCE

SEARCH AND RESCUE

COMBI PAX & CARGO

PASSENGER



CARGO

AEROMEDICAL EVACUATION (MEDEVAC)

The Aircraft can perform the following types of medical evacuation 24/7 in high-risk environments:

Type A. Air Ambulance tasks, medical or casualty evacuation for all categories of patients critically requiring medical aid, with diagnosis and in-flight life-support on an accident-and-emergency clinic level. For these tasks, three ICU medical modules (each capable of accommodating 2 «Alpha» or «Bravo» patients) or two ICU medical modules (for 2 «Alpha» or «Bravo» patients each) and one non-ICU medical module (with stretchers for 3 «Charlie» patients) are installed. Therefore, in case of 3 ICU medical modules installed on-board, the helicopter is capable of evacuating 3 «Alpha» and 3 «Bravo» patients; and in case of 2 ICU medical modules and 1 non-ICU medical module – 2 «Alpha», 2 «Bravo» and 3 «Charlie» patients simultaneously. The aircraft can also accommodate up to 3 flight physicians/nurses/paramedics, as well as 2 accompanying persons on-board.

Type B. Transportation of fully or partially disabled «Bravo» or «Charlie» patients not requiring in-flight life support, but accompanied by medical personnel. Patients are transported on litters installed by the crew on-board the helicopter, the number of which may vary depending on the task, and can be up to 12 (in case of mass casualty evacuation).

These types of medical evacuation, depending on the condition and location of the patient, involve following task algorithms:

A. Medical evacuation of patients from a predefined and approved site. If the patient`s condition allows delivering them to an airport or an existing site, or the patient is located in the immediate vicinity thereof, upon MEDEVAC activation the crew performs it in normal mode, both day and night using INVIS.

B. Medical evacuation from an unprepared landing site selected from the air (Forward Aeromedical Evacuation). Upon call for medical evacuation of casualties/patients whose exact location is unknown, it is carried out by the crew in autonomous mode with the ability to search and rescue casualties during task performance. The crew then include two internationally certified rescuers. In the daytime, FLIR system is activated in the daylight mode. At night, FLIR system is used in the IR mode along with the searchlight and night vision goggles.

When casualties have a beacon available, radio search is performed. After identifying the exact location of casualties, the crew determines the possibility of landing the aircraft nearby and selects a site for landing and further evacuation. If landing is impossible in the vicinity of the casualties, evacuation is carried out from the hovering aircraft. In this case, rescuers use a rescue hoist, rappelling devices and rescue equipment to descend and evacuate the casualties aboard the aircraft without landing.

Next, the rescuers triage the casualties on-board, assign the appropriate category and determine the required level of medical assistance required until the aircraft lands at the destination and the patients are further transported to a medical facility

Depending on a specific task, the following equipment is installed in the aircraft:

- three ICU medical modules for transportation of «Alpha» and «Bravo» casualties (each module capable of accommodating two patients). In this case, the medical equipment of each module enables in-flight advanced life support for patients, while exchanging data with a remote coordination and consultation center in real time – either in the air during evacuation or on the ground where patients are located;
- two ICU medical modules for transportation of «Alpha» and «Bravo» casualties, one non-ICU medical module for transportation of three «Charlie» casualties and a set of search-and-rescue equipment for day and night recovery from a hovering helicopter (in locations where landing is impossible for any reason); and subsequent provision of in-flight advanced life support for «Alpha» and «Bravo» patients (2 patients per module) while exchanging data with a remote coordination and consultation center in real time;
- up to twelve stretchers for transportation of «Charlie» and «Bravo» casualties (fully or partially disabled patients not requiring in-flight advanced life support).

EACH ICU MEDICAL MODULE COMPRISES THE FOLLOWING EQUIPMENT AND TOOLS:

- Draeger Oxylog 3000 Plus Portable Ventilator;
- Corpuls-3 Slim Monitoring and Defibrillation System;
- BBraun Perfusor Space Syringe Pumps;
- Bbraun Infusomat Space Large Volume Pump;
- Weinmann Accuvac Pro Portable Electric Suction Unit;
- Weinmann Oxygen MODULE Wm22200 System;
- Weinmann LIFE-BASE 3 NG Mobile Unit with:
  - MEDUMAT Standard2 Portable Ventilator;
  - MEDUCORE Standard Patient Monitoring and Defibrillation System;

Additionally:

- EGO-ZLIN Universal immobilization Vacuum Splint Rescue Set;
- EGO-ZLIN Vacuum Mattress;
- EGO-ZLIN Plastic Spine Board with belts to immobilize patients;
- WEINMANN PARAMEDIC-BOX First-Aid Physician Toolbox;
- WEINMANN RESCUE-PACK First-Aid Paramedic Bag;
- AAT Oxygen Stations;
- Temperature Regulating Container for infusion solutions and medications storage;
- Biohazard Personal Protection Equipment (EOBO-10/B bio-protection suits) and BIO-BAG Mobile Isolation Units (EBV-30/40) for transportation of infected patients, patients with burns, or sensitive to polluted environment patients;

TRANSPORTATION OF HIGHLY CONTAGIOUS PATIENTS

Thanks to the special equipment installed in the aircraft and trained medical professionals, the helicopter is capable of evacuating and transporting patients with highly dangerous infections.

