



MARYLAND TRANSIT ADMINISTRATION

MARYLAND DEPARTMENT OF TRANSPORTATION

Martin O'Malley, Governor • Anthony G. Brown, Lt. Governor  
Beverly K. Swaim-Staley, Secretary • Ralign T. Wells, Administrator

TO: Holders of Contracts Documents

FROM: Nannette C. Gibson, Chief of Operations  
Maryland Transit Administration  
Procurement Division  
6 Saint Paul Street, 7<sup>th</sup> Floor  
Baltimore, Maryland 21202-1614

SUBJECT: Addendum No. 14  
Request For Proposal for  
Contract No. T-8000-0316  
PROCUREMENT OF THE MARC IIA FLEET MID-LIFE OVERHAUL

DATE: August 17, 2011

**Issued herewith and effective this date is Addendum No. 14. The Offeror shall include acknowledgement of receipt of this Addendum in the proposal cover letter as detailed in Section II, Proposal Form, Part 8, acknowledge receipt of addenda.**

**ITEM ONE:**

- **The due date for the receipt of proposals to this solicitation has been revised from August 31, 2011 to October 31, 2011. All proposals must be received, no later than 2:00 P.M. (Eastern Standard Time), on October 31, 2011 at the following location:**

**Maryland Transit Administration  
Procurement Division, 7<sup>th</sup> Floor  
Nannette C. Gibson  
6 Saint Paul Street  
Baltimore, MD 21202**

  
Nannette C. Gibson, Chief  
Operation, Procurement Division



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6 Saint Paul Street, 7<sup>th</sup> Floor  
Baltimore, Maryland 21202-1614

SUBJECT: Addendum No. 13  
Request For Proposal for  
Contract No. T-8000-0316  
PROCUREMENT OF THE MARC IIA FLEET MID-LIFE OVERHAUL

DATE: June 21, 2011

**Issued herewith and effective this date is Addendum No. 13. The Offeror shall include acknowledgement of receipt of this Addendum in the proposal cover letter as detailed in Section II, Proposal Form, Part 8, acknowledge receipt of addenda.**

**ITEM ONE:**

- **The due date for the receipt of proposals to this solicitation has been revised from June 30, 2011 to August 31, 2011. All proposals must be received, no later than 2:00 P.M. (Eastern Standard Time), on August 31, 2011 at the following location:**

**Maryland Transit Administration  
Procurement Division, 7<sup>th</sup> Floor  
Nannette C. Gibson  
6 Saint Paul Street  
Baltimore, MD 21202**

Nannette C. Gibson, Chief  
Operation, Procurement Division



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TO: Holders of Contracts Documents

FROM: Nannette C. Gibson, Chief of Operations  
Maryland Transit Administration  
Procurement Division  
6 Saint Paul Street, 7<sup>th</sup> Floor  
Baltimore, Maryland 21202-1614

SUBJECT: Addendum No. 12  
Request For Proposal for  
Contract No. T-8000-0316  
PROCUREMENT OF THE MARC IIA FLEET MID-LIFE OVERHAUL

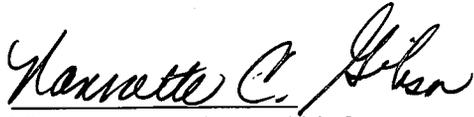
DATE: May 20, 2011

**Issued herewith and effective this date is Addendum No. 12. The Offeror shall include acknowledgement of receipt of this Addendum in the proposal cover letter as detailed in Section II, Proposal Form, Part 8, acknowledge receipt of addenda.**

**ITEM ONE:**

- **The due date for the receipt of proposals to this solicitation has been revised from May 31, 2011 to June 30, 2011.** All proposals must be received, no later than 2:00 P.M. (Eastern Standard Time), on **June 30, 2011** at the following location:

**Maryland Transit Administration  
Procurement Division, 7<sup>th</sup> Floor  
Nannette C. Gibson  
6 Saint Paul Street  
Baltimore, MD 21202**



