



**Massachusetts Bay
Transportation Authority**

Orange and Red Line Car Procurement Update CRRC MA Change Order Briefing

March 28, 2024



CRRC Leadership

**Wang Zhaofu, President & Chairman
CRRC MA Corporation**



Wang Zhaofu, President of CRRC MA, oversees the operations of Massachusetts' first and only rail car manufacturing corporation. Responsible for a 500-employee workforce including all administrative functions, Mr. Wang manages the operations of the corporation's 204,000 sq. ft. manufacturing facility located in Springfield, Massachusetts.

**Bao Yujun, Deputy General Manager
CRRC Changchun, Railway Vehicles Co., Ltd**



As Deputy General Manager of CRRC Changchun, Mr. Bao serves as the Senior Advisor and primary point of communication between CRRC Changchun and the MBTA Red and Orange Line Project. Mr. Bao's professional career at CRRC spans thirty years of experience in the manufacturing industry including the oversight of International Operations and Market Development.



Overview

- MBTA needs new Red and Orange Line Trains but particularly Red Line cars on an accelerated delivery schedule.
- CRRC's mounting financial pressures due to low pricing of contract, unforeseen post Covid inflation and supply chain disruptions, tariffs, delay claims, and obstacles to winning new contracts in the US market raises the risk CRRC may not complete its contract with the MBTA.
- Advisory team assembled and recommended that a relationship reset and negotiated settlement w/ CRRC will be more advantageous to MBTA than a new procurement.
- **New procurement will take approximately 5 years to start delivery and cost approximately \$1.1B to \$1.4B.**
- Proposed agreement provides:
 - All 404 cars delivered by end of 2027.
 - Covid-related schedule relief.
 - Partial reimbursement of increased costs paid in increments based on car deliveries.
 - Maintains Springfield workforce.
 - Creates incentives and maintains liquidated (delay) damages related to the new schedule.



Background: Legacy Fleet Replacement

The new CRRC cars will replace MBTA outdated legacy Red and Orange Line fleets that are beyond their useful life.

No. 1 Cars – Red Line, have been in service since 1969 (Overhauled in late 1980s) - 74 Cars - Average Car Mileage: 2.6M miles – **55 years old**

No. 12 Cars – Orange Line, were in service since 1979 (Removed from service September 2022) – 120 Cars - Average Car Mileage: 2.0M miles – **43 years old** when removed from service.

No. 2 Cars – Red Line, have been in service since 1987 – 58 Cars - Average Car Mileage: 1.8M miles – **37 years old**

No. 3 Cars – Red Line, have been in service since 1993 – 84 Cars - Average Car Mileage: 1.9M miles – **31 years old**



Background: Contract

- December 2014, CRRC MA was awarded a contract to manufacture 152 new Orange Line cars and 132 new Red Line cars totaling 284 rail cars.
- **MBTA contract was CRRC's, the world's largest rail car manufacturer, first US vehicle contract.**
- January 2017, the MBTA amended the contract to procure an additional 120 new Red Line cars, increasing the total order to 404 rail cars.
- The work will replace all legacy Orange and Red Line vehicles and provide additional vehicles for future increases in capacity on both lines.
- **Contract required all Orange Line cars to be delivered by January 2022, Red Line cars to be delivered by September 2023.**
- CRRC M/WBE base contract goal is **16%** currently achieving **18%**.



Current Contract Value: \$870,522,758

- Original Contract: \$565,183,944
- Amendment 1: \$249,000,00
- Change Orders: \$56,338,814

Current Paid to CRRC: \$366,176,190

Background: CRRC Springfield Facility

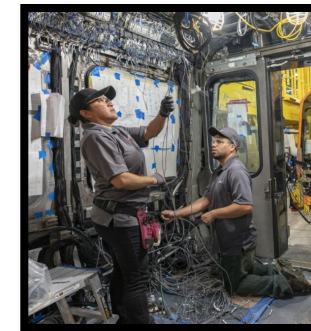
The Authority's contract required that the car builders have a "final assembly" site in MA.

CRRC redeveloped and built a manufacturing facility at the former Westinghouse site in Springfield MA.

- 204,000 sq. ft. rail car production facility
- 2,240 ft. dynamic test track
- 42,500 sq. ft. brand-new warehouse

Site employs over 400 employees working on projects for Boston, Philadelphia and LA.

93% live in greater Springfield, including Local 63 Sheetmetal Workers and Local 7 Electricians.