For these purposes the helicopter is equipped with:

- BIO-BAG EBV-40 Isolation Capsule
- EDK-08 Decontamination Chamber, consisting of chamber for one stretcher case patient, decontamination box with hose pipes, two 50-liter drums, compressor, transportation case
- EI-10 Isolation Chamber
- EBO/EOBO protective biological and chemical suits, including protective overalls, protective shoes, bio-gloves, protective face piece with PROFLOW filtration unit with 2 filters, and bag.

The following algorithm is used for transportation of highly contagious patients:

1. Upon arrival at the location of evacuation, medical personnel assembles a decontamination chamber with decontamination equipment;
2. Isolation chamber is also assembled;
3. Medical personnel put on protective suits.
4. Medical personnel in protective suits put a patient into the isolation chamber. Filters for cleaning the air inside the isolation chamber are not reusable, and are disposed after use.
5. Medical personnel bring the capsule with patient into the decontamination chamber, for decontamination.
6. After decontamination, the capsule with the patient is carried into the helicopter and fixated on an ICU medical module.
7. Medical personnel disassemble the decontamination shower, remove the protective suits and put them in a special container.
8. Medical personnel accompany the patient to the hospitalization facility.

SURVEILLANCE / RECONNAISSANCE / SEARCH AND RESCUE OPERATIONS

The aircraft is capable of effective performance of patrolling, surveillance, reconnaissance, rapid response and SAR tasks.

For these purposes the helicopter is equipped with the following systems:

FLIR

Electro-optical forward-looking infrared surveillance system (FLIR), designed for 24/7 patrolling, surveillance, monitoring and reconnaissance operations. The system allows detection, identification, qualitative and quantitative assessment of objects with an option to record, store, and transmit video and photographic information.

During daytime, reconnaissance and long-range surveillance (depending on flight altitude and atmospherc conditions) are conducted with the use of FLIR high definition television camera with 20x optical zoom and 2x digital zoom, at a bearing of 360°, and also by means of the thermal imager.

At night, detection and identification are done using thermal imager at a distance:

Object	Detection range (m)	Identification range (m)
Person	10.1 km/5.45 NM	2.2 km/1.19 m
Vehicle	17 km/9.18 NM	4.9 km/ 2.65 m

FLIR displays are installed in the cockpit and passenger cabin (operator workstation). FLIR operator can inform the flight crew on potential threats detected on the ground.

SX-16 Nightsun IFCO Searchlight

Steerable, FLIR-compatible Searchlight operates in visible and IR modes. Effective range: 1 km (0.54 NM) in normal mode and 1.8 km (0.97 NM) in infrared mode.

Enhanced Capacity Rescue Hoist

Enhanced Capacity Rescue Hoist with SU Rappelling Devices and full set of search-and-rescue equipment. Rescue Hoist enables loading / unloading cargo weighing up to 272 kg (600 lbs) inside and from the aircraft, as well as hoisting up and down two people simultaneously while the helicopter is hovering at a height of up to 80 m. SU Rappelling Devices allow civilian and military personnel shorthaul to work sites where landing is impossible.

SATELLITE VIDEO DATA TRANSMISSION, PROCESSING AND STORAGE SYSTEM

Using SCOTTY Satellite Video Data Transmission, Processing and Storage System, by means of cameras installed inside the medical bay and portable personal cameras of each AME team member, it is possible to transmit video data of patient`s condition or perform video conferencing/consultation with relevant experts, located in the base medical institution (hospital). For this purpose, ground portable station, consisting of a specialized PC with satellite receiver transmitter and Ku or L band antenna is installed in the hospital.

SCOTTY Satellite Video Data Transmission, Processing And Storage System, consists of airborne equipment kit, ground command centre and portable on-ground station (for rapid response units). The system allows transmitting video and photographic data recorded by FLIR cameras, from flying or parked aircraft to the ground command centre, and provides two-way communication with it.