Nannette C. Gibson, Chief  
Operation, Procurement Division

cc: Contract File



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**MARYLAND DEPARTMENT OF TRANSPORTATION**

Martin O'Malley, Governor • Anthony G. Brown, Lt. Governor  
Beverly K. Swaim-Staley, Secretary • Ralign T. Wells, Administrator

TO: Holders of Contract Documents

FROM: Maryland Transit Administration  
Contract Administration Division  
6 Saint Paul Street  
Baltimore, Maryland 21202-1614

SUBJECT: Addendum No. 11  
RFP No. T-8000-0316  
Procurement of the MARC IIA Fleet Mid-life Overhaul

DATE: March 14, 2011

Issued herewith and effective this date is Addendum No. 11. The Offeror shall include acknowledgement of receipt of this Addendum in the proposal cover letter as detailed in Section II, Proposal Form, Part 8, acknowledge receipt of addenda.

**ITEM ONE**

**Receipt of proposals to this solicitation will be accepted until, but not after, 2:00 p.m. local time, on the revised date of May 31, 2011 at the following location:**

Maryland Transit Administration  
Procurement Department, 7<sup>th</sup> Floor  
Yvon Dupuis  
6 St. Paul Street  
Baltimore, MD 21202

**ITEM TWO**

**Change Section I SOLICITATION INFORMATION AND INSTRUCTIONS, Part A.1 Schedule of Activities, Page SI-4 to read as follows:**

"The MTA has established the following schedule for this RFP. The anticipated dates are only an estimate, and the MTA shall adjust the dates at its sole discretion.

<b><u>ITEM</u></b>	<b><u>DATE</u></b>
RFP Issue Date	June 30, 2010
Pre-Proposal Conference and Vehicle Inspection (9:00 a.m.)	July 22, 2010
Proposal Inquiry Deadline	February 15, 2011

T8000-0316  
Addendum No. 11

Closing Date for Receipt of Proposals (2:00 p.m.)	<del>December 10, 2010</del> May 31, 2011
Discussions (if held)	<del>November 2010</del> July 2011
Anticipated Selection Date	<del>January 2010</del> TBD
Anticipated Notice to Proceed	<del>March 2010</del> TBD"

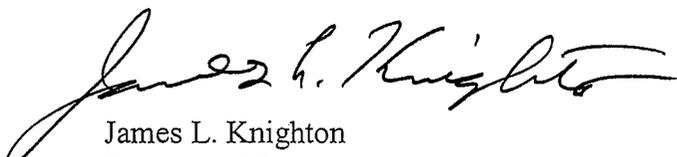
**ITEM THREE**

Change **SP Section B.20 Schedule of Activities, Page B-7** as follows:

"The MTA has established the following schedule for this RFP. The anticipated dates are only an estimate, and the MTA shall adjust the dates at its sole discretion.

<u>ITEM</u>	<u>DATE</u>
RFP Issue Date	June 30, 2010
Pre-Proposal Conference and Vehicle Inspection (9:00 a.m.)	July 22, 2010
Proposal Inquiry Deadline	February 15, 2011
Closing Date for Receipt of Proposals (2:00 p.m.)	<del>December 10, 2010</del> May 31, 2011
Discussions (if held)	<del>November 2010</del> July 2011
Anticipated Selection Date	<del>January 2010</del> TBD
Anticipated Notice to Proceed	<del>March 2010</del> TBD"

All other conditions of this RFP remain the same. Any questions may be directed to Yvon J. Dupuis, at 410-767-3591 or faxed to 410-333-4810 or by email at [ydupuis@mta.maryland.gov](mailto:ydupuis@mta.maryland.gov).