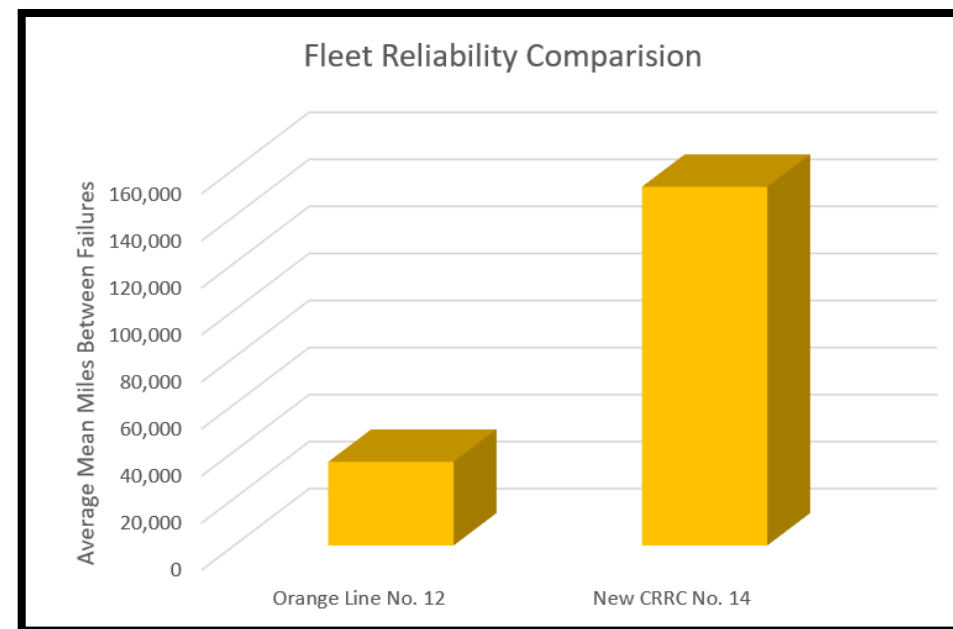
Current Status (As of 03/25/24)

CRRC produces car shells at its parent company's site in Changchun, China and ships car shells to Springfield for assembly completion.

- **112 Orange Line Cars** have been delivered. All remaining cars are in manufacturing process. All car shells have been built.
- **18 Red Line Cars** have been delivered. 80 cars are in manufacturing process.

New fleet continues to perform well. New **CRRC Orange Line fleet** provides more than double the reliability of legacy fleets.

CRRC cars have advanced propulsion and braking systems, modern amenities and safety features.



Six-month comparison of failures in service

Last six months of Orange Line No.12 cars in service time compared to 09/23-02/24 – No. 14 cars.

Failure defined as 4-minute standing delay or car removed from service not competing trip.

Challenges Impacting The Project

CRRC Project Specific Challenges

- Transfer of technology and manufacturing methods, materials and inventory management, staff hiring and turnover have impacted delivery rates from Springfield.
- Pandemic caused manufacturing plant shutdowns in Changchun, China (car shell production facility), CRRC Springfield facility and at numerous supplier facilities in the US and globally. Shipping times from China to North America for vehicle components continue to be extended.
- Technical and engineering issues have caused sudden and unexpected demands on CRRC's project teams and supplier base.

Challenges Beyond Project Specific Issues

- June 2018, the United States Trade Representative (USTR) increased existing tariffs on Chinese goods to 25% which impacts large portions of the car that CRRC sources in China.
- The National Defense Authorization Act of 2019 banned mass transit agencies from using federal funds to purchase railcars and buses from Chinese-owned companies. (CRRC is permitted to continue doing business with the agencies that already have contracts.) CRRC MA currently has limited future work options beyond the active projects with LA Metro (64 cars), SEPTA (45 cars) and the Authority.
- High inflation, low unemployment (worker availability) and vehicle delivery delays have caused strained relationships between CRRC and key suppliers.



Alternatives Review

In early 2023, the Governor and executive leadership requested the MBTA to evaluate strategic alternatives and options to address the OL/RL Vehicle Project's delays.

- A team of independent expert legal and rail vehicle advisors (Advisory Team) assembled to support the MBTA in conducting a strategic review of the project. Wilmer Hale LLP (Jeffrey Kessler), Holland & Knight LLP (Mark Michalowski), and Hatch (Christopher Pacher)
- Through a series of workshops and meetings, the Advisory Team determined:
 - A “Reset” was necessary to mitigate project risk recognizing CRRC’s financial losses and uncertainty of future U.S. contracts.
 - Alternatives to CRRC were considered but were predicted to be slower and more expensive to replace the aging fleets.
 - The team suggested the MBTA consider having additional early production tasks performed in China to increase production while preserving jobs in Springfield.
 - Other “Reset” considerations included:
 - CRRC is entitled to a time extension due to COVID.
 - CRRC cars are continuing to perform well in service.
 - Contract changes can be structured to provide visibility to mitigate key project risks.
 - Benefits of fleet standardization on both Orange and Red Lines.

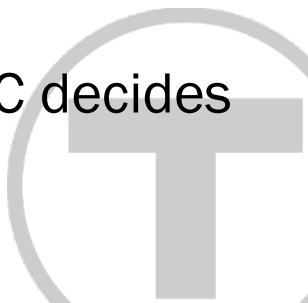


Proposed Settlement Agreement Addresses

Following the Advisory Team's recommendations, MBTA engaged CRRC in formal negotiations to reset the contract under a Proposed Change Order Agreement.