The System consists of:

- On-board unit, consisting of SATCOMHGA-6500 aerial system, Scotty SCP communications platform, SDU 7315 dual channel modem, HPA 7450 amplifier, Scotty SRS synchronization system, on-board operator workstation, fixed and portable HD cameras;
- **Ground control unit,** installed in a portable container and consisting of: ScottyHD-580 transceiver, 19" extensible monitor, headphones, external acoustic system, microphone, keyboard with roller mouse, video camera, Explorer 710 BGAN antenna and Ku-band antenna;
- **Ground portable station for the rapid response unit** (identical to the control unit except Ku-band antenna).

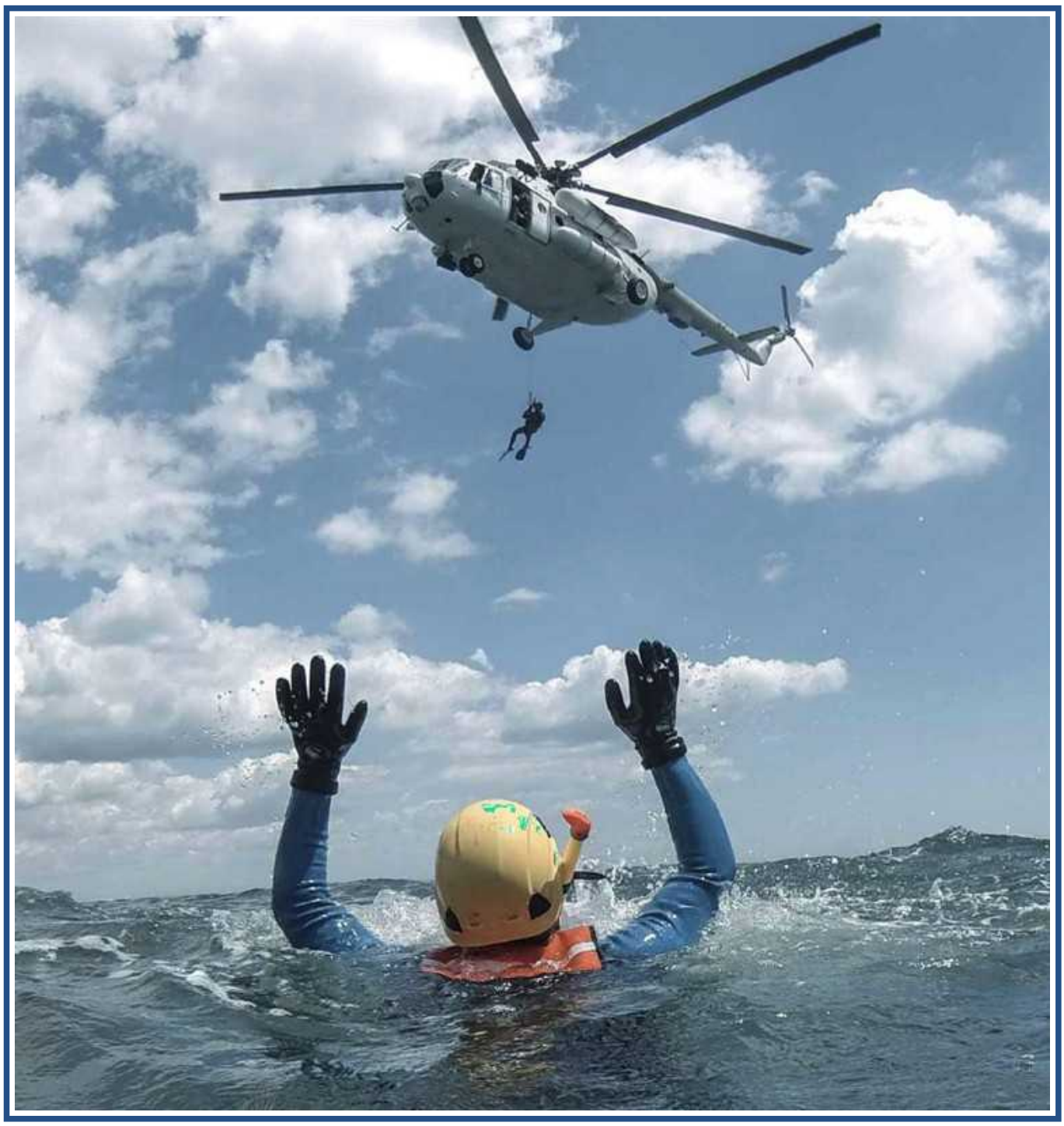
The System enables:

- Real-time operational control from the ground unit. Ground station operators and on-board operators can see a FLIR camera images simultaneously, hence making it possible to quickly identify hazards and take primary response measures.
- Provide interactive video conference communication between the crew, rapid response unit and other specialists on-board with the ground control unit.
  Provide two-way voice communication between the rapid response unit operating on the ground, crew and ground control unit.
- Quick decision-making based on the transmitted information and coordinating operation of on-board specialists.
- Recording and storing FLIR camera video in HD format and high resolution pictures on the built-in hard drive with a capacity of up to 200 minutes.

