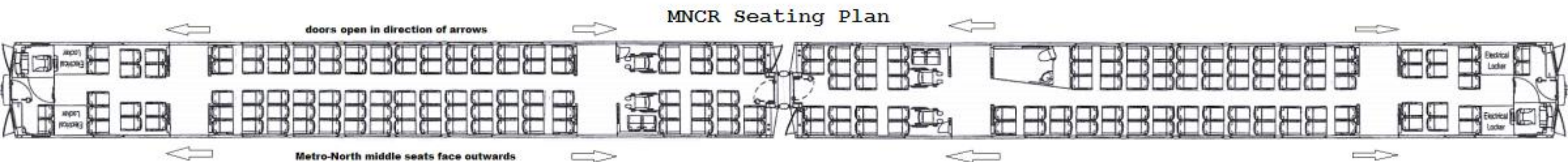
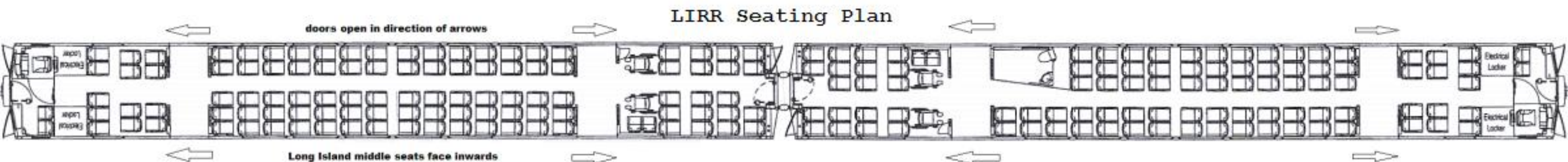
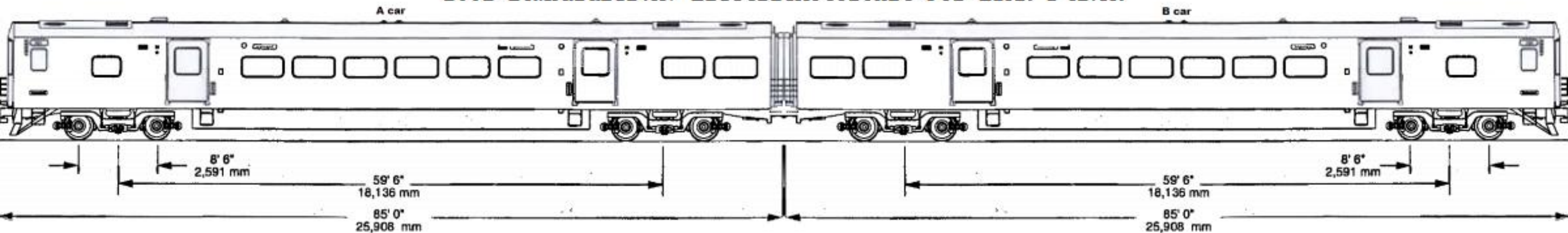
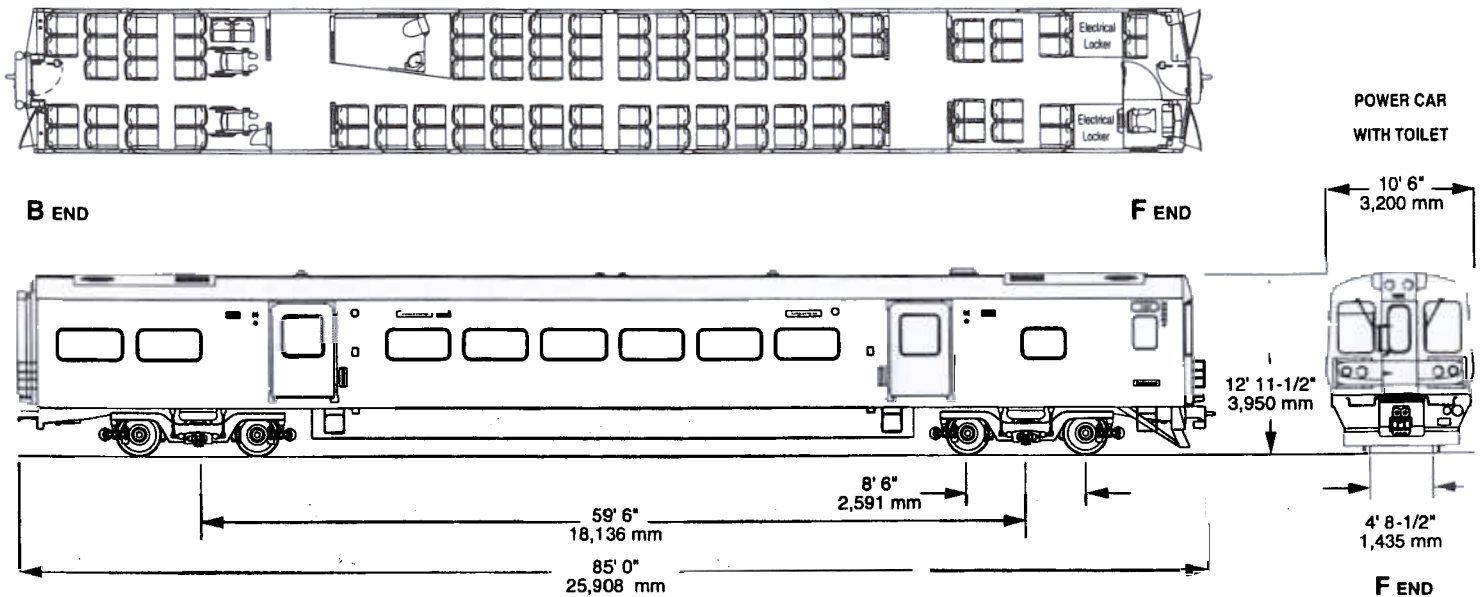


