

ROCKWELL COLLINS PRO LINE 21™ AVIONICS SYSTEM

Innovative flight deck technology for the Gulfstream® G150



Achieve a new level of situational awareness and operational efficiency. With the Pro Line 21™ system, superior information comes standard.

With Pro Line 21, your focus is where it needs to be – on flying the aircraft. Our fully integrated flight deck for the Gulfstream® G150 significantly enhances crew situational awareness, providing superior operational efficiency and built-in growth capability to meet evolving airspace and regulatory requirements.

**Rockwell
Collins**

Building trust every day

Smart avionics for your Gulfstream G150 flight deck



Four large 12 x 10-inch adaptive flight displays combine with Rockwell Collins FMS-6000 flight management systems to enhance flight deck information management without adding workload. The flight deck is shown with optional electronic charts and uplink weather.

Pro Line 21 offers Gulfstream G150 pilots the latest advances in avionics technology with the ability to evolve as airspace requirements change. The system integrates flight information into intuitive, easy-to-interpret display formats with safety-enhancing reversion capability.

Pro Line 21 innovations for the Gulfstream G150 include four 12 x 10-inch adaptive flight displays. Fully integrated with all on-board avionics, the large active matrix liquid crystal displays (AMLCDs) provide the information that crews need to enhance performance and decision making.

Standard pilot and copilot primary flight displays are teamed with dual MFDs and dual Rockwell Collins FMS-6000 Flight Management Systems to streamline and automate input functions. All primary flight, navigation, engine and sensor data is graphically presented for easy scanning and integration. This helps to ensure more eyes-up time at the controls, giving pilots a better overall view of their real-time flight situation. Large displays also allow Gulfstream G150 pilots to enjoy the operation benefits of more display area without the increased clutter, weight and power requirements of previous generation displays.



Our Pro Line 21 CNS sensors provide pilots with the technology to meet new regulatory and operating requirements – including the transition from voice to data communications. The AHRS-3000 Attitude Heading Reference System (AHRS) incorporates a digital quartz gyro that significantly reduces system size while increasing accuracy and reliability.

The Rockwell Collins Engine Indication and Crew Alert System (EICAS) provides critical systems information for an enhanced level of crew awareness and confidence. Our TCAS-4000 Traffic Alert Collision Avoidance System and the TWR-850 Turbulence-detection Weather Radar system further enhance the Gulfstream G150's overall performance, reliability and value.

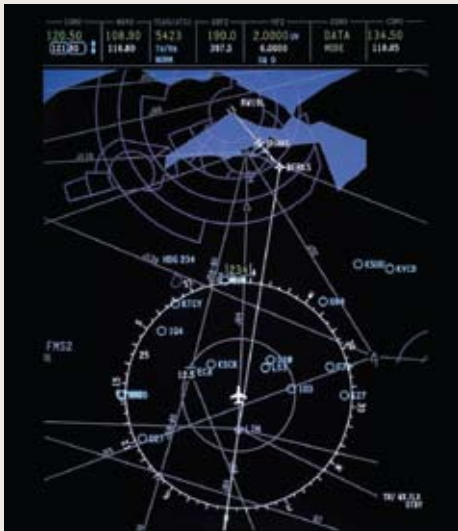
Standard flight deck features

- Four 12 x 10-inch adaptive flight displays
- Dual FMS-6000 flight management systems with takeoff and landing performance data
- Engine Indication and Crew Alerting System
- TCAS II
- Pro Line 21 CNS radios
- Single HF communications system with SELCAL™ system
- Turbulence-detection weather radar
- Dual-channel automatic flight control system
- Radio altimeter
- Enhanced Mode S surveillance
- Avionics maintenance diagnostics system

An integrated approach to flight deck efficiency

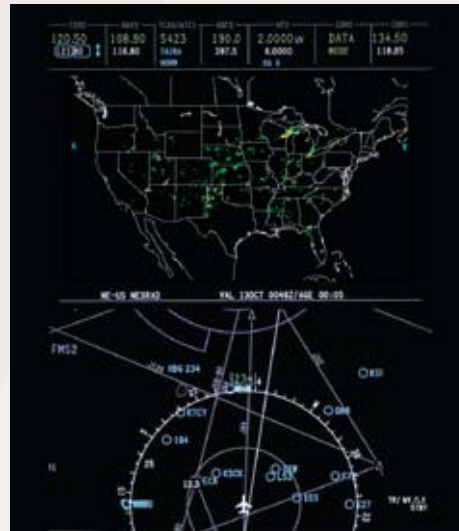
Flight information that keeps pilots a step ahead

Key to many of the advancements found in Pro Line 21 is the optional Integrated Flight Information System (IFIS). With Pro Line 21 and the optional IFIS you have enhanced situational awareness enabling your flight crew to make better decisions. Options including electronic charts with ownship position during approach and taxi, and graphical weather and enhanced maps, are all available at a moment's notice. Now, information that would otherwise only be shown on multiple sources – or even in printed books – is intuitively presented on your aircraft's large active matrix liquid crystal MFDs. Chartlink™, a patented Rockwell Collins feature, reduces pilot workload by integrating the FMS and electronic charts to automatically sequence relevant charts for the flight plan.