OFFSHORE RESCUE OPERATIONS

The aircraft are fitted with the following equipment that enables search-and-rescue operations over water:

- Communications equipment ensuring communication across the entire frequency range (including marine), as well as satellite telephone and video communication
- State-of-the-art navigation equipment
- Search equipment that allows scanning a wide range of frequencies, including the International Rescue of 406 MHz and aircraft homing onto emergency transmitters
- Rescue equipment to hoist up casualties both from the water surface and sea vessels
- Electro-optical search system that enables search of casualties in low visibility conditions and at night
- Medical equipment to provide emergency medical assistance on-board the helicopter



Procedures for offshore SAR operations:

- In order to ensure 24/7 operations, each aircraft is manned with double crews
- There are two readiness states set: 20-minute- and one hour-readiness
- Upon activation, the crew receives a task and takes off to the search area
- The crew conducts search using equipment installed in the helicopter
- Descending of rescuers can be performed using either rescue hoist or rappelling devices
- Rescue swimmers use communication systems providing constant communication with the fligt crew, including the ability to transmit coordinates of each rescuer`s location
- Cargo (including food, medications, equipment) can be transported to a disaster site using enhanced capacity rescue hoist
- Depending on the condition of the casualties, they may be evacuated to the aircraft using rescuer`s harness, rescue basket and stretchers.

SAR STRATEGY

Using the installed equipment, the aircraft can be efficiently and safely used 24/7 for:

- Monitoring and reconnaissance flights (visual monitoring or FLIR system surveillance with information transmission to ground control and coordination facilities in real time using Scotty system);
- Reconnaissance flights with a possibility of visual information transmission to ground control and coordination facilities in real time and, in case of emergency, quick (primary) response to identified threats and risks by military units / squads on-board;
- SAR operations using FLIR system, satellite video data transmission system, night vision imaging system, searchlight coupled with FLIR in accordance with the following procedure:
  - When approaching the site, 5-10 minutes prior to arrival, the crew monitors the radio frequencies on which establishing radio communication is possible. Using FLIR system in visible or infrared mode (NVGs and searchlight at night), the crew performs search of the casualties and their further identification;
  - After detecting the casualties, the crew accesses the possibility to land at the intended site selected from the air, and inspects the surrounding area for the presence of suspicious activities and threats;

- After assessing the situation, the crew performs landing. Loading can be done both with the engines off and on, depending on the condition of the casualties;
- If landing is impossible, the crew hoists casualties up in the hovering mode over the evacuation site by descending rescuers and rescue equipment.

• Location patrolling by military units and coordination of actions with the control facility via satellite video data transmission system;
• Landing of personnel in desired areas either onto landing sides (including those selected from the air) or using rescue hoist and SU Rappelling Devices from the hovering mode;
• Personnel recovery from dangerous zones and areas after completion of their tasks.

COMBI (PASSENGER AND CARGO TRANSPORTATION)

This configuration enables simultaneous transportation of passengers and cargo, including transportation of military units to the areas of operation (with weapons and heavy ammunition, including dangerous goods).

Movable rigid partition that splits the passenger and cargo cabin is used for combined transportation of passengers and unaccompanied cargo. The partition can be installed in any positions along the centerline of the cabin, allowing simultaneous accommodation of 5 to 15 passengers and 1,400 to 2,000 kg of cargo. Made of iron plates and Kevlar panels, the partition provides additional small arms protection for passengers and cargo.

Smoke detectors, video cameras and automated fire extinguishing system are installed in the cargo compartment.

PASSENGER TRANSPORTATION

In this configuration comfortable passenger forward-looking seats and a separate luggage compartment (at the rear end of the cabin) are installed in the helicopter for transportation of 16 passengers and 320 kg of luggage.

For military units transportation, the seats can be uninstalled and replaced with fold-down benches for 21 passengers with individual arms and weapons.

CARGO TRANSPORTATION

This configuration allows transporting cargo weighing up to 4,000 kg inside the cabin and up to 3,000 kg on external sling. A special fastening system ensures reliable anchoring of cargo inside of the cabin.

Cargo weight and cargo cabin dimensions:

- Dimensions: 5.34 m x 2.32 m.
- Maximum cargo weight inside the cabin: 4,000 kg.
- Maximum external sling load: 3,000 kg.

NIGHT VISION IMAGING SYSTEM

On-board Integrated Night Vision Imaging System allows performing tasks 24/7, including Low and NOE altitudes night flights, quick response team/unit deployment and evacuation (by landing or from the hovering mode), take-offs and landings at unprepared sites.

