



Planning, Development and Real Estate Committee

Board Information Item VIII-A

September 25, 2008

7000 Series Railcar Program: Overview

Washington Metropolitan Area Transit Authority
Board Action/Information Summary

<input type="checkbox"/> Action <input checked="" type="checkbox"/> Information	MEAD Number: 100060	Resolution: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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TITLE:

7000 Series Railcar Procurement Program

PURPOSE:

To inform the Board of the requirements, schedule and development of the consolidated 7000 Series Railcar procurement plan to purchase up to 648 railcars to satisfy future revenue service requirements, renew the existing railcar fleet, and rehabilitate the 100 cars of the Breda 4000 Series fleet. This information is intended to facilitate discussion and request guidance regarding the design changes and performance and capacity enhancements.

DESCRIPTION:

A long-range plan has been developed for the renewal and rehabilitation of the railcar fleet due to its aging, wear and capacity constraints. The goal was to use an optimized procurement methodology and a modern design to produce a high-value railcar. The plan consolidates the replacement and mid-life rehabilitation of different fleets into one procurement of up to 748 railcars.

Substantial cost savings will be achieved through elimination of repetitive design, procurement, development and engineering costs; plus the benefits from economy of scale, improved design elements and proven, modern technology applied across a major portion of the Metro railcar fleet. The result will be a railcar with increased capacity, higher utility, lower maintenance costs and lower operating costs.

The design has been improved based on our thirty years experience in operating and maintaining these vehicles. While it is, in many ways, completely familiar the intent has been to keep the elements that work well and, with those that do not, replace them with proven components. Passenger safety, passenger traffic flow and passenger comfort are key elements in every aspect of the design.

Within the plan, procurement begins in FY2009 and railcar deliveries occur in FY2013 through FY2018, with warranty and maintenance support continuing through FY2022. This railcar plan is a major component of the agency's Long-Range Capital Plan FY2011 - FY2020 which is currently being developed.

For the railcars that have reached the mid-point in their life cycle and require major rehabilitation to insure an additional twenty years working life, the program will overhaul the major car systems including propulsion, braking, automatic train control, trucks, couplers, HVAC, electrical systems, lighting, communications, interior and cabling. The rehabilitation will contain the 7000 series interior color scheme and incorporate all ADA improvements.

The following table shows the anticipated delivery schedule for the 7000 Series Railcar Procurement Program, if all options are exercised.

		Number of Cars Accepted				
Requirements	Qty	FY 13	FY 14	FY 15	FY 16	FY 17
	748	36	112	176	228	196

This information has been presented to the Jurisdictional Coordinating Committee, the Rider's Advisory Council and the E&D Transportation Advisory Subcommittee. The program will be presented to the Finance, Administration and Oversight Committee on November 6, 2008 with a focus on program costs and cost-benefits.



7000 Series Railcar Program

Design, Performance, Capacity

Presented to the Board of Directors:

Planning, Development and Real Estate Committee

September 25, 2008





Planning Our Transportation Future.....

.....next equipment lifecycle
going beyond 2050



7000 Series

Technical Platform and Capacity

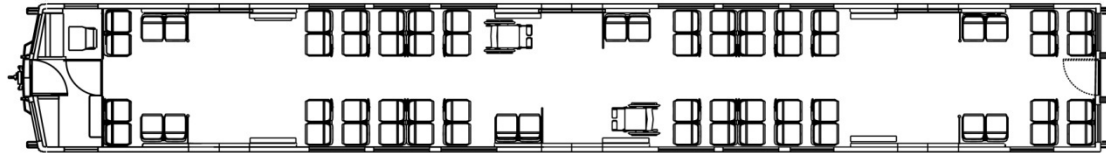
- Fleet transition from 6 to 8 car trains utilizing quad cars
- Capacity increases by elimination of cabs for added seats
- Improved lifecycle costs, reduced energy costs
- Standardization of fleet, spares inventory, and maintenance
- On-board Metro Channel Passenger Communication in real time
- New security capability utilizing CCTV