Enhanced map overlays

Enhanced map overlays simplify routine tasks, such as establishing visual contact with the airport, by displaying aircraft position relative to water features and geopolitical boundaries on the MFD map. High- and low-altitude airway overlays eliminate the need to continually refer to paper charts; in response to Air Traffic Control changes, you can locate new airway assignments faster and easier than ever before. With enhanced map overlays, you also know your aircraft's exact position as it relates to restricted airspace and have the information needed to make informed decisions when flight plan deviations may be necessary due to weather or traffic.



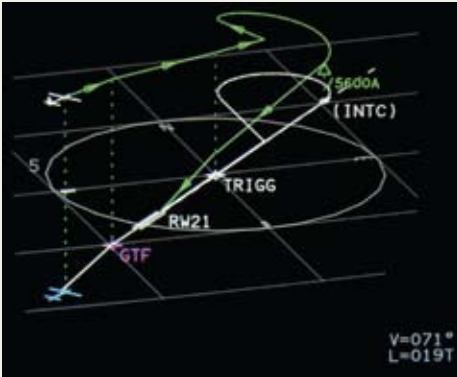
Graphical weather

Pilots have a powerful new tool to help them make more strategic decisions about their flight plans. By combining optional strategic weather information provided by IFIS with the baseline airborne turbulence-detection weather radar, you can look at the big weather picture prior to each flight and during the flight as weather develops. As a result, you can choose the most comfortable and efficient flight path around hazardous weather. XM satellite broadcast weather as well as interactive request/reply weather are available.



Electronic charting

IFIS replaces heavy and bulky printed charts with large-format, high-resolution electronic charts. Now, critical departure, arrival, approach and airport information is instantly available to the flight crew. Peace of mind on the airport surface is enhanced with a clear, easy-to-interpret display of all runways and taxiways.



Advanced flight management

Fully integrated within the Pro Line 21 avionics system, the Rockwell Collins FMS-6000 combines workload-reducing automation on the flight deck with true multisensor navigation capability. The FMS-6000 synchronizes operation of all lateral and vertical flight plans through coupled or advisory VNAV capability, supports time/fuel planning and automatically flies en route, terminal and approach procedures, as well as providing missed-approach guidance.

The system's optional 3-D flight plan map is an intuitive representation of the FMS flight plan and performance-predicted flight path, enabling flight crews to view the intended flight path, including waypoints and altitude constraints through an easy-to-interpret 3-D map.



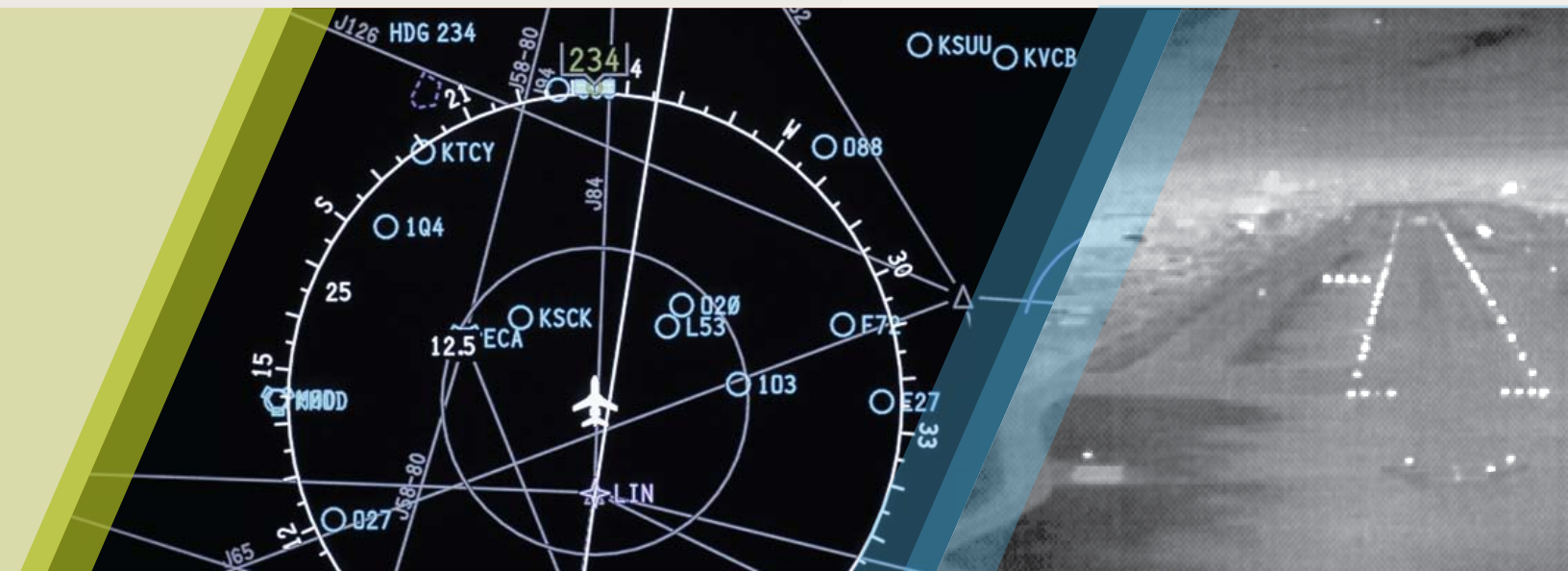
Takeoff and landing data

The FMS-6000's performance functions enable automatic calculation of vital takeoff and landing performance parameters – including Vs speeds, weight limits and runway length requirements – based on the aircraft's flight manual parameters. Together, these features help streamline and simplify the flight deck.



Simplified database management

The DBU-5000 is a USB-based database unit capable of loading both the flight management system (FMS) and the optional IFIS, as well as downloads from the Maintenance Diagnostic System.



Enhance your Gulfstream G150 even more

Options available

3-D Flight Plan Map

3-D Flight Plan Map is an innovative three-dimensional graphical representation of the FMS flight plan and performance-predicted flight path. Real-time display of the aircraft's present position both laterally and vertically with respect to the 3-D flight plan improves situational awareness. Pilots can easily adjust the viewing angle via a manual control, and can plan collaboratively for departures and arrivals by using the "MFD Advance" key on the CDU for a three dimensional preview of the flight plan.

Single or Dual Integrated Flight Information System

Our Integrated Flight Information System (IFIS) enhances situational awareness, reduces pilot workload and improves overall flight deck efficiency through available capabilities that include enhanced map overlays, graphical weather and electronic charting. At the heart of our IFIS system is the Rockwell Collins File Server Unit (FSU), utilizing a high-bandwidth Ethernet network to interface with our Pro Line 21 MFDs.

Enhanced Map Overlays for IFIS

This option adds functionality to your IFIS to increase situational awareness through the addition of map overlays including high- and low-altitude airways, restricted and controlled airspace, and geopolitical information including state and international boundaries, rivers, lakes and ocean coastlines.

Electronic Charts for IFIS

For improved flight deck organization and situational awareness, electronic charts provide approach plates, airport diagrams, chart NOTAMs and procedures, such as Instrument Departure Procedures (DPs) and Standard Terminal Arrival Routes (STARs), for display on the MFD. Through integration with the aircraft's FMS, information such as georeferenced aircraft position is overlaid on the system's electronic charts and airport diagrams, allowing you to monitor actual aircraft position. As a result, operating in low visibility conditions at night or at unfamiliar airports becomes much easier and more intuitive.

XM Broadcast Graphical Weather for IFIS (Continental U.S.)

The broadcast graphical weather system provides the capability to display U.S. graphical and textual weather information on the MFD(s). Available weather information includes:

- NEXRAD (1 NM resolution)
- Echo tops and movement
- Graphical and textual METARs
- Graphical and textual SIGMETs
- Textual AIRMETs and TAFs



Data Link Graphical Weather for IFIS

This option provides the capability to receive graphical weather information via the data link system for display on the MFD(s). Available weather graphics include:

- › NEXRAD images (Continental U.S., 7 NM resolution)
- › NEXRAD with tops/movement (Continental U.S.)
- › Icing
- › Winds/temps
- › Turbulence
- › Weather depiction

Pilots manage the data link information using the FMS CDU. This option also requires selection of the data link system.

Data Link System

Our data link system consists of a third VHF-4000 radio and the addition of communications management function in the Radio Interface Unit. The system reduces crew workload by digitally transferring mission information between the aircraft, information service providers and air traffic control.

Capabilities include support for graphical weather as well as textual weather, FMS flight plan uplink, aircraft operational communications, text messaging and air traffic services functions including taxi, pre-departure and oceanic clearances, ATIS, NOTAMS and TWIP.

Checklist Capability

The Rockwell Collins Maintenance Diagnostic Computer provides an electronic checklist that reduces pilot workload and reduces reliance on paper documents in the flight deck. Checklists cover normal operations and specific crew notes as well as abnormal and emergency operations.

Second ADF

A second automatic direction finder (ADF) receiver can be added which offers redundancy while enabling the flight crew to cross-check navigational information.

Second HF Communications System

The HF-9000 transceiver enables long-range communications in remote and oceanic locations. A dual installation provides redundancy for enhanced dispatch capability.

Global service and support from a trusted source.

Life cycle service solutions you can count on. From initial delivery and throughout your Gulfstream G150 life cycle, we are here with comprehensive service and support solutions. Our worldwide support network offers life cycle support solutions from options including performance-based maintenance and repairs, engineered solutions, rental exchange, training and simulation solutions; all backed by the best turnaround times in the industry. Rockwell Collins delivers reliable solutions, anywhere, anytime – every time.

Building trust every day.

Rockwell Collins delivers smart communication and aviation electronic solutions to customers worldwide. Backed by a global network of service and support, we stand committed to putting technology and practical innovation to work for you whenever and wherever you need us. In this way, working together, we build trust. Every day.

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