The System includes:

- **FLIR electro-optical surveillance system (FLIR UltraForce350HD),** to enable patrolling, surveillance, monitoring and reconnaissance tasks 24/7. The system is able to detect and identify objects; perform quantitative and qualitative assessment of objects; record, store and transmit video and photographic data.
- **PNL-3 Bielik Night Vision Goggles (NVG)** Used for ambient environment observation during dark hours in order to enable pilots to take-off, fly at low and NOE altitudes, search and detect objects, land at unprepared and unlit sites.
- **SX-16 Nightsun IFCO Searchlight,** steerable and FLIR-compatible, operating in visible and IR modes (with effective range of 1 km in normal mode and 1.8 km in infrared mode).
- **Max-Viz EVS Enhanced Vision System** Max-Viz EVS long wave thermal camera installed in the aircraft is designed for enhancing pilots' situational awareness as well as flight safety during day and night operations in adverse weather conditions. This equipment enables improved, clearer images of terrain, runway, clouds, unlit obstructions, visibility of which is limited because of smog, haze and fog, to appear on the display in the cockpit.
- **NVG-compatible cockpit.** It enables operations using NVGs and ensures minimum reflection from the instrument panel.

Use of the complete Integrated Night Vision Imaging System guarantees the highest effectiveness level of night operations as well as appropriate level of flight safety.

AIRBORNE MISSILE PROTECTION SYSTEM

Airborne missile protection system is designed for detection, identification and averting man-portable missiles (up to 8 simultaneous threats) by discharging infrared flares or blocking self-homing heads. The system provides full threat coverage, very low false alarm rate, and maximum warning time for deployment of appropriate countermeasures.

System specifications:

- Identification and neutralization of up to 8 incoming missiles simultaneously;
- 5 sensors provide complete coverage from threats (two in the front, two in the back and one in the bottom of the helicopter);
- Each magazine loaded with 30 IR flares;
- 2 types of flares used.

AMPS COMPONENTS INSTALLED ON THE HELICOPTER

1. MILD detects the missile immediately upon launch
2. MACS slews to the direction of the missile and confirms the threat
3. MCDU recieves the validated threat and activates the optimized countermeasure program
4. CFDS releases flares to counter the missile

SMALL ARMS PROTECTION SYSTEM

The passive protection system includes Kevlar panels installed on the floor and along the sides of the helicopter, protective Kevlar curtain in the rear part of the cabin (protection level exceeding III-A NIJ 0108-01 standard), as well as armor plates installed on the sliding bubble windows and seats (inserted into the base and the back of the seat) in the cockpit (protection level to III NIJ 0108-01 standard). In addition, the rigid partition between the passenger and cargo compartments used in the COMBI passenger & cargo configuration is also bulletproof (protection level to III NIJ 0108-01 standard).

The panels are made of Kevlar fabric inserted in Avizent fabric (highly durable fire-safe material designed specifically for aircraft). All cargo cabin mats are covered with corrugated aluminum, thus providing access to the external sling system hatch and other service openings. Cargo, passenger seats, luggage compartment and medical equipment can be installed on top of the panels. The panels can be easily removed to access service openings.

AVIONICS AND NAVIGATION

- **SANDEL ST 3400H HeliTAWS – EGPWS** is a ground, water and artificial obstacles proximity early warning system. Collision risk warning is signaled by voice and audio signals.

- **Honeywell TCAS II CAS-67B** is an early warning traffic collision avoidance system. It determines distance, direction, and altitude of the intruder. In the event of a risk the system warns the pilots with audio signals and provides visual advisories for avoidance maneuvers.

- **EuroNav 7 Situational Awareness and Mission Management System** ensures implementation of navigation and special tasks related to objects search and monitoring, using a variety of maps and information from the interfaced systems (FLIR, GTN-650, CAS-67B , AD-32, weather radar etc.), coupled with «Easy Task».

