

BOMBARDIER

BACKGROUNDER

SPECIALIZED AIRCRAFT

Background: Bombardier has the longest track record and the widest range of experience of any special mission aircraft provider. The company's rich heritage of developing aircraft for governments, armed forces, and specialized commercial operators stretches back more than 40 years and tens of thousands of flight hours.

Bombardier has designed, built and delivered well over 300 special mission aircraft for customers worldwide since January 1965, when a *Learjet 23* aircraft was quickly reconfigured from a standard corporate interior and flew a medical evacuation mission. Today, the *Learjet*, *Challenger*, and *Global* business jets, the *Q-Series* turboprop and the *CRJ Series* airliners provide a full spectrum of special mission capabilities that can meet most current requirements. With the largest fleet of special mission aircraft in corporate aviation, most members of Bombardier's comprehensive business jet and commercial aircraft family are firmly established in-service with special mission operators. For future mission concepts, Bombardier continues to develop new Specialized Aircraft Solutions to maintain its market-leading status.

Status: Bombardier aircraft undertake a wide range of roles and missions; specifically, the company's Specialized Aircraft Solutions unit has identified several trends for current and future mission areas.

Airborne C4ISR

Any mission requiring surveillance, monitoring, intelligence gathering, airborne coordination or simply national presence falls under the heading of C4ISR (Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance). Bombardier aircraft are already well established in these roles, particularly in the increasingly sophisticated air-to-ground surveillance environment, including in the overland and maritime domains.

The ASTOR (Airborne Stand-Off Radar) program for Britain's Royal Air Force (RAF) underlines the credentials of the *Global Express* aircraft as a superior C4ISR platform.

As part of a team led by Raytheon Systems, Bombardier won the UK's ASTOR competition in 1999, supplying five *Global Express* aircraft for the program. Bombardier was responsible for the simulation and modeling of the airframe modifications, as well as a 300-hour flight test program. The ASTOR platform, known as the Sentinel R.Mk 1, is equipped with a Raytheon dual-mode SAR/MTI radar, mission management systems, MILSATCOM, and the latest in communications and data link equipment. The Sentinel R.Mk 1 is the only dedicated NATO C4ISR aircraft in operation outside the United States.

The success of the ASTOR program has led to the *Global Express* aircraft being considered as a candidate platform for other C4ISR requirements worldwide.

Key customer nations for Bombardier's surveillance and patrol aircraft include the United Kingdom (*Global Express* aircraft), Korea (*Challenger 604* aircraft), Australia (*Q-Series* aircraft), Denmark (*Challenger 604* aircraft), Sweden (*Q-Series* aircraft), Iceland (*Q-Series* aircraft) and the United States (*Q-Series* aircraft). The US Department of Homeland Security has acquired *Q200* aircraft for counter-narcotic/border surveillance missions.

Aircrew Training

Bombardier aircraft are currently deployed for training, evaluation and mission readiness procedures with a host of government and military operators. Specialized functions extend beyond training for aircrews (pilots, navigators etc.) to include threat simulation, electronic warfare and airborne target presentations to train air defense systems operators on land, at sea and in the air.

Some well-established operators include L-3 Flight International (United States), Phoenix Air (United States), SAAB-Nyge Aero (Sweden), Pel-Air Aviation (Australia) and the United Arab Emirates Navy.

Bombardier's experience and comprehensive product line makes it a strong contender for future military flight crew training requirements around the world.

Executive Transport and Logistic Support

Bombardier aircraft transport high priority passengers and essential cargo for air forces worldwide. The United States Air Force alone has an extensive fleet of *Learjet 35A* (C-21A) aircraft that undertake operational support airlift missions around the clock and across the globe.

Other nations that call on Bombardier aircraft for head of state, ministerial, government and senior military transportation include Australia, Canada, Germany, Ireland, Czech Republic, Denmark, Malaysia, and the United States. As more nations become integrated with long-standing allied organizations, they turn to Bombardier aircraft as a reliable and highly supportable means of transportation. The Government of Germany selected the *Global 5000* aircraft as its replacement platform for VIP transportation.

Search and Rescue, Disaster Response

Bombardier aircraft undertake life-saving missions for a range of operators, including air forces and agencies in Australia, Canada, Japan, Switzerland, Sweden, Iceland, Korea, Malaysia and the United States. Bombardier aircraft can operate not only in the traditional sea-going search and rescue (SAR) role, but also in providing capability to civil authorities in disaster relief scenarios.

Several aircraft/capabilities options are available to support rescue, recovery and restoration work following hurricanes, flooding or other natural disasters, including the *Bombardier 415* amphibious aircraft. Additionally, there are emerging requirements for supporting potential weapons of mass destruction (WMD) events in several countries worldwide.

Bombardier aircraft already have a long history of air ambulance and Medevac flying. The *Challenger 604* aircraft has emerged as a preferred aircraft for air ambulance missions. REGA, Swiss Air-Ambulance Ltd. has been operating a fleet of three *Challenger 604* aircraft for air ambulance operations since 2003. Based in Zurich, the aircraft are equipped with two intensive care stations and the latest specialized life-support equipment. The Government of Québec operates two *Challenger 601* aircraft. One of these aircraft is used exclusively in a Medevac role and has accumulated close to 30,000 flight hours and 35,000 landings over a twenty year period.

Flight Testing, Airways Calibration, Research & Development

Bombardier aircraft are in use for airborne test and trial work with several aerospace corporations and other centres of excellence for technology development. The US Federal Aviation Administration (FAA) operate a *Global 5000* aircraft as an airborne research laboratory for testing a variety of state-of-the-art equipment related to communications and navigation systems. Other customers include industry leaders such as NASA and Northrop Grumman.

The FAA operate an all-Bombardier fleet led by four *Challenger* aircraft (a *Challenger 604* and three *Challenger 601-3R* jets) and six *Learjet 60* aircraft. As a joint organization with the USAF Combat Flight Inspection detachment, the FAA's *Challenger* aircraft have supported allied nations in certifying airfields for military operations, including in Kabul, Baghdad and Uzbekistan.

Additionally, another world-renowned civil aviation organization, Japan's Civil Aviation Bureau (JCAB), operate two *Global Express* ultra-long range jets and one *Q-Series* aircraft for flight inspection missions.

Future Concepts

Bombardier continues to expand the capability range of its aircraft to undertake new and emerging specialized missions.

Bombardier continues to improve upon its existing and high performing ISR aircraft solutions by evaluating upgrades to current systems as required by specific missions. As an example, Bombardier has supported airframe, avionics, and mission system improvements on *Q-Series* Maritime Patrol Aircraft solely for the benefit of special mission customers.

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