# Washington Metropolitan Area Transit Authority

## *Railcar Programs Progress Update*

*Presented to: The Board of Directors;*

**Customer Service, Operations and Safety Committee**

*By*

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PDEC

PLANNING • DEVELOPMENT
ENGINEERING • CONSTRUCTION

# I. Purpose

- To provide the Board of Directors, **Customer Service, Operations and Safety Committee** with a semi-annual update on the work underway on the 5000, 2000/3000, and 6000 Series railcars that represent 63% of the WMATA fleet.

# II. 5000 Series Railcars

The performance of the 5000 Series railcar continues to improve. The March '05 forecast presented to the Board remains unchanged. By the end of 2005, this fleet is forecasted to meet/exceed the WMATA performance goals.

- **Program Schedule:** 192 cars, manufactured by CAF are all in service; with the last two railcars delivered in June 2004.

- **Budget:** Total program budget is $383M, 93% expended to date. Still withholding $24.3 M for spare parts, reliability, and final completion of engineering modifications and final acceptance.

- **Engineering/Technical:**
  - 168/181 modifications have been completed; 9 more are currently underway.
  - Receiver Coil Interface Boards have been installed in all railcars.
  - Modification of door rollers and limit switches: 33% of the fleet completed.

- **Reliability:** Reliability for this fleet continues to improve; The current testing program covers 12 primary systems. Based on testing to date, 5 of the 12 systems are forecasted to meet reliability goals. For the remaining 7 systems, engineering modifications have been identified and corrective actions are underway. Forecasted to meet the reliability requirements by December 2005.

- **Safety & Quality:** Safety certification is complete.

# III. 2000/3000 Series Railcars

This major rehabilitation program, one of the largest in the country, continues to experience delays that are typical for programs of this type. ALSTOM and its suppliers continue to experience quality issues. ALSTOM has slowed production to more efficiently implement engineering modifications prior to delivery. Deliveries have been reduced to five per month. This change was made to improve the quality and reliability of the rehabilitated railcars.

- **Program Schedule:** 364 railcars being rehabilitated by ALSTOM: (76) **2000 Series (100% completed)** and (288) **3000 Series (23% completed).** 142 rebuilt railcars have been received with a 36 railcar float being maintained. ALSTOM's most recent revised Program Schedule shows a completion Spring 2007. This schedule is rather optimistic and is presently under evaluation.

- **Budget:** Total program budget is $382M; 54% has been expended to date; still withholding monies for warranty, reliability, and final completion.

- **Engineering/Technical:** Systems impacting Mean Distance Between Delays (MDBD): Auxiliary Power Supply, Friction Brakes, Door Operators and ATC (station overruns). The implementation of engineering modifications to these systems will improve the performance of this fleet. ALSTOM committed, at a meeting on September 30, that they will provide the additional on-site resources for installing engineering modifications at WMATA's Branch Avenue Yard Facility. This will help improve the availability of these railcars for revenue service.

# IV. 2000/3000 Series Railcars

- **Reliability:** During the period of May to June 2005 reliability increased dramatically due to the completion of the ATC interface board modifications. MDBD figures declined in the July-August period due to friction brake problems, but improved again in late August and September due to corrections of the problems effecting the ATC, brakes, and doors. ALSTOM's commitment to accelerate on-site modifications is expected to improve reliability as a continuing trend. These railcars are expected to achieve the forecasted WMATA performance goal by December 2005.

- **Safety & Quality:** Reliability/quality improvements are attributable to the corrections of supply-chain problems and the implementing of effective engineering solutions.

# V. 6000 Series Railcars

ALSTOM delivered the first two pair pilot railcars for the 184 new 6000 Series railcars on September 8 and October 3, respectively. On-site Acceptance Testing is underway and is scheduled to last 5 months. WMATA is providing extended testing periods to enable ALSTOM to complete the testing program faster and ramp-up production to make-up contractual schedule slippage.

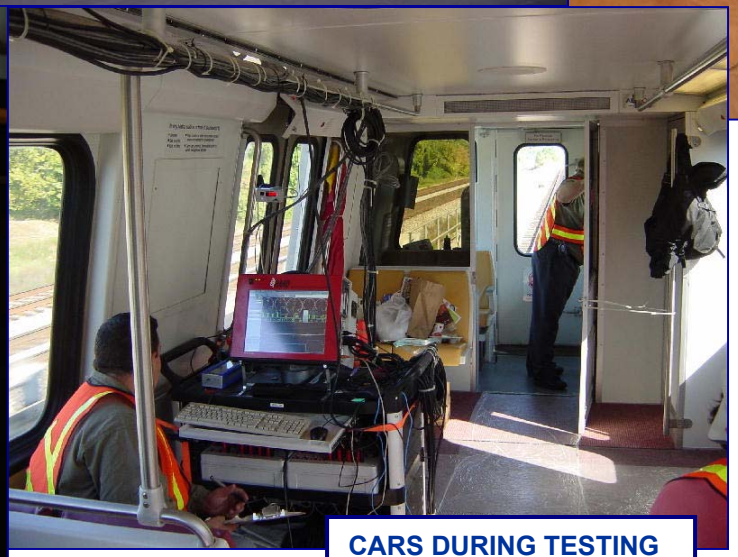
- **Program Schedule:** This program reflects lessons learned from the 5000 Series and includes a more realistic engineering and testing period before acceptance of the cars. Contract completion is scheduled for late 2007. This program is currently four months behind schedule. The base contract of 62 railcars is expected to be in service gradually by the Summer of 2006. ALSTOM is expected to deliver 8 railcars by the end of November to support a complete 8-car train testing program by the end of 2005.
- **Budget:** Total program budget is $378M; 25% has been expended to date. ALSTOM has been paid to date $81M.
- **Engineering/Technical:** 58 carshells have been produced in Barcelona, Spain, 5 have been delivered to Hornell, New York and 18 railcars are presently in final assembly in Hornell, New York for delivery to WMATA.
- **Reliability:** Upgrades developed in the 2000/3000 and 5000 Series railcars programs, are being implemented on this fleet.
- **Safety & Quality:** Safety certification elements are over 75% resolved.

