

ROCKWELL COLLINS PRO LINE 21™ AVIONICS SYSTEM

Innovative flight deck technology for the Bombardier* Learjet 60 XR*



Image provided courtesy of Bombardier Inc.

Achieve a new level of situational awareness and operational efficiency. With Pro Line 21™, 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 Bombardier Learjet 60 XR 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 Bombardier Learjet 60 XR flight deck



Four large 10 x 8-inch adaptive flight displays combine with dual Rockwell Collins FMS-5000 flight management systems to enhance flight deck information management without adding workload.

Combining the latest-technology sensors and displays in an integrated package that is both smaller and lighter than traditional avionics, the Rockwell Collins Pro Line 21 suite for the Bombardier Learjet 60 XR is a breakthrough in flight deck efficiency and pilot workload reduction.

Standard pilot and copilot primary flight displays (PFDs) are teamed with two enhanced central multifunction displays (MFDs), Rockwell Collins FMS-5000 Flight Management System and dual

radio tuning units (RTUs) to streamline and automate input functions. This helps to ensure more eyes-up time at the controls, giving pilots a better overall view of their flight situation.

In addition, automated maintenance diagnostics and electronic checklist functions are included in the Learjet 60 XR's standard package. Together, these features help streamline and simplify flight deck performance while enhancing safety of flight.



Standard flight deck features

- › Four 10 x 8-inch LCD displays
- › Dual FMS-5000 with coupled VNAV and aircraft performance
- › Single Integrated Flight Information System (IFIS) with electronic charts
- › Dual RTU-4220 radio tuning units
- › Pro Line CNS radios
- › Single automatic direction finder (ADF)
- › TCAS-4000 (TCAS II)
- › Engine indication system (EIS)
- › Maintenance diagnostic system (MDS)
- › Electronic checklist
- › Solid-state weather radar

An integrated approach to flight deck efficiency

When the first Bombardier Learjet 60 was delivered, Rockwell Collins was there with our Pro Line 4 avionics suite. Today, the Bombardier Learjet 60 XR continues the legend of Learjet speed and style, and introduces one of the most advanced integrated flight deck in its class – our Pro Line 21 avionics system. Working side-by-side with Bombardier, we continue to advance innovative flight deck functionality for the Bombardier Learjet 60 XR as technology and the global airspace evolve.

Flight information that keeps pilots a step ahead

With Pro Line 21 and our IFIS, you have enhanced situational awareness enabling your flight crew to make better decisions. Electronic charts with ownship position during approach and taxi, and optional 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. You have the option to include a second IFIS providing system redundancy to support operations without paper terminal charts.



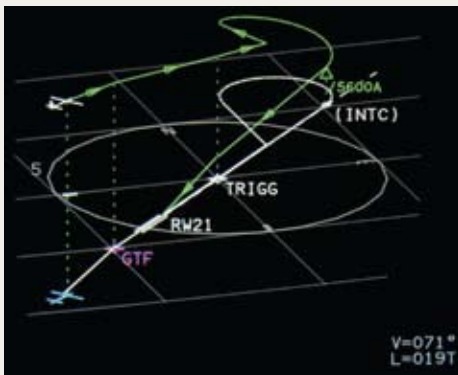


Image provided courtesy of Bombardier Inc.

Advanced flight management made simple

Advanced flight planning

Fully integrated with the Pro Line 21 avionics system, the Rockwell Collins FMS-5000 combines workload-reducing automation on the flight deck with true multisensor navigation capability.



Teamed with the Rockwell Collins GPS-4000A Global Positioning System receiver, the FMS-5000 synchronizes operation of all lateral and vertical flight plans, supports time/fuel planning and automatically flies en route, terminal and approach procedures (as well as providing missed-approach guidance), while offering graphical map support, automatic FMS-to-ILS (instrument landing system) transfers and steering/pitch commands to the autopilot. Full-profile, coupled or advisory VNAV capability offers complete lateral and vertical navigation programming and automation for all phases of flight. This VNAV tracking capability ensures that altitude and speed constraints are met at waypoints or step-down fixes, speed limits at altitudes are honored and the vertical flight profile, as specified by the pilot, is followed precisely.

In addition, the Bombardier Learjet 60 XR V-speed database enables automatic calculation of vital takeoff and landing performance data – including Vspeeds, weight limits and runway length requirements, based on the aircraft's flight manual parameters. Furthermore, three-dimensional flight planning capability is available as an option. Pilots can view their intended flight path, including waypoints and altitude constraints, in an easy to interpret 3-D map that allows crews to adjust the perspective.



Radio management

Rockwell Collins RTUs provide centralized control of the Learjet 60 XR's CNS sensors. Selection and entry of all COM/NAV frequencies, transponder codes and TCAS functions are logical and intuitive. A common control scheme for all tuning functions makes pilot interface more efficient.



Enhance your Bombardier Learjet 60 XR even more

Options available

3-D FMS Maps

3-D FMS 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.

Second IFIS with Electronic Charts

This option adds a second File Server Unit (FSU) to complement the standard IFIS FSU. The dual FSU configuration provides redundancy to support operations without paper charts. Each FSU independently displays electronic charts on each MFD.

Enhanced Map Overlays

This option adds functionality to our 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.

XM Weather

The XM Graphical Weather system provides the capability to display U.S. only graphical and textual weather information on the two MFDs. Available weather information includes:

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



Universal Weather

When coupled with the optional Data Link with Third VHF, this option provides the capability to receive graphical weather information for display on the MFD(s). Available weather graphics include:

- NEXRAD images (Continental United States, 7 NM resolution)
- NEXRAD with tops/movement (Continental United States)
- Icing
- Winds/temps
- Turbulence
- Weather depiction

Data Link with Third VHF

This option reduces crew workload by digitally transferring information between the aircraft, information service providers and air traffic control. Pilots manage and display the data link information using the FMS CDU. Capabilities include 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. This option is also required when the Universal Weather option is selected.

TWR-850 Enhanced Weather Radar

This option gives flight crews the information they need to select the smoothest, most efficient routes by detecting weather at ranges up to 300 n.m. and precipitation-related turbulence at ranges up to 50 n.m. The TWR-850 is an all-digital design and uses Doppler™ frequency shift technology to detect turbulence.

Global service and support from a trusted source.

Life cycle service solutions you can count on. From initial delivery and throughout your Learjet 60 XR 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 electronics 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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