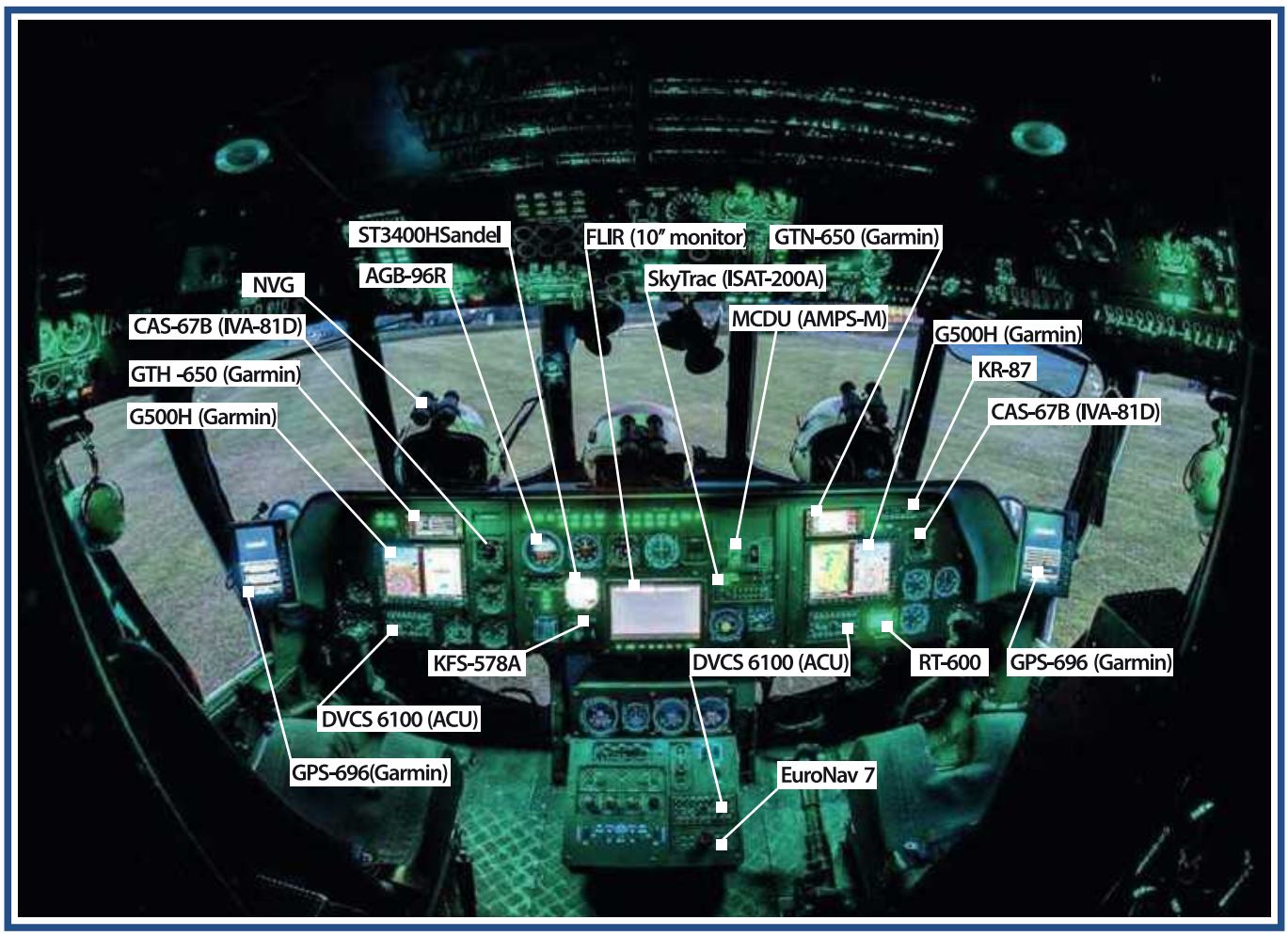
- **Planning and Mission Management Ground station.** This equipment is installed in the Command Center (and / or Situational Center of the Customer) and enables real-time flight planning information transmission on-board the helicopter, controlling and making changes to operations, receiving information regarding FLIR field of view and focus point, performing operational control of helicopters, and playing flight task recordings.

- **SkyTrac ISAT-200A** is used to track location of an aircraft in real time. Aircraft movement data is transmitted via satellites to ground control stations. The system allows sending text messages and the noise alarm to the ground control stations in case of emergency.

- **Becker DVCS 6100 Digital Voice Communication System** The system installed on-board aircraft ensures high quality communication via aircraft radio stations, as well as voice communication between all aircrew members both in the cockpit and cabin. An optional IC amplifier allows communication between the crew and passengers through passenger headsets (up to 6). The System's digital signal processing and high signal-to-noise ratio make communications safe and reliable under any circumstances.

- **Axnes Polycon**
  Axnes Polycon Wireless Intercom System, fully integrated with Becker DVCS 6100 system, is essential during Search-and-Rescue operations. Axnes Polycon enables voice communication between the crew on-board and rescuers outside the aircraft, being on the ground, on water or on hoist while performing SAR and HEMS. For this purpose, rescuers are equipped with MP50 PNG transceivers featuring:
  - Hands free operation through connection to all common headsets and mikes;
  - Wide communication range (10 km);
  - Effective noise cancelling;
  - No Loss Voice Activation (VOX);
  - Rugged housing, waterproof and dustproof to IP68 (submersible to 3m for 24 hours);
  - Designed for use under harsh conditions.

