

Total Mission Management for Helicopter Operators

Honeywell and Troo Provide Integrated Solution



Whether they have a few aircraft, a few dozen or hundreds, helicopter operators need reliable mission-management capabilities to keep tabs on every aircraft in their fleet.

Regardless of their mission, operators need to stay in constant contact with helicopter systems and crews. They need to know where their aircraft are located and how they're being flown. And they need to automatically monitor mission-critical equipment and find ways to detect faults before they can become major problems.

Mission management hardware and software is all about improving safety, managing operating and maintenance costs, reducing flight crew and operations center workload, and ensuring that operators have the information they need to get the job done – every time. A highly capable mission management solution gives operators the tools they need to make information-based decisions about their assets and operations.

Industry leaders in helicopter systems and machine-to-machine connected intelligence – Honeywell and Troo – have come together to provide helicopter operators with an advanced, integrated solution to their mission management needs. The solution consists of Honeywell's advanced Sky Connect satellite communications technology and the proven TrooTrax tracking and analytics platform.

Designed to Meet Operators' Needs

Designed to meet the unique needs of helicopter operators, the Sky Connect Tracker III system builds on earlier models with new features and is ready to accommodate future upgrades. Now operating on more than 5,000 aircraft worldwide, the Sky Connect network handles more than 5 million tracking, text and telemetry messages each month.

Working in concert Honeywell's onboard SATCOM system and Troo's online software platform use the Iridium® satellite constellation to provide reliable, secure and encrypted, global communications system connectivity. At the same time, the Sky Connect system enables 3D tracking and flight data monitoring by providing continuous, almost real-time location, flight status, route and estimated time of arrival for each aircraft in the fleet. Simultaneous tracking and voice capabilities allow vital tracking and urgent text messages to occur even during lengthy voice calls. It also can report urgent or emergency conditions.

Because it is satellite-enabled, the system pinpoints aircraft location anywhere in the world. Position information can be displayed on a computer screen in an aircraft operations center or can be streamed to a mobile device, such as a tablet or smart phone. This provides users with the 24/7/365 connectivity and a secure, unified view of operations.

The Sky Connect system reduces pilot and operations center workload by enabling smart, connected machines on the ground and in the aircraft to communicate automatically without human interaction and provide alerts – to the right people, at the right time – if anything unusual is detected.

In addition, the Sky Connect Tracker III transceiver provides flight data management (FDM) capabilities, giving operators the ability to capture 64 different data parameters covering just about every aspect of flight and download them quickly and conveniently after the flight using a removable storage device. The FDM feature set integrated into the Sky Connect Tracker III gives operators a unique understanding of how their aircraft are being operated and provides additional insight into operational and maintenance problems.

With the Tracker III flight data recording capability, operators can keep an eye on a broad range of parameters including airspeed, altitude, oil pressure, torque and fuel flow. Operators can establish performance ranges and schedule alerts when actual conditions are outside prescribed parameters. Custom reports also can be created to inform business decision-making and prove compliance with existing and emerging mandates.

A new feature called last position vector provides position and system reporting, even when the aircraft is powered down. The system also provides GPS-based data records with capture of altitude, groundspeed and ground track information.

TrooTrax live Aviation Weather reporting is another recently added Sky Connect feature, providing operators with a one-package solution that overlays current and forecasted aviation weather data onto the aircraft tracking display. This information is available to any system user, including pilots who can view weather overlays on various mobile devices and operations center personnel. The weather reporting feature is highly flexible, enabling operators to customize data and its presentation to match their operational needs.

Real-time aircraft health status and maintenance alerts from the aircraft's Health and Usage Monitoring System (HUMS) can be transmitted using the Sky Connect network. This gives ground maintenance and operations people the ability to instantaneously see when a HUMS exceedance is detected, so they can be ready to service the aircraft when it lands. HUMS monitors the health of vibrating and spinning parts and record the operational context of events so that flight and maintenance crews can analyze trends and perform condition-based maintenance.

A Solution for Every Mission

The Sky Connect network was originally conceived a decade ago as a dedicated tracking system for helicopters flying critical firefighting missions. It has since evolved into a complete mission-management solution that includes a wide range of capabilities that are flexible enough to meet the needs of operators flying a wide range of helicopter missions.

For example, accurate current-position data can mean the difference between life and death in the emergency medical services field. When seconds count, Helicopter Emergency Medical Services (HEMS) operators count on knowing the exact location of every aircraft in their fleet. Dispatchers can use the Sky Connect live tracking system and mapping tool to immediately find nearby addresses and send the closest available helicopter to the scene. With live TrooTrax Aviation Weather overlays, dispatchers can make even better decisions on how to direct emergency medical service assets. Once airborne with the patient onboard, two-way voice, text and data communications links keep the flight crew, the operations center, ambulances on the ground and the emergency room team in constant contact.

Operators of helicopter fleets that serve the oil and gas industry place a high priority on safety and efficiency as they transport people and supplies to and from remote locations on land and sea, night and day, and in all kinds of weather. Knowing the exact location of each aircraft, its state and its proximity to severe weather conditions or flight restrictions is essential to getting the job done, safely and on time. Because it uses satellite communications technology the Sky Connect Tracker III enables flight crews and operations teams to stay connected over the Gulf of Mexico or a remote desert site.



Weather brief showing live Aircraft data METARs and fronts in Night Mode.



Weather brief displaying aircraft, NWS Warnings and Sigmets.



Weather brief night mode displaying European radar. Global METARs, Fronts and Storm Warnings.



Weather brief showing live Aircraft data METARs and fronts in Hybrid Satellite Mode.

Whether flying over rugged mountain peaks or storm-tossed seas, search and rescue operators can use the system to track the exact location of their aircraft and stay in constant contact. Their needs mirror those of other public safety operators – including those flying critical fire protection, law enforcement or border patrol missions. Reliable tracking and communications capabilities can mean the difference between success and failure when it comes to finding a lost hiker, deciding where to drop a load of fire retardant or pursuing a lawbreaker.

Senior executives and other helicopter passengers place a high priority on on-time performance and reliable communications – anytime or anywhere. Aircraft equipped with the latest mission management systems provide operators with the tracking services they need and VIP travelers with the connectivity they crave.

Demanding military missions require communications and tracking capabilities that are robust, reliable and global. Because they use the latest satellite communications technology, the most advanced mission management systems enable military operators to track their assets wherever they may be deployed worldwide from any location and provide helicopter crews with high-quality, reliable encrypted voice, text and data communications.

Safety, efficiency and overall cost of ownership remain priorities for helicopter operators in all mission categories. Use of the latest mission management system technology can help them achieve all this and more.

Find Out More

For more information on the Sky Connect Tracker III visit <http://aerospace.honeywell.com/skyconnect> or TROO at <http://troo.com/>

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Sky Connect Tracker III

- Simultaneous voice, tracking and messaging functions deliver mission management capabilities – **even in the most remote areas – anywhere in the world**
- Only product of its type to be **developed specifically for the aviation industry**
- Pre-stored messages with data fields and a full telephone keypad make text messaging an effective way for crews to **communicate up-to-date, accurate flight and operation information**
- System's lightweight transceiver sends encrypted **GPS-based position reports at automated intervals** using secure data protocols
- Innovative alerting system **can automatically send a final position/status report** after power is removed from the aircraft if needed
- Anyone with a **Wi-Fi connection and authorized access to the system** can send and receive messages from the aircraft
- Modular components that can be **easily switched** between aircraft
- Sky Connect Tracker III can integrate with **Honeywell's Health and Usage Monitoring System (HUMS)**, allowing the system to send **real-time aircraft health status and maintenance alerts**

