

BOMBARDIER

BACKGROUNDER

THE BOMBARDIER 415 MULTI-PURPOSE AMPHIBIOUS AIRCRAFT

The *Bombardier 415MP* amphibious aircraft offers unique capabilities for a wide range of missions. It combines the capabilities of a traditional surveillance aircraft with the additional benefit of direct intervention on water.

Typical special-mission roles include:

- **Maritime search-and-rescue (SAR)** The *Bombardier 415MP* aircraft offers a highly productive search time of 3.5 hours, at a 370-kilometre (200 nautical mile) radius of action, and a dash speed of 333 km/h (180 knots) to the search area. Maritime SAR effectiveness is enhanced by a number of sensor systems, including forward-looking infrared (FLIR), side-looking airborne radar (SLAR), nose-mounted radar and optical devices. Precision navigation and communication systems enable the *Bombardier 415MP* aircraft to detect and locate vessels and persons in distress promptly, while the aircraft's on-water capability enables SAR crews to complete rescues independently of other assets. Airdrops can be used to deliver equipment, medical supplies or other payloads to survivors when water landings are not possible. The aircraft's spacious cabin easily accommodates special mission equipment, crew and rescued persons.
- **Pollution patrols and oil slick dispersant applications** The *Bombardier 415MP* amphibious aircraft's sensor systems, combined with sophisticated navigation equipment, enable the aircraft to identify, track and intercept target vessels effectively. These systems also enable the aircraft's crew to document suspected violations and illegal activities, such as dumping, bilge discharge or oil leaks, and produce graphic records with precise position information automatically incorporated. The aircraft's on-water capabilities permit the crew to obtain samples of the pollutants.
- **Fisheries/sovereignty patrols** As with pollution patrols, the *Bombardier 415MP* aircraft's ability to identify, track and intercept target vessels and record their activity, including navigation/position information, for later prosecution is a significant advantage. Its on-water capability confers the ability to confront violators directly for observation, investigation, and intervention pending the arrival of support vessels.

- **Drug and illegal migration interdiction** The *Bombardier 415MP* aircraft's major features for use in control of drug smuggling and illegal migration interdiction include: airborne and on-water observation or interception of cargo; extended patrol reconnaissance capability and good dash speeds; payload capability to transport sensors, recording equipment or personnel for deployment on the water; ability to carry and manage the Bombardier Jet Boat to support on-water operations.
- **Utility transport operations** The *Bombardier 415MP* aircraft's primary advantage in utility transport operations is its ability to operate from water or remote and unprepared airstrips with minimal maintenance and support facilities. Personnel and equipment can be transported at greater speed and to greater distances than by helicopters. The aircraft can also be equipped for paradrops.
- **A unique firefighting aircraft** The *Bombardier 415* aircraft is, by its special design concept, a very efficient and highly productive firefighting aircraft. Water can be scooped from small water bodies in the fire area or the ocean. Depending on the distance from the water to the fire, the *Bombardier 415* aircraft can deliver over 100 tons of water within one hour of the initial attack. Being autonomous of fixed air bases for over four hours of operations, the *Bombardier 415* aircraft can attack several fires during the same dispatch.

Special Mission Equipment

- Airborne sensor packages, including:
 - Forward-looking infrared (FLIR) with low light video
 - Side-looking airborne radar (SLAR)
 - Fully integrated weather radar
 - Direction finder antenna (DF)
 - Still and Video cameras
- Additional cabin seating/accommodation, including
 - Ergonomic crew seats
 - Comfortable VIP/crew rest seats
 - Foldable attendant-type seat
 - Stretchers/berths for casualties and fold-away aft-cabin bench
 - Insulation and air-conditioning
- Enlarged aft cargo door

- Bombardier Jet Boat (BJB)
 - Water drainage and bilge system
 - Extra sealing and inspection ports
 - Munther dryer/dehumidifier
- Precision navigation systems with automatic or custom search patterns
- Marine radio package
- Secure Intercom
- Paradrop system with safety lights, and static line
- Search Light

Aircraft details

The *Bombardier 415MP* amphibious aircraft features a high-wing configuration combined with modern turboprop engines and digital avionics for maximum mission versatility. Fully powered flight controls enhance precise handling and low-speed maneuverability.

Two Pratt & Whitney Canada PW123AF turboprop engines, delivering 2,380 shaft horsepower each at takeoff, provide power. The aircraft's normal cruise speed is 180 knots (333 kilometres per hour), with a maximum ferry range of 1,260 nautical miles (2,333 kilometres); fuel consumption (ISA, 5000ft, Utility Role, LRC) is typically 1000 pounds (565 litres) per hour.

Since the aircraft was designed for operation in salt-water environments, parts and components receive surface treatments and protective coatings during the manufacturing process before assembly. Sealants and corrosion-inhibiting compounds are used extensively to prevent contact between metal and corrosive agents. The aircraft also has good drainage and ventilation features, as well as numerous removable panels for inspection.

Since 1994, a total of 83 *Bombardier 415* amphibious aircraft have been ordered by government agencies in France, Canada, Italy, Greece, Croatia and Spain. Airworthiness authorities in Canada, the United States and Italy have granted the aircraft civil certification. The first two *Bombardier 415MP* aircraft were delivered in 2004 to Greece. In June 2008, the Malaysian Maritime Enforcement Agency ordered two *Bombardier 415MP* aircraft.

Dimensions

Wingspan	93 ft. 11 in.	28.6 m
Length (including radome)	67 ft	20.4 m
Height	29 ft., 5.5 in.	8.98 m
Wing area	1,080 sq. ft.	100 sq.m
Interior		
Cabin Length	30 ft., 10 in.	9.4 m
Cabin Width (max.)	7 ft., 10 in.	2.4 m
Cabin Height (max.)	6 ft., 3 in.	1.9 m
Doors (w x h)		
Forward	42 in. x 54 in.	1.06 m x 1.37 m
Enlarged Cargo Door	58 in. x 44 in.	1.47 m x 1.12 m
Emergency Exit	20 in. x 36 in.	0.5 m x 0.9 m

Aircraft Weights

Operating Weight Empty (SAR Config.)	30,000 lbs	13,608 kg
Maximum fuel	10,250 lbs	4,650 kg
Maximum useful load	6,400 lbs	2,903 kg
Maximum Takeoff Weight (Utility role)	41,000 lbs.	18,597 kg
Maximum Takeoff Weight (Firefighting role)	43,850 lbs.	19,890 kg
Maximum Takeoff Weight (water)	37,850 lbs.	17,170 kg
Maximum Landing Weight	37,000 lbs.	16,783 kg

Aircraft Performance

Normal cruise speed	180 Ktas	333 km/h
Long range cruise speed	140 Ktas	259 km/h
Stall speed (Max. landing weight, land configuration)	68 Ktas.	126 km/h
Rate of climb	1,600 fpm	8.1 m/s
Average fuel burn (ISA, 5000ft, Utility role, LRC)	1,160 pph	938 l/h
Takeoff distance (ISA, land, MTOW)	2,570 ft.	783 m
Takeoff distance (ISA, water, MTOW)	2,670 ft.	814 m
Landing distance (ISA, land, MLW)	2,210 ft.	674 m
Landing distance (ISA, water, MLW)	2,180 ft.	665 m
Minimum water depth required	6 ft.	1.8 m
Waterbombing capacity	1,621 USG	6,137 l

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