- **MP50 PNG** is equipped with a highly sensitive GPS receiver, allowing fast and precise location reporting of MP50 equipped rescuers to aircraft, showing it on pilots' displays in the cockpit and FLIR operator's display in the cabin.



- **GARMIN GPS-695/696**
  Dual (two standalone devices) GPS 695/696 Satellite Navigation System is an electronic topographic navigation system designed to deal with navigation tasks in any point of the globe. This navigation system is used to continuously monitor location of helicopters within the range of artificial navigation satellites. It also helps perform navigational tasks in case of both VFR and IFR flights in different weather conditions, day or night.

- **GWX 70H Digital Weather Radar**
  Garmin GWX 70H Digital Weather Radar designed to detect hydro meteorological phenomena and determine their degree of risk for the flight, is capable of observing the ground surface for the purpose of navigation orientation. The radar provides an overview of the airspace within a 120˚ azimuth viewing angle and 60˚ vertical viewing angle.

POWER UNITS (ENGINES)

Installation of TV3-117VMA-SBM1V-03 engines on Mi-8 MTV-1 helicopter allows the aircraft to operate in compliance with ICAO Performance Class 1.

1. Installation of new TV3-117VMA-SBM1V-03 engines (compared to TV3-117VM) enabled increasing the helicopter take-off weight (weight of transported commercial cargo) from helipads having significant elevation above sea level, outside the in-ground effect, and at high ambient air temperature, in particular:

at +30°C AAT

Helipad elevation above sea level	Payload (cargo, kg / distance, nm)	Helicopter maximum take-off weight, kg	Payload (cargo, kg /distance, nm)	Helicopter maximum take-off weight, kg
	Mi-8MTV with TV3-117VM		Mi-8MTV with TV3-117VMA-SBM1V-03	
H = 0m	3000 / 280	13000	3000 / 280	13000
H = 1000m	2000 / 400	12700	2000 / 430	12850
H = 2000m	2000 / 145	11200	2000 / 350	12400
H = 3000m	1000 / 50	9600	1000 / 280	11000
H = 4000m	-	8600	1000 / 50	9600
H = 5000m	-	-		8400

at +45°C AAT

Helipad elevation above sea level	Payload (cargo, kg / distance, nm)	Helicopter maximum take-off weight, kg	Payload (cargo, kg /distance, nm)	Helicopter maximum take-off weight, kg
	Mi-8MTV with TV3-117VM		Mi-8MTV with TV3-117VMA-SBM1V-03	
H = 0m	300 / 210	12600	3000 / 255	12850
H = 1000m	2000 / 105	11000	2000 / 300	12100
H = 2000m	1000 / 70	9800	1000 / 245	10800
H = 3000m	-	-	500 / 130	9600
H = 4000m	-	-		8280

2. Running time in take-off mode on Mi-8 MTV-1 helicopter with installed TV3-117VMA-SBM1V-03 engines (compared to TV3-117VM) is doubled:
- 60 minutes in case of one running engine (compared to 30 minutes of TV3-117VM);
- 30 minutes in case of two running engines (compared to 15 minutes of TV3-117VM).

The take-off mode power of 2000 hp on Mi-8 MTV-1 helicopter with installed TV3-117VMA-SBM1V-03 engines is sustained up to 51°C outside air temperature and 4,800m altitude compared to helicopters with TV3-117VM engines (40°C, 3,600m). The above-mentioned advantages of Mi-8 MTV-1 helicopter with TV3-117VMA-SBM1V-03 engines significantly reduce risks while performing different types of operations in the event of one engine failure.

3. Mi-8 MTV-1 helicopter with installed TV3-117VMA-SBM1V-03 engines (compared to TV3-117VM) has an increased emergency rating power of 2800 hp (compared to 2200 hp) and 60 minutes running time in case of one engine failure (compared to 2.5 minutes).

