With Pro Line 21, your focus is where it needs to be – on flying the aircraft. Our fully integrated flight deck for the CJ1+/CJ2+ significantly enhances crew situational awareness, providing superior operational efficiency and built-in growth capability to meet evolving airspace and regulatory requirements.
Pro Line 21: A new level of integration
Cessna’s Citation CJ1+/CJ2+ equipped with Pro Line 21 continues a long standing relationship between Cessna Aircraft and Rockwell Collins. Since it was first introduced in 1993, this business jet offers the most advanced, fully integrated flight deck in its class — Pro Line 21.

Designed to fly in today’s and tomorrow’s congested airspace, the CJ1+/CJ2+’s avionics provide superior operational efficiency, enhanced situational awareness and built-in growth capabilities to meet evolving airspace and regulatory requirements. Integral to the system are outstanding dispatch reliability, integrated radio-tuning, Integrated Flight Information System (IFIS) and next-generation Flight Management System (FMS).

The three display system enables tremendous flexibility in how flight and system information are presented. We have refined the human machine interface to bring about a new level of ease in flight. Flight information is presented in an intuitive, easy-to-interpret format with safety-enhancing reversion capability.

Operational efficiency and less paper with IFIS

Rockwell Collins industry-leading IFIS is an integral component to the CJ1+/CJ2+ and provides a higher level of operational efficiency and convenience by introducing a path to paperless flight deck. At the heart of the system is the File Server Unit (FSU), which uses a high-bandwidth Ethernet link to interface with the Pro Line 21 MFDs. IFIS advanced features greatly enhance situational awareness and flight crew decision making, including electronic charting, graphical weather and enhanced maps for your flight deck.

Enhanced map overlays

Pro Line 21’s enhanced graphical capabilities and fully integrated architecture enable pilots to overlay a number of safety-enhancing database and sensor technologies on the standard flight display. Water features, geopolitical and flight plan mapping features, airspace boundaries and high- and low-altitude airway overlays can all be depicted — giving pilots a complete picture of the current navigation situation.

Graphical weather

Emerging data link technology, integrated with Pro Line 21’s IFIS applications, enables CJ1+/CJ2+ pilots to receive and overlay real-time graphical weather updates (in NEXRAD and additional formats) for a continuously updated picture of weather patterns across the entire route-of-flight. XM satellite broadcast weather is standard; data link request/reply weather is available as an option.

Electronic charting

Thanks to electronic charting capabilities available on the CJ1+/CJ2+, approaches, Standard Instrument Departures (SIDs), Standard Terminal Arrival Routes (STARs) and airport diagrams can all be stored for pilot reference on the Pro Line 21 adaptive flight displays. Chartlink™, a patented Rockwell Collins feature, ensures seamless integration between the FMS and electronic charts to automatically sequence relevant charts for a flight plan. The aircraft’s “ownship position” greatly enhances the flight crew’s situational awareness on the ground and in the air.
Standard CJ1+/CJ2+ Flight Deck

- Three 10 x 8-inch LCDs
- Single FMS-3000 with coupled VNAV and RNP 0.3 capability
- RTU-4220 radio tuning units
- Pro Line 21 CNS radios
- File Server Unit (FSU) with enhanced map overlays
- Maintenance diagnostic system (MDS)
- Solid-state weather radar
- Single automatic direction finder (ADF)
- XM Broadcast Weather
- Electronic charts
Advanced flight management has never been so simple

**Reduce your workload with our next-generation FMS**

Fully integrated with the Pro Line 21 avionics system, our advanced FMS-3200 combines workload-reducing automation on the flight deck with true multi-sensor navigation capability. The result – seamless takeoff-to-touchdown flight guidance, direct-to-anywhere simplicity and significantly improved eyes-up display capability for the CJ1+/CJ2+.

Used in conjunction with the GPS-4000S WAAS receiver, the FMS-3200 synchronizes operation of all lateral and vertical flight plans, supports time/fuel planning, and automatically flies enroute, terminal and approach procedures (including missed-approach guidance), while offering automatic FMS-ILS transfers, and steering/pitch commands to the autopilot. Furthermore, the FMS incorporates many features such as Radius to Fix (RF) legs and step-down approaches required for the Required Navigation Performance (RNP) environment. Full profile, coupled or advisory VNAV capability, including WAAS LPV approaches, 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.

The FMS integrates aircraft performance capability. It can automatically calculate vital takeoff and landing performance data – including V-speeds, runway length requirements and weight limits based on the CJ1+/CJ2+’s flight manual parameters. V-speeds are automatically transferred to the primary flight displays for easy reference during takeoff.

The FMS also works seamlessly in conjunction with the electronic charts (optional) through Chartlink™, a patented Rockwell Collins feature. As the departure and destination airports are entered into the FMS, the appropriate electronic charts are automatically lined up, including possible alternates. The benefit of this feature can be realized if Air Traffic Control issues new routing to a new approach or a new runway. The pilot can easily change to the appropriate charts through the Charts menu.
Optional upgrades

- **Second FMS** – Installation of a second FMS-3200 and second GPS-4000S provides the redundancy and reliability required for enhanced dispatch capability. The additional FMS enhances crew resource management by allowing independent operation by each crew member. For convenience, it may also be synchronized with the pilot-side FMS.

- **Second DME** – A second DME provides redundancy and the ability to cross-check navigational information. It also provides additional information for the FMS to use in calculating aircraft position.

- **Second Automatic Direction Finder (ADF)** – A second ADF receiver can be added which offers 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.

- **TCAS-4000 (TCAS II)** – Our TCAS-4000 (TCAS II) provides total situational awareness of impending traffic conflicts, including the display of resolution information for immediate threats. Rockwell Collins TCAS/ACAS supports future growth to Automatic Dependent Surveillance-Broadcast (ADS-B) capabilities with features that include: DO-185A Change 7 software, enhanced target surveillance, passive display range greater than 100 nm and enhanced escape/coordination maneuvers.

- **Graphical weather (request/reply)** – This option enhances your IFIS system by providing menuing, uplink and downlink of specific graphical weather and flight service requests. Graphical weather allows your uplinked images to be stored in the FSU and may be recalled upon request. Images will generally be more recent than the broadcast service. This requires VHF data link capability and an annual subscription.

- **Data Link** – Our data link system consists of a third VHF-4000 radio and the addition of communications management function in the Radio Interface Unit. Data link provides timely and reliable communications. It supports air traffic management, weather services through Universal Weather and aircraft operational communications, as well as future growth as CNS/ATM evolves.

- **Electronic charts** – This feature enhances your IFIS system by allowing display of Jeppesen electronic approach and departure charts and airport taxi diagrams on the multifunction display (MFD). This also includes Rockwell Collins’ patented Chartlink™, which automatically loads the appropriate charts based upon the flight plan data from our FMS. Requires an annual subscription.

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

- **HF** – The HF 9000 radio transceiver is the industry standard and operates over the 2 MHz - 30 MHz frequency band and is suitable for remote/oceanic operations.
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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