2002 Bombardier.M7 ElectricMotorUnit For LIRR & MNCR



Electric Multiple Unit — M-7



GENERAL DATA

type of vehicle	electric multiple unit
operator	Metropolitan Transportation Authority Long Island Railroad
order date	May 1999
quantity	113 power cars without toilet 113 power cars with toilet
train consist	up to 14 cars

wheelchair locations	2
passenger per car (seated)	under design
passengers per car (standing) crush load	under design

TECHNICAL CHARACTERISTICS

- power fed by third rail: 400-900 Vdc
- auxiliary voltages: 230 Vac / 3 ph / 60 Hz
72 Vdc
- AC traction motor: 265 hp (200 kW)
- dynamic and pneumatic (tread & disc) braking system
- coil spring primary suspension
- air-bag secondary suspension
- stainless steel carbody
- fabricated steel frame trucks
- automatic parking brake
- forced-air ventilation
- air-conditioning capacity of 18 tons
- electric strip heaters
- ADA compliant toilet room (B car)
- vacuum sewage system (B car)
- communication system with visual signs
- cellular telephone (B car)
- event recorder
- cab signal / ATC
- cab end: automatic coupler (mechanical, pneumatic and electrical type N-6A)
- non-cab end: semi-permanent drawbar
- four single-leaf doors
- hinged-end doors
- on-board computer-controlled diagnostic system

DIMENSIONS AND WEIGHT

	Metric	Imperial
length over coupler	25,908 mm	85' 0"
width over side sheets	3,200 mm	10' 6"
rail to roof height	3,950 mm	12' 11 1/2"
rail to top of floor height	1,295 mm	51"
rail to top of height	4,039 mm	13' 3"
doorway width	1,270 mm	50"
doorway height	1,981 mm	6' 6"
floor to high ceiling height	2,261 mm	89"
floor to low ceiling height	2,007 mm	79"
wheel diameter	914 mm	36"
truck wheelbase	2,591 mm	102"
truck centre distance	18,136 mm	59' 6"
track gauge	1,435 mm	4' 8 1/2"
car weight (empty)		
- power car without toilet	58,200 kg	125,300 lb
- power car with toilet	56,835 kg	128,300 lb