# VI. 6000 Series Railcars



DELIVERY OF FIRST RAILCAR (9/8/05)


NEW CONTROL PANEL BEHIND OPERATORS SEAT



CARS DURING TESTING AT GREENBELT

# VII. Assessment & Look Ahead

- **5000 Series:**
  Railcar reliability is steadily improving and MDBD projections are meeting performance goals. Over the last twelve months, there have been significant improvements in the performance of the Door and ATC systems. This positive performance trend is expected to continue as a result of the implementation of the engineering modifications throughout the fleet with the cars expected to meet contractual reliability requirements by December 2005.

- **2K/3K Series:**
  The new senior ALSTOM management has pledged the necessary resources to resolve the open engineering concerns. ALSTOM will implement an aggressive on-site modifications program that is expected to enhance railcar reliability by December 2005.

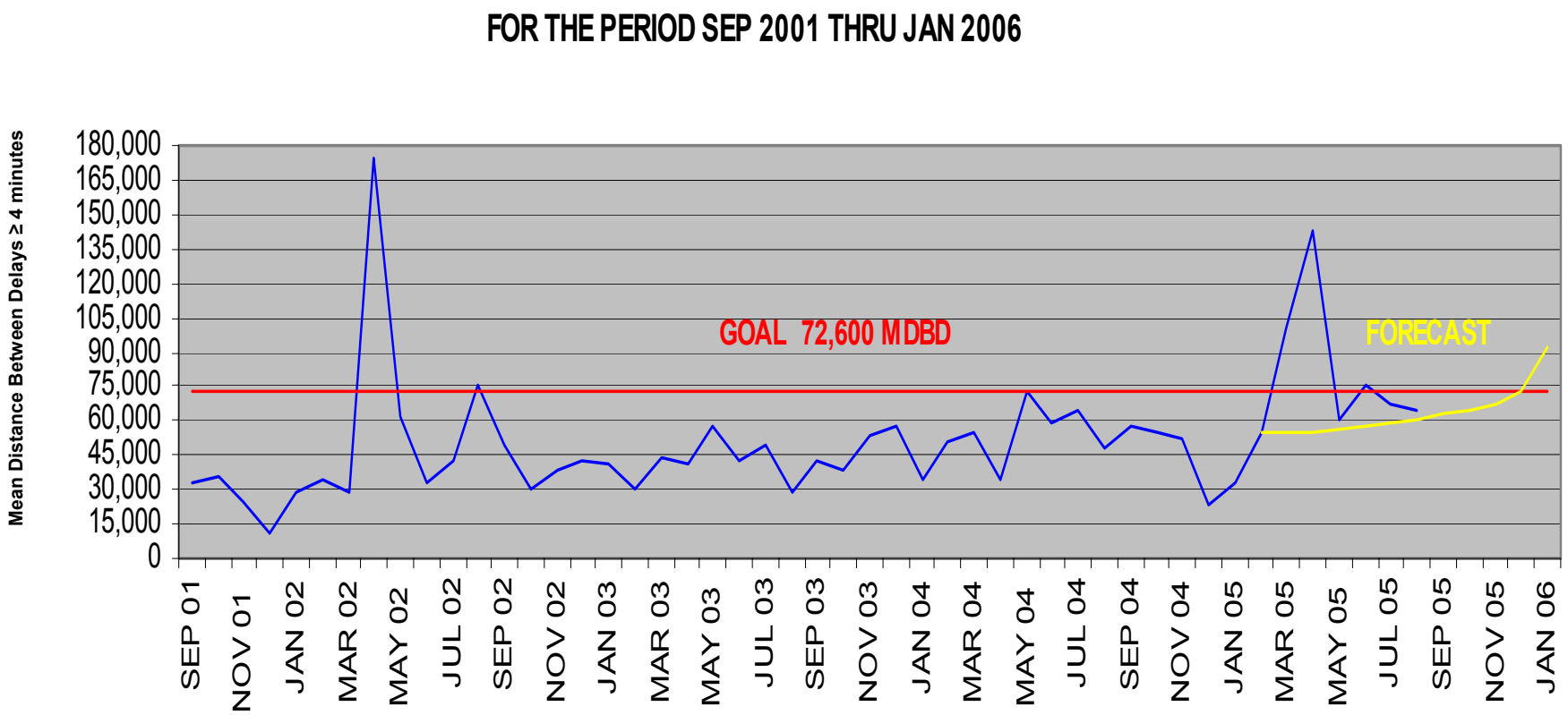
- **6000 Series:**
  On-site testing and Design Qualification Testing of two pilot cars at the Greenbelt S&I Facility started mid-September. Two additional railcars will be delivered in October. Four additional railcars will be incrementally delivered to enable completion of the final 8-railcar train for pilot testing in December 2005.

# VIII. Assessment & Look Ahead

- **Overall:**
  Based on the reliability improvements of the 2K/3K ALSTOM and CAF railcars, the average fleetwide Mean Distance Between Delays (MDBD) is forecasted to improve from the FY 2005 12 month average of 45,323 to a minimum of 56,000 by the end of the calendar year, and to a level of 60,000 by the end of the fiscal year.

# Appendix

# 5000 Series MDBD Figures



# 2000/3000 MDBD Figures