  
James L. Knighton  
Director of Procurement



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Beverley K. Swaim-Staley, Secretary • Ralign T. Wells, Administrator

TO: Holders of Contract Documents

FROM: Maryland Transit Administration  
Contract Administration Division  
6 Saint Paul Street  
Baltimore, Maryland 21202-1614

SUBJECT: Addendum No. 10  
RFP No. T-8000-0316  
Procurement of the MARC IIA Fleet Mid-life Overhaul

DATE: January 26, 2011

Issued herewith and effective this date is Addendum No. 10. The Offeror shall include acknowledgement of receipt of this Addendum in the proposal cover letter as detailed in Section II, Proposal Form, Part 8, acknowledge receipt of addenda.

**ITEM ONE**

**Receipt of proposals to this solicitation will be accepted until, but not after, 2:00 p.m. local time, on the revised date of March 31, 2011 at the following location:**

Maryland Transit Administration  
Procurement Department, 7<sup>th</sup> Floor  
Yvon Dupuis  
6 St. Paul Street  
Baltimore, MD 21202

**ITEM TWO**

“Answers to RFP Questions No. 3” is included as **Addendum No. 10 – Attachment A**. For your information, each questions has been assigned a unique qualifier (# column); however, the document is not sorted in numerical order, but is sorted by Specification section (i.e., first are General Questions that do not reference a specific Specification section, second are Special Provisions questions, and third are Technical Specification questions.

**ITEM THREE**

Applicable portions of "Test Procedures for MD-DOT Push-Pull Cars, Type and Class: MARC-II" are included as **Addendum No. 10 – Attachment B**. These are provided for informational purposes only. The procedures will need to be modified and new procedures will need to be developed for the rehabilitated and new systems expected to be provided for the overhaul.

**ITEM FOUR**

The "MARC 180 Day MAP form" is included as **Addendum No. 10 – Attachment C**. This form is provided for informational purposes only.

**ITEM FIVE**

Change **Section I SOLICITATION INFORMATION AND INSTRUCTIONS, Part A.1 Schedule of Activities, Page SI-4** to read as follows:

"The MTA has established the following schedule for this RFP. The anticipated dates are only an estimate, and the MTA shall adjust the dates at its sole discretion.

<u>ITEM</u>	<u>DATE</u>
RFP Issue Date	June 30, 2010
Pre-Proposal Conference and Vehicle Inspection (9:00 a.m.)	July 22, 2010
Proposal Inquiry Deadline	<del>November 12, 2010</del> <b>February 15, 2011</b>
Closing Date for Receipt of Proposals (2:00 p.m.)	<del>December 10, 2010</del> <b>March 31, 2011</b>
Discussions (if held)	<del>November 2010</del> <b>April 2011</b>
Anticipated Selection Date	<del>January 2010</del> <b>TBD</b>
Anticipated Notice to Proceed	<del>March 2010</del> <b>TBD"</b>

**ITEM SIX**

Change **SP Section B.20 Schedule of Activities, Page B-7** as follows:

"The MTA has established the following schedule for this RFP. The anticipated dates are only an estimate, and the MTA shall adjust the dates at its sole discretion.

<u>ITEM</u>	<u>DATE</u>
RFP Issue Date	June 30, 2010
Pre-Proposal Conference and Vehicle Inspection (9:00 a.m.)	July 22, 2010
Proposal Inquiry Deadline	<del>November 12, 2010</del> <b>February 15, 2011</b>

Closing Date for Receipt of Proposals (2:00 p.m.)

~~December 10, 2010~~  
March 31, 2011

Discussions (if held)

~~November 2010~~  
April 2011

Anticipated Selection Date

~~January 2010~~  
TBD"

Anticipated Notice to Proceed

~~March 2010~~  
TBD"

**ITEM SEVEN**

Change SP Section F.2 LAWS TO BE OBSERVED, last sentence, Page F-1 as follows:

"The provisions of this Contract will be governed by the law of the State of Maryland in accordance with COMAR regulations and **General Provisions for Purchase Contracts, Section IV, Exhibit AA.**"

**ITEM EIGHT**

Change SP Section H.4 PROGRESS PAYMENTS, Page H-1 as follows:

"The Administration will make payments consistent with the Payment provisions of the **General Provisions for Purchase Contracts, Section IV, Exhibit AA, Article 34 - Payment**, as the Work proceeds on payment estimates submitted by the Contractor, as approved by the Administration."

**ITEM NINE**

Change SP Section H.4.3.3 Contract Item 2 – MARC IIA Vehicle Overhaul, Milestone (1), Page H-3 as follows:

"Submittal and Approval of Monthly Project Progress Report. The Contractor may invoice against this milestone each month, during the ~~30~~ 24 months succeeding the NTP date.

**ITEM TEN**

Insert TS 2.4.2.15 Safety Appliances and Hardware, Page TS 2-8, first paragraph, new last sentence as follows:

"The vestibule curtain shall be renewed."

### **ITEM ELEVEN**

Change TS 2.4.7 Low Level Exit Path Marking, Page TS 2-15 (as revised in Addendum No. 4, Item Seven), as follows:

"The Contractor shall install Low Level Exit Path Marking (LLEPM). ~~to match the LLEPM installed on the MARC HB cars.~~

### **ITEM TWELVE**

Delete TS 3.4.1 Truck Frame and Bolster, (as revised in Addendum No. 4, Item Eight), Page TS 3-3 in its entirety and replace with the following:

"The truck frame and bolster assembly shall be overhauled. Truck frames and bolsters shall be cleaned and visually inspected for cracks, gouges, and wear. All paint shall be removed by bead or other OEM-approved cleaning methods that will not harm or damage trucks, obscure defects, or hinder the non-destructive testing process. Bolster reservoir holes shall be plugged before carrying out blasting/cleaning operations.

The entire truck frame and bolster shall be inspected by magnetic particle test or another approved NDT method. Special attention shall be given to the high stress areas or areas prone to cracking. The magnetic particle testing technician shall be properly trained and ASNT Level 3 certified. Technician certifications and magnetic particle test procedures shall be submitted to the Administration for review and approval prior to testing. (CDRL 304)

All worn spots, elongated holes, cracks, and similar anomalies shall be repaired. All truck frame and bolster repairs shall be performed by approved methods and in accordance with the OEM requirements and AWS. Repair procedures shall be submitted to the Administration for review and approval. (CDRL 305)

The interior of the bolster shall be inspected for rust with the use of a bore scope or similar device. If rust is found it shall be treated with Harris International Laboratories "EVAPO-RUST®" neutralizing solution, following the manufacturer's guidelines. The bolster shall be pressure tested for air leaks in accordance with the OEM requirements, or other methods, subject to Administration approval.

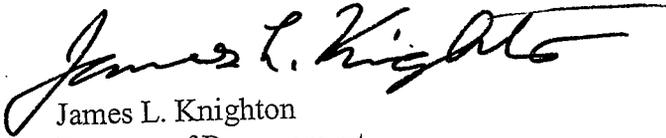
The Contractor shall check truck frame tram and the alignment of pedestals, including truck frame flatness, to OEM drawing specifications. If after tramming, the truck frame is not within the acceptable limits, the frame shall be straightened to comply with OEM requirements. Prior to straightening, the Contractor shall submit a detailed procedure to the Administration for review and approval. (CDRL 306)"

### **ITEM THIRTEEN**

Insert TS 5.4.1.5, HVAC Control Box, Page TS 5-4 (as revised in Addendum No. 4, Item Twenty-five, second paragraph, new third sentence as follows:

"The panel shall be the latest revision Vapor Stone Rail Systems P/N 20074052201 for the cab car and P/N 20074052202 for the trailer car, and be VSRS TCU 12 based logic control; or an authority approved equivalent.

All other conditions of this RFP remain the same. Any questions may be directed to Yvon J. Dupuis, at 410-767-3591 or faxed to 410-333-4810 or by email at [ydupuis@mta.maryland.gov](mailto:ydupuis@mta.maryland.gov).



James L. Knighton  
Director of Procurement

Enclosures:

Attachment A – Answers to RFP Questions No. 3

Attachment B – Test Procedures for MD-DOT Push-Pull Cars, Type and Class: MARC-II

Attachment C –MARC 180 Day MAP form

**ATTACHMENT A**  
**Addendum No. 10**  
**Answers to RFP Questions No. 3**

## T8000-0316 MARC IIA FLEET MID-LIFE OVERHAUL – RFP QUESTIONS

#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
204	<b>General</b>	Addendum 7	It appears item ten and item eleven are missing. In addendum 8 at least one of these was addressed as "ITEM FOUR". Please provide the missing information.	Addendum No. 7 Items Ten and Eleven are addressed in Addendum No. 8 as Items Three and Four.  Addendum No. 7 Item Nine is addressed in Addendum No. 8, Item 2.
197	<b>General</b>		Can you advise what Freight Railroad is along the Marc Line. We think it is CSX.	Yes, the freight railroad is CSX. See Addendum No. 7, Attachment A, response to Question 57.
169	<b>General</b>	Drawings	Vendor requests copies of any available circuit drawings of the existing communication system.	MTA does not have the information.
184	<b>General</b>	ADA Requirements	As required by specification, does the current configuration meet all provisions of the Americans with Disabilities Act (ADA)?	The cars met the requirements at the time they were built.
25	<b>General</b>	Pre-Bid Conference Follow-up/ DBE Content	<p>Vendor has a question about the DBE content. The problem is such: At the moment, the database on that page contains names and contact information, but no NAICS codes which means that for every single DBE firm we currently do business with on that list we must also ensure that the NAICS code they're qualified under matches the parts we use them for.</p> <p>Furthermore, it is a significant impediment to identifying which firms on the list we may qualify to provide parts for us, since we have no clear idea of what they provide from the general database.</p> <p>1. Is there any sort of database at all that contains the NAICS number? Even if it is just something so simple as a zip package of every website like the below linked, that would significantly help us.</p>	<p>Yes. This can be coordinated through the MTA Office of Fair Practice (410-767-3934) as indicated during the pre-bid conference.</p> <p><b>See Addendum No. 3, Attachment B.</b></p>

## T8000-0316 MARC IIA FLEET MID-LIFE OVERHAUL – RFP QUESTIONS

#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
164	<b>Addendum No. 4</b>	Item Nine	Addendum No. 4, Item Nine clarifies the wheel and axle set as being renewed. However, in the Special Provisions Section C.3.9.5.E (Trucks) it indicates for the Contractor to describe the technical approach to overhaul of the wheel axle set. This conflicts with the Technical Specification. Will the MTA update this section to agree with TS Section 3.4.2?	There will be no change to the Specification Special Provisions at this time.
205	<b>SP Section A Summary of Work</b>	A.4.4 Release of Vehicles A-4	Would MTA MARC allow the following sequence for shipping the cars? The following is based on the not-to-exceed release of vehicles. - Ship 1 Cab car & 1 Trailer car - Next ship the rest of the Trailer cars - Finish by shipping the rest of the Cab cars	To the extent possible MTA will work with the Contractor to accommodate this sequence, but cannot guarantee the release order of the vehicles.
206	<b>SP Section A Summary of Work</b>	A.4.4 Release of Vehicles A-4	What sequence does MTA MARC intend on shipping the cars after the release of the first Cab and Trailer car?	MTA cannot guarantee the release order of the vehicles. See question 205.
182	<b>SP Section A Summary of Work</b>	A.8.2 Definitions A-20	Please update the definition of “subcontractor” to be a provider of labor.	There will be no change to the Specification Special Provisions at this time.
183	<b>SP Section A Summary of Work</b>	A.8.2 Definitions A-20	Please update the definition of “supplier” to be a provider of material.	There will be no change to the Specification Special Provisions at this time.
196	<b>SP Section A Summary of Work</b>	A.4.3 Delivery of Vehicles and Other Deliverables Pg A-4	The spec requires the vehicles be delivered to Union Station in Washington but can be picked up anywhere along the line.	See Addendum No. 7, Item Seven
48