PERFORMANCE AND CAPACITY

	Metric	Imperial
maximum service speed	160 km/h	100 mph
acceleration rate, initial (service)	0.9 m/s ²	2.0 mphps
braking rate (service)	1.3 m/s ²	3.0 mphps
braking rate, nominal (emergency)	1.4 m/s ²	3.2 mphps
buff load	3,560 kN	800,000 lb

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M-7 Electric Multiple Unit - New York, USA

[Overview](#) [Technical Data](#)

- [Multimedia](#)

Under an agreement with the Metropolitan Transportation Authority (MTA) of New York, Bombardier Transportation is providing 1,172 M-7 Electric Multiple Units (EMUs) to the MTA’s two commuter railroads - the Long Island Rail Road and Metro-North Railroad - to replace their M-1 fleets.

The full M-7 fleet is maintaining a six-month average for Mean Distance Between Failure performance in excess of 400,000 miles (664,500 km) - well beyond initial customer expectations of 100,000 miles. The new M-7 cars also feature state-of-the-art rail transportation technology, including IGBT propulsion, energy efficient dynamic braking and on-board monitoring and diagnostic systems. Equipped as married pairs, the EMUs feature stainless steel carbodies for long life and low maintenance.

The units are equipped with Bombardier's renowned stainless steel carbodies for long life and low maintenance, and asynchronous AC motors featuring state-of-the-art IGBT (isolated gate bipolar transistors) inverters. Use of outboard-bearing bolsterless fabricated bogies offers considerable weight savings over cast bogies of previous generations.

Chartered in 1834, the Long Island Rail Road is both the largest commuter railroad and the oldest railroad in America operating under its original name. Metro-North is the second largest commuter railroad in the nation.



M-7 electric multiple unit (EMU), New York, USA

[Low Resolution \(136 KB\)](#) [High Resolution \(1 MB\)](#)

Similar Projects

- [AGC Regional Train - France](#)
- [Bm71 \(Gardermoen Airport Express\) & Bm73 \(Signatur/Agenda\) - Norway](#)
- [CONTESSA Electric Multiple Unit - Denmark and Sweden](#)
- [CP 2000 Electric Multiple Unit – Porto, Portugal](#)
- [Class 481 Electric Multiple Unit - Berlin, Germany](#)
- [ELECTROSTAR - United Kingdom](#)
- [Electric Multiple AM96 - Belgium](#)
- [Electric Multiple Unit - Brisbane, Australia](#)
- [Electric Multiple Unit Class 423- Germany](#)
- [Electric Multiple Unit Class 425.2 - Germany](#)
- [Electric Multiple Unit ICE T - Germany](#)
- [Electrical Multiple Unit - Perth, Australia](#)
- [Electrical Multiple Unit TALENT for Regional Service - Austria](#)
- [Electrical Multiple Unit TALENT for Suburban Service - Austria](#)
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- [Lötschberger RegioExpress - Switzerland](#)
- [REGINA Electric Multiple Unit - Sweden](#)
- [SPACIUM commuter train - Ile-de-France](#)
- [Sprinter Electric Multiple Unit - Netherlands](#)
- [TALENT 2 Electric Multiple Units - Germany](#)
- [V300ZEFIRO - Italy](#)
- [ZEFIRO 250 - China](#)
- [ZEFIRO 380 - China](#)

Operator	MTA Long Island Rail Road
Length	25,908 mm - 85' 0"
Width	3,200 mm - 10' 6"
Max. Speed	160 km/h - 100 mph

Seated Passengers

110 (A car)
101 (B car)



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M7 (railcar)

From Wikipedia, the free encyclopedia

The **M7** is an **electric multiple unit** railroad car built by **Bombardier**, with delivery beginning in 2002, utilized by the **MTA** on the **Long Island Rail Road** (**M7**) and **Metro-North Railroad** (**M7A**). The M7 replaced the **M1 railcars**, which had previously provided electric service on these lines. The M7 are powered from an electric **third rail**.