7000 Series Seating Plan and Side Elevation



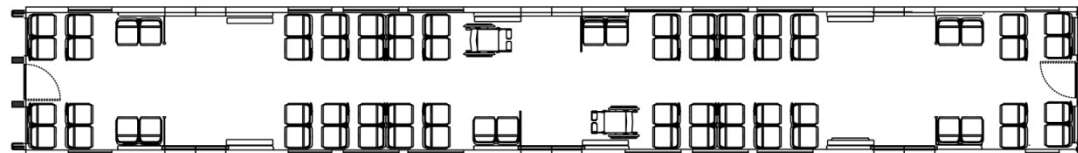
7000 EXTERIOR ILLUSTRATION A-CAR



7000 INTERIOR FLOOR PLAN A-CAR



7000 EXTERIOR ILLUSTRATION B-CAR

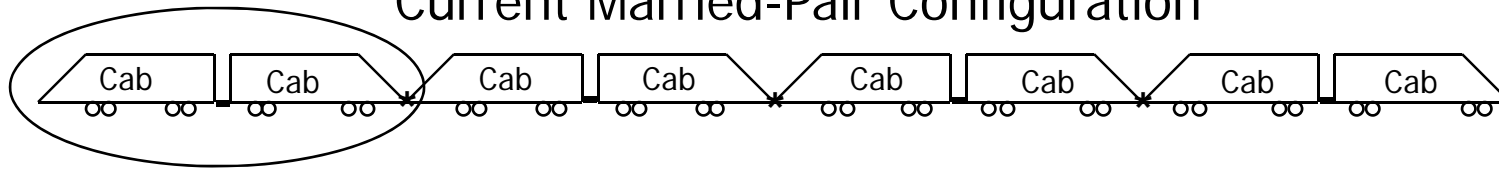


7000 INTERIOR FLOOR PLAN B-CAR



8 Car Train Capacity Concepts

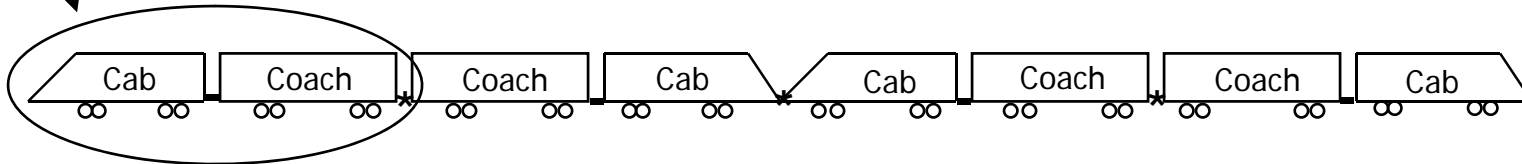
Current Married-Pair Configuration



4 Married-Pairs = 8 car train = 8 cabs

Drawbar-coupled 2 car units.

Quad Unit Configuration



2 Quad Units = 8 car train = 4 cabs

40 additional passengers per 8 pack train



7000 Series Specification

Carbuilders – Unit Train Experience

 **AnsaldoBreda**



ALSTOM



 **Kawasaki**
INNOVATING RAIL



Sumitomo Corporation

 **NIPPON SHARYO**

BOMBARDIER



BOMBARDIER



 **KINKI SHARYO**
近畿車輛株式会社



CAF



Strategic Facilitation Design Criteria

- New railcar design workshops held for stakeholder input and information presentations to Riders' Advisory Council (RAC), Elderly and Disabled Committee (E&D), Jurisdictional Coordinating Committee (JCC)
- Collected and analyzed 103 design comments for 7000 Series specification consideration
 - Suggestions adopted include:
 - Exterior finish to stainless steel
 - Floor carpeting to tile surface
 - Seating changes – ergonomic designs, new seat fabric
 - Camera system – CCTV for security and safety
 - Communication – integrated system map, display screens
 - Interior – provide handholds, increase vertical poles on seats



7000 Series Railcar

- Quad car lifecycle cost reductions through
 - stainless steel carbody durability / maintenance
 - elimination of redundant equipment (cab)
 - lighter carbody weight / Less energy
 - higher passenger capacity (+40 per 8 pack train)
- Today's technology utilized
 - CCTV for increased security, monitoring
 - Metro Channel support on-board displays
 - Train network backbone for communications



7000 Series Interior Improvements

- New stainless steel seat construction with fabric covering
- Resilient flooring
- Spring grab handles
- Improved Egress/Ingress



- LCD displays using the Metro Channel content
- CCTV cameras
- Equipment seat wells eliminated



7000 Series Railcar Next Steps

1. Finance Committee Presentation November 6th
2. Continue engineering qualification of specification
3. Achieve Board Guidance for 7000 Series Specification