Agreement to Address:

- Establish a New Car Delivery schedule with all cars delivered by end of 2027.
- Resolve all Covid-19 business related claims.
 - Reimbursement for portions of CRRC MA and Third-Party Supplier cost escalation.
 - Time extension eliminates accrued Liquidated Damages (LDs) for COVID-19 period.
- Continued final assembly and 60% Domestic Content contract requirements.
- Implement assembly/production improvements recommended by MBTA or justify refusal.
- Resolve other contract discrete items.
- Negotiate a "Right of First Refusal" for purchase of Springfield Westinghouse site if CRRC decides to sell the property.



Change Order: Summary of Negotiated Schedule Reset

Without a reset, CRRC's current schedule does not complete delivery until 2029.

Negotiated accelerated delivery schedule has all Orange and Red Line cars delivered by end of 2027.

- Delivery of last Orange Line car by September 2025 (152 cars)
- Oldest Red Line No. 1 car replacement by end of 2025 (74 cars)
- Delivery of all 404 cars by end of 2027

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Orange Line Contractual														
Red Line Contractual														
Orange Line Current Schedule														
Red Line Current Schedule														
Orange Line Proposed Schedule														
Red Line Proposed Schedule														
New Procurement - 292 Cars														

To achieve the new schedule, **CRRC will start performing additional early production work** in their parent company's main manufacturing facility in Changchun, China.

- **Job protection for CRRC employees working on the MBTA Project.**



Business Summary for Reset

To offset COVID-19 Pandemic price volatility and increases, and the unexpected economic impact to the supply chain worldwide per World Health Organization (WHO) from March 2020 to May 2023 (38 months), the following terms have been negotiated:

Key Business Reset Outcomes:

- Schedule Time Relief Granted for COVID-19 concerning Accrued Liquidated Damages (LDs):
 - Grant 20 Months of schedule relief equaling \$90,653,000 of LD reduction
 - Accrued liquidated damages remaining is \$37,718,000.
 - CRRC is subject to future LDs for not meeting new schedule.
 - CRRC incentive: New schedule achievement allows CRRC to “earn back” accrued LD’s annually and overall.
- Partial offset of COVID-19 price volatility and increases
 - Reimbursement for Supplier cost increases, mandated 301B tariffs, Springfield cost escalations (including post-Nov. 2023 Union increases), shipping and warehouse cost escalations.
 - 70% of reimbursement points tied to Car delivery schedule intervals as additional incentive.



Business Summary for Reset (continued)

Key Points for Reimbursement Structure:

- Only for cost increases incurred, paid, and that are verifiable by documentation provided by CRRC.
- Agreement contains "In Good Standing" clause to require verification that CRRC complies with supplier payment obligations.

Financial:

Near Term and Milestone reimbursement related - \$95M:

- \$75M Milestone Supplier Category reimbursement tied to eight (8) car delivery intervals through 2027.
- \$20M Near Term Supplier Category reimbursement eligibility upon signing.
- Near Term and Milestone reimbursement related - \$55M
 - \$35M Milestone CRRC Category reimbursement tied to eight (8) car delivery intervals through 2027.
 - \$20M Near Term CRRC Category reimbursement eligibility upon signing.
- Milestones related to Reliability and Car Delivery Incentive - \$10M.
- \$12M Credit to MBTA for other discrete project related items.
- Total Contract Adjustment over a four (4) year duration is not to exceed \$148M.
- MBTA's thorough review of current and future projects identified funding within MBTA capital program.



Going Forward: Focus on Production Stabilization

Consistent and increased car deliveries requires output stabilization from the Springfield production line. This agreement provides measures to address and monitor key issues affecting production stabilization.

- CRRC must change commercial relationships with key suppliers to ensure availability of material and production requirements.
 - Agreement provides greater visibility into CRRC's Supplier relationship including ability to have tri-party discussions with MBTA.
- Encourage and hold accountable:
 - Financial incentives and consequences continue and are expanded: Ex. Reimbursements not made until car deliveries.
- Extend recent MBTA senior operations and contract oversight through Chief of Engineering and Capital and Chief Procurement and Contracts Administration Officer.
 - Raise and address critical project delays and contract issues monthly in a proactive review and identify risks.



Staff Summary Recommends Contract Change:

- **Whereas**, the MBTA needs new Orange Line and Red Line cars to replace its aging fleet in order to operate a safe and reliable service for its riders; and
- **Whereas**, an Advisory Team to the MBTA has recommended that the current contract with CRRC MA be re-set to mitigate certain project risk; and
- **Whereas**, a new delivery schedule will be adopted providing that all 404 Orange and Red Line Cars will be delivered by December 31, 2027 in accordance with the terms and conditions of a Change Order with CRRC; and
- **Whereas**, the MBTA's reimbursement for unanticipated price volatility and cost increases as set forth in the Change Order will only be paid after such costs are verified, documented and paid by CRRC MA and will also be tied to specific car delivery schedules.
- **Now Therefore**, it is hereby **VOTED** to authorize the General Manager or his designee to execute a Change Order to the December 2014 contract awarded to CRRC MA permitting an increase to the contract price in a sum of up to \$148,000,000, in a form approved by the General Counsel and is further authorized to execute any necessary or ancillary documents on behalf of the Massachusetts Bay Transportation Authority to effectuate such agreement.

