Whatever your mission, be safe in the knowledge that Heli-One is with you.

Mission-specific modifications from Heli-One

Heli-One
Excellence in Helicopter Maintenance Services
Mission ready

Right now, hundreds of helicopters around the world are flying with Heli-One modifications. Operators who provide offshore transportation, Search & Rescue, Emergency Medical Services, utility, and military and law enforcement protection have worked with Helo-ONE to optimize their aircraft for their mission profiles.

Heli-One is the world’s largest independent provider of helicopter maintenance, repair, and overhaul services. Our worldwide modification and upgrade capabilities are based on our expertise gained from real operational knowledge. Customers partner with our design team, which tailors modifications and upgrades to specific mission requirements.

This brochure brings together a small selection of the most popular modifications making a real difference to specialist customer missions.

International Approvals

We offer a significant turnaround advantage to our customers through our authority to approve STCs in-house for airworthiness jurisdictions around the world. Heli-One’s international design team includes an EASA Part 21 Design Organization Approval (DOA) in Stavanger, Norway, and a Transport Canada CAR 521-approved Design Approval Organization group (DAO) in Delta, British Columbia.

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“Customers partner with Heli-One, they have access to our unrivaled range of modification and upgrade services. We help our customers go further and do more, supporting the safety of their operations while increasing capability and decreasing their maintenance costs. Many of the modifications we offer are exclusive to Heli-One, and our capabilities continue to expand.”

Larry Alexandre, President, Heli-One

Heli-One offered technical support for the Lithuanian State Border Guard Service Eurocopter EC135 fleet.
Flight Management System

Flight Management System (FMS) with advanced and versatile functionality for both military and civil aircraft. This piece of equipment reduces workload of the system pilot while at the same time enhancing situational awareness. The CMCA9000 is a modern FMS from CMC electronics. It provides a variety of features and functions, including RNAV Routes, Standard Arrival Routes (SARs), Approach and GPS instrument direct navigation, improved holding patterns and procedures, time management, transition to hover, weather patterns, and much more.

Wire Strike Protection System

Essential for low altitude operations in both rural and urban environments. Wire Strike Protection Systems (WSP) protect helicopters during collisions with wires. When flying in unfamiliar airspace at low altitudes, WSP provides pilot and crew with peace of mind. Power lines, telephone lines or guy wires for a tower all pose major threats to safe operation of an aircraft. The WSP reduces the severity of a wire obstacle collision by diverting the wire into cutter blade assemblies.

Sirens

The NightSun SX-16 provides a 30 million-candle power controllable searchlight. This modification provides provisions for the installation of the Spectrolab SX-16 Sirens. The SX-16 provides a mobile, high-intensity light source in all environmental conditions. It is ideally suited for support on 30 different aircrafts. The number one siren and searchlight for low enforcement units, border patrol agencies and Emergency Medical Services (EMS) operations.

AN/ARC-210 Talon Programmable Digital Communication System

The Rockwell Collins Talon receiver-transmitter features a digital radio architecture that allows easy re-programming with different waveforms and operating modes. Keeping pilots and crew connected during Law Enforcement missions is crucial. The V/UHF Transceiver provides multi-mode voice and data communications in normal, secure or jam-resistant modes over the V/UHF (30-400 MHz) range. It is compatible with multiple ECCM options, including Have Quick I/II (STANAG 4246), SA TURN (STANAG 4372), TA LO N & TA LO N II (country unique identifier), SINCGARS, Harris Quicklook 1A (30-108 MHz). By offering a fully digital architecture, the TALON radio can be easily reprogrammed in the field with different waveforms and operating modes through the use of the latest signal processors.

Satellite Tracking System

The SkyTrac ISAT-200 transceiver provides total situational awareness. The SkyTrac ISAT-200 SatCom system possesses features which enable sophisticated strategic operations planning and execution. The system delivers global flight following, two-way voice, email and messaging between aircraft and the ground and aircraft to aircraft. For Law Enforcement operations, it provides cross-border integration with other emergency services to combine intelligence of cross-service assets.

Loud Hailer

Provides the pilot with a system to communicate with people on the ground.

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Weather Radar System

The Honeywell Primus 660 offers the performance of a high-power radar with the reliability and features of modern weather radars. The Primus 660 weather radar system is a lightweight, high-power, X-band digital radar designed for weather detection. The primary purpose of the system is to detect storms along the flight path, giving pilots a visual indication of rainfall intensity. The advantages of the Primus 660 are its 2.5-300 NM range, 10KW transmit power, integrated receiver/transmitter/antenna unit and enhanced BIT functions. In addition, it increases the available nose shelf space and the display can also be used to display TPOS/TVAC text maps.