In an emergency situation, in case of one engine failure, Mi-8 MTV-1 helicopter with one TV3-117VMA-SBM1V-03 engine operating in an emergency rating (ER) is able to perform a level flight at 30°C outside air temperature and at the following altitudes with the respective maximum take-off weight:

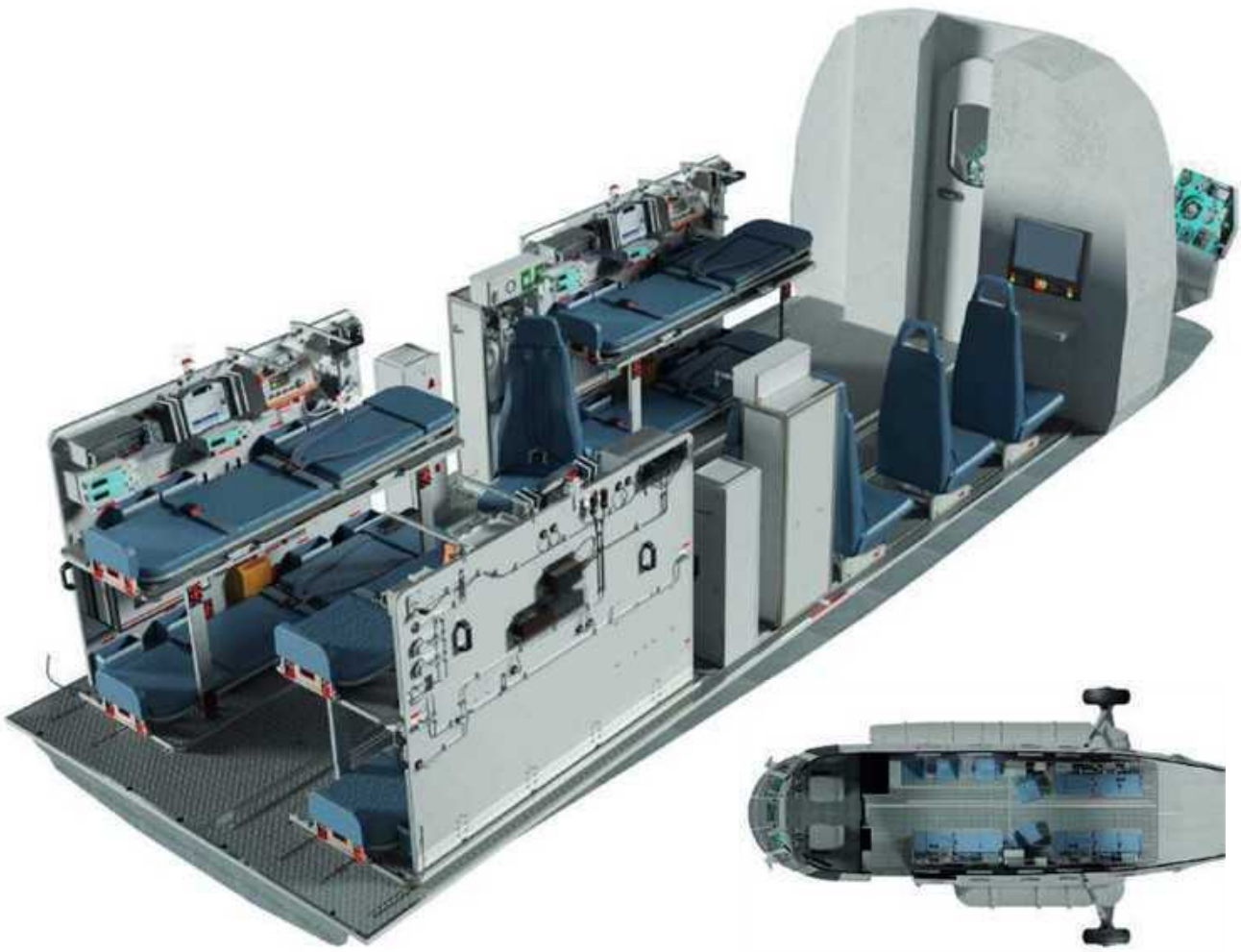
	TV3-117VMA-SBM1V-03	TV3-117V
at sea level	13000 kg	13000 kg
at 1000 m	13000 kg	12600 kg
at 2000 m	12650 kg	10800 kg
at 3000 m	11050 kg	10800 kg
at 4000 m	9800 kg	-

Mi-8 MTV-1 helicopter with one TV3-117VMA-SBM1V-03 engine operating in an emergency rating (ER) able to climb at a vertical rate of 0.8 m/s at 30°C outside air temperature and at the following altitudes with the respective maximum take-off weight:

	TV3-117VMA-SBM1V-03	TV3-117V
at sea level	13000 kg	13000 kg
at 1000 m	13000 kg	12600 kg
at 2000 m	12150 kg	10800 kg
at 3000 m	10250 kg	9600 kg
at 4000 m	9150 kg	-

CONFIGURATIONS

AIR AMBULANCE



Subconfiguration 1

Subconfiguration 2

Subconfiguration 3

COMBI: PAX & CARGO

Subconfiguration 1

Subconfiguration 2

Subconfiguration 3

PASSENGER

Subconfiguration 1

Subconfiguration 2

SEARCH-AND-RESCUE (SAR)

Subconfiguration 1

Subconfiguration 2

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