Cars are arranged as **married pairs**, where each car contains a complete set of controls for an **engineer**, **conductor**, or **brakeman**. However, the 'B' Cars (denoted by odd-numbered car designations) contain a **handicapped accessible restroom**, which is larger than the restroom provided on the **M1 and M3 railcars** and designed to accommodate a wheelchair, as well as an attendant and/or service animal (such as a **guide dog**, **hearing dog** or **service dog**) accompanying the passenger. The enlarged bathroom reduces the number of seats in the car.

The M7 was built as two separate, but similar models owing to the different electrical and signaling systems on the LIRR and Metro-North. The M7 has AC traction motors and can accelerate more quickly from a standing stop than previous MU sets. The two different cars also contain different door-closing lights; the LIRR (Long Island Rail Road) has small red button-sized closing-lights, while Metro-North has white light strips. Unlike the M7s, the M7As have pads behind each headrest. On the M7, the seats face toward the center, but on the M7As, the seats face away from the center.

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Early trouble-shooting [edit]

The M7 cars swayed from side to side more than intended when introduced to service, and required modifications to reduce the sway. In late 2006 the MTA began a replacement of all M7 armrests after paying out over \$100,000 to customers who filed complaints. The factory installed armrests were notorious for slipping into trouser pockets and then tearing them when sitting. The new design is of a different profile and is coated in a more fabric-friendly rubber. Some passengers complained about having fewer seats per B car, a consequence of the larger ADA-compliant restrooms, and about the width of the seats. Metro-North's management received feedback about the M7, which influenced the development of the **M8 railcars** for the **New Haven Line**.

LIRR M7 service began on October 30, 2002 and Metro-North's first M7A started scheduled service in April 2004. A new eight-car set of M7s cost \$18 million.

In the fall of 2006, the M7As started to experience serious braking problems due to foliage on the right of way, a condition known as "Slip-Slide." This caused nearly 2/3 of the Metro-North fleet to be taken out of service, due to flat spots on wheels. While the LIRR fleet performed significantly better, stripped M1s from both railroads were reactivated, and diminished schedules were instituted until the M7 fleet was able to resume full operation.

Today, the fleet has the highest **mean distance between failures** out of the entire LIRR fleet.^[5]

Images [edit]



M7	
	
An M7A leaving Morris Heights station	
	
Long Island's M-7 has seats that face towards the center (away from the doors and vestibule areas), creating a 'booth' in the middle of the car.	
In service	2002-present
Manufacturer	Bombardier Transportation
Number built	1,172 cars <div> <div></div> <div>Long Island Rail Road, 836 cars</div> <div>Metro-North Railroad, 336 cars</div> </div>
Formation	married pairs
Fleet numbers	Long Island Rail Road - 7001-7836 <div> <div></div> <div>Metro-North Railroad - 4000-4335</div> </div>
Capacity	Seated passengers: <div> <div></div> <div>110 (A car); 101 (B car)</div> </div>
Operator	Metropolitan Transportation Authority <div> <div></div> <div>(Long Island Rail Road</div> <div>Metro-North Railroad)</div> </div>
	Specifications
Car length	85 ft 0 in (25,908 mm)
Width	10 ft 6 in (3,200 mm) ^[1]
Maximum speed	100 mph (161 km/h)
Power output	~200 kW (270 hp) Per Motor ^[2]
Transmission	(4) Mitsubishi Electric AC Traction Motors and (2) IGBT inverters per car ^{[3][4]}
Electric system (s)	750 V DC Third rail
Current collection method	Contact shoe
Braking system (s)	Regenerative / Pneumatic
Coupling system	Budd Pin and Cup coupler
Track gauge	4 ft 8½ in (1,435 mm)