Dual Hoist

The Goodrich Dual Hoist is a reliable hoist system with a check-up system. The system consists of a Goodrich Hydraulic Hoist P/N 76368-500 and a Goodrich Electric Standby Hoist P/N 76371. This upgrade will supply dual hoist systems with failsafe retain the risk high fail. Rescue hoist Model 76368-500 is on remotely mounted, hydraulically powered hoist that utilizes a unique cable guide management system with patented cable tension and carbon braking systems that allow unlimited duty cycle. This new version of variable hoist is a high-reach model with large angles and includes a cable guide system that allows 35 degree fail sight.

FLIR

Forward-looking Infrared cameras allow tracking of heat signals to neutralize the effect of darkness or poor weather conditions. From law enforcement missions tracking unusual heat signals to SAR missions in the dark – FLIR cameras provide a step-change in capability. FLIR UltraForce II EP thermal imaging systems consist of an IR camera and a 18 x zoom camera with a 9 micron pitch. A data rate can be given in either 14 bit or 12 bit. In combination with high-quality SAR systems, this high-quality camera can yield superior performance. The camera is qualified to MIL-STD. Associated equipment like the LCD display, digital recorder and video downlink is also available.

Sea Tray

For SAR and EMS operations in wet conditions, a protective covering for the aircraft floor and lower interior is imperative. This Sea Tray installation allows protection against vast quantities of water, as well as easy post-mission flushing and cleaning. A rapid and easy change of roles is a prime requirement for many operators, especially for the ambulance and SAR configurations. In the SAR role it is very likely that large quantities of water could be introduced into the cabin. This would be via the starboard door (when opened for winching), the winchman, and any rescued persons during wet operations. It is therefore necessary to cover the floor and some part of the lower interior for protection.

EuroNav System

An essential modification for those operating at sea, this MFD installation includes the EuroNav moving map system. The EuroNav upgrade improves your helicopter’s marine navigation capabilities. The modification consists of installing the EuroNav moving map system and Multi Function Display (MFD)/Radio Couplers into the aircraft.

Second LDG Light

A Second LDG Light improves search and landing light capabilities in low light. Applying a LuminoTech Model 930-500-25-1 as a second landing light improves search and landing capabilities for SAR operations in night conditions, reducing the time it takes for rescue missions to locate an emergency. Rugged and reliable, LuminoTech lights are available in 18000 lumens for military applications. MIL-Spec or original equipment may be specified as standard equipment by military forces as standard equipment.

Search & Rescue

It takes a special kind of person to be part of a Search & Rescue crew, and SAR mission profiles demand a special type of helicopter. SAR missions can happen any time day or night, in any weather conditions. Aircraft need to be technologically advanced, with technologies that help integrate the risks of changeable environments and unknown territories – plus wearable covers to find targets as quickly as possible.

As part of CHC Helicopter, who provides SAR services all over the world, Heli-One has an operator’s unique insight into mission requirements, game-changing technologies and how to overcome harsh conditions. As well as world-leading technical support, Heli-One can also offer operator consultancy to help to optimize their SAR aircraft.

Photo by Builder’s Camera

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Photo by Baldur Sveinsson
Emergency Medical Services

Helicopter EMS crews receive calls for immediate launches that involve life and death situations. Often flying to and landing in unfamiliar locations, crews have to load critical patients and transport them to hospitals as quickly as possible. Optimal awareness for difficult scene landings is just as important as rapid patient loading and unloading.

International flight safety bodies are increasingly recommending that helicopter EMS operators adopt the latest safety-enhancing avionics to manage risks to crew and patients. When customizing a helicopter for EMS missions, Heli-One knows that obstacle, weather and terrain awareness is key – as well as being able to analyse flight data after the mission.

Heli-One support ensures mission readiness for Lufttransport AS National Air Ambulance Service AW139s in Norway.

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Medical Equipment Rack

A removable rack that holds medical equipment, installed to be convenient for access. Heli-One can design and install medical racks for any type of helicopter.

Medevac

Essential for rescue operations, Heli-One’s comprehensive Medevac customizes an aircraft to the requirements of an EMS crew.

Flight Management System

The LFM-1 Flight Management System (FMS) allows EMS crews access to local hospital’s Instrument Flight Rules (IFR) approaches.

Polycon Radio

This hands-free wireless intercom system allows crew members to communicate with each other.

Enhanced Ground Proximity Warning System

Enables crews to fly through rough terrain safely, even in poor weather and visibility conditions.

CargocompartmentAccess

Allow for easy and quick access to stowed goods.

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To be continued
Oil & Gas

Mission Requirements.

Heli-One provides total support for CHC Helicopter, including customizing aircraft for offshore Operators supporting the offshore Oil & Gas industry have to deliver first-class service in tough environments. Helicopters must be rugged, safe and reliable—and also need to ensure passenger comfort and convenience. In addition, helicopters may also need to be ready for a mission role change from passenger transportation to SAR.

The latest technologies can help to optimize an aircraft for Oil & Gas operations. Specialist modifications include those designed to be deployed in the case of accidents over water. Through years of supporting CHC Helicopter’s international Oil & Gas helicopter services, Heli-One has a total understanding of offshore mission requirements.

In-flight Entertainment

In-flight technology now means your passengers can enjoy music through their headsets without the need for cables. Increasing passenger comfort, the system operates independently of the aircraft.

Brushless DC motors drive the custom designed reader mechanism, designed for fixed and rotating wing aircraft with the purpose of providing passenger headsets with music. The system operates independently of the aircraft and PA amplifier. PA amplifier failure will not hinder the satisfactory operation of the BRT-2009M2.

Shuttle Timer

Accurately monitor your aircraft’s flight time—a vital addition for those operating shuttle helicopters for short and frequent flights.

Some helicopters are used extensively in the role of shuttle helicopters, and are needed to reliably shuttles that operate frequently. As a consequence the clock time for these flights will accrue to a large proportion of their total flight time. Limitations of a Shuttle Timer will certainly occur for the actual flight times.

Emergency Locator Transmitter

Transmits the location of the helicopter in distress across multiple frequencies.

Emergency Locator Transmitter (ELT) system functions as a locator beacon and provides automatic transmission of the aircraft identification and position in the event of an emergency. The ELT is designed to operate at 121.5, 243.0 and 406 MHz. Feedback for ELT installation includes a cordless infrared means of communication, designed for fixed and rotary wing aircraft with the purpose of providing passenger headsets and PA. PA amplifier failure will not hinder the satisfactory operation of the ELT system.

Belly Mounted Life Raft Release

For offshore operations the Belly Mounted Life Raft Release provides a more accessible release mechanism in the event of an emergency.

Some helicopters are used extensively in the role of shuttle helicopters, and are needed for relatively short but numerous flights. As a consequence the deck time for these aircrafts will amount to a large proportion of their tim e in use. Installation of a Shuttle Timer will certainly occur for the actual flight times.

Light Weight Interior Trim

The Light Weight Interior Trim has been designed to reduce overall weight by using advanced composite materials.

The EXIS lighting system is an emergency escape lighting system that highlights the pilot, co-pilot, cabin doors and popout windows. This Heli-One design provides illumination of emergency exit doors and windows for at least 10 minutes following activation, giving the passengers enough time to evacuate the aircraft in case of emergency. Using individual-based lighting designs, the system supplements the OEM emergency lighting system. The lighting strips around the pilot door, co-pilot door and windows must be made from a special power supply that consists of a rechargeable battery and an inverter.

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Military

Night Vision

Improve visibility during night-time operations with this Night Vision System. Heli-One offers installation of Night Vision Goggle compatible lighting for external and internal lights. The cockpit lighting is then modified by adding filters to some of the lights, instruments, switches and indicators, and adding bezels above some of the instruments. Two overhead lights, a flexible light and goosenecks are replaced with those that are NVG compatible.

Infrared Suppression System

Safeguard your helicopter with this exhaust cooling system. The Infrared Suppression System is an exhaust cooling system that decreases the IR emissions from missile motors. The situational awareness provided by the EWS enhances the survivability of the aircraft against launched missiles on its way to the aircraft.

Ballistic Protection

Meet the requirements of TSO-C167 for the TA-500 cavity suppressor for the TA-500 cavity suppressor for all climates and environments, and in night-time operations. Combat and logistical operations in close formation necessitate avionics designed to minimize the risk of collision. Heli-One can implement modifications that help Military aircraft deliver total operations.
Helicopters are the workhorses of many industries all around the world. Surveying, inspecting, transporting, lifting, dousing, fertilizing, news gathering, touring – with the right modifications rotorcraft can turn their hand (or blades) to almost anything. Custom installations help customers seeking not just a performance edge – but also optimal standards of safety.

Heli-One supports customers in a wide range of sectors and specialisms, operating in environments ranging from mountainous terrain to built-up urban areas. Our wide range of modifications includes those that enable helicopters to perform external load operations, maximize cockpit visibility, and enhance flight endurance and efficiency.

Helijet provides passenger services in Canada. We provide PBH support on their fleet of S-76 helicopters.

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To browse our full range of modifications visit Heli-One.com