Innovative flight deck technology for the Bombardier* Challenger 300*

With Pro Line 21, your focus is where it needs to be – on flying the aircraft. Our fully integrated flight deck for the Bombardier* Challenger 300* significantly enhances crew situational awareness, providing superior operational efficiency and built-in growth capability to meet evolving airspace and regulatory requirements.

Achieve a new level of situational awareness and operational efficiency. With Pro Line 21™, superior information comes standard.
Rockwell Collins Pro Line 21 solution for the Bombardier Challenger 300 includes four 12 x 10-inch adaptive flight displays. Standard pilot and copilot primary flight displays (PFDs) are teamed with dual multifunction displays (MFDs) and our FMS-5000 Flight Management System Control Display Unit (CDU) to streamline and automate input functions. All primary flight, navigation, engine and sensor data are graphically presented for easy scanning and integration.

The Engine Indication and Crew Alerting System (EICAS) with aircraft system synoptic diagrams provide critical system information for an enhanced level of crew awareness and confidence. The maintenance diagnostic computer (MDC) provides aircraft level system maintenance status and troubleshooting aid. The MDC also provides electronic checklists covering normal, abnormal and emergency operations; another example of system integration and flight crew workload reduction.
STANDARD FLIGHT DECK FEATURES

- Four 12 x 10-inch adaptive flight displays
- Single Integrated Flight Information System (IFIS) with electronic charts
- Engine indication and crew alerting system with system synoptic diagrams
- Dual FMS-5000 flight management systems
- TCAS II
- Pro Line 21 CNS radios
- Dual HF communications system with SELCAL
- Solid-state weather radar
- Maintenance diagnostic computer
- Electronic checklists
- Autopilot/dual flight directors
An integrated approach to flight deck efficiency

The Bombardier Challenger 300 set a new standard in the super-midsize business jet market. From the very beginning, Rockwell Collins has been there with our Pro Line 21 integrated avionics system. Working side-by-side with Bombardier, we continue to advance innovative flight deck functionality for the Bombardier Challenger 300 as technology and the global airspace evolve.

Flight information that keeps pilots a step ahead

With Pro Line 21 and IFIS, you have enhanced situational awareness enabling your flight crew to make better decisions. Electronic charts with ownship position during approach and taxi, as well as optional graphical weather and enhanced maps are all available at a moments 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 flight management system (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.

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 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 made simple

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. The FMS-5000 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 a state-of-the-art 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.

The FMS-5000’s optional performance functions enable automatic calculation of vital takeoff and landing performance parameters, including Vspeeds, weight limits and runway length requirements based on the aircraft’s flight manual parameters. Together, these features help streamline and simplify flight deck performance while enhancing safety of flight.

Simplified database management

The DBU-5000 is a USB-based database unit capable of loading the flight management system (FMS) as well as downloads from the Maintenance Diagnostic System. The database unit significantly reduces the time required for data loading.
Enhance your Bombardier Challenger 300 even more

Options available

**Second Integrated Flight Information System with Electronic Charts**
This option adds a second FSU to complement the standard FSU. The dual FSU configuration provides the redundancy required for a chartless capable cockpit. Each FSU independently displays electronic charts on each MFD.

**Integrated FMS Vspeeds**
With this optional upgrade, the Rockwell Collins FMS calculates takeoff values for Vspeeds, N1, target pitch attitude, required field length, and landing values for Vref and Vapp. The information is automatically transferred to the primary flight displays and multifunction displays for intuitive reference during takeoff and landing.

**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 (Continental United States)**
This option gives pilots a powerful new tool to help make strategic decisions about en route weather by providing a continuously updated picture of weather patterns across the entire route, which allows pilots to see and plan options long before weather becomes an issue. 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 SIGMETs
- Textual AIRMETs and TAFs

**Data Link with Graphical Weather Maps**
This option provides the capability to display graphical and textual weather information on the FMS CDU, and additional data link capabilities that reduce crew workload by digitally transferring mission information between the aircraft, information service providers and air traffic control. Available graphical weather information includes:
- NEXRAD images (Continental United States, 7 NM resolution)
- NEXRAD with tops/movement (Continental United States)
- Icing
- Turbulence
- Winds/temps
- Weather depiction

Other capabilities include text, weather, FMS flight plan uplink, aircraft operational communications and text messaging, and air traffic services functions including taxi, pre-departure, and oceanic clearances, ATIS, NOTAMS, TWIP and future growth to controller pilot data link.
Data Link Graphical Weather Display on MFD
This option provides the capability to display the data link graphical weather on the two MFDs, complementing the Data Link with Graphical Weather Maps option. The images are requested from the ground station via the CDUs. This option requires the Data Link with Graphical Weather Maps option.

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.

Turbulence-detection Weather Radar
The Rockwell Collins TWR-850 Turbulence-detection Weather Radar detects weather at ranges up to 300 n.m. and precipitation-related turbulence at ranges up to 50 n.m. This gives flight crews the information they need to select the smoothest, most efficient routes. Our TWR-850’s solid-state design provides significant improvements over magnetron-based systems in performance and reliability.

Lightning Detection System
The L3 WX-1000 detects and displays electrical activity associated with thunderstorms and can be displayed as a weather radar overlay on Rockwell Collins Pro Line 21 multifunction display. This option includes a lightning processor and antenna.

Second Automatic Direction Finder
A second Rockwell Collins Automatic Direction Finder (ADF) receiver can be added offering redundancy while enabling the flight crew to cross-check navigational information. The ADF has a frequency range of 190.0 to 1799.5 kHz, selectable in 500 Hz increments.
Global service and support from a trusted source.

Life cycle service solutions you can count on. From initial delivery and throughout your Challenger 300 life cycle, we are here with comprehensive service and support solutions. Backed by our worldwide support network, we offer customized solutions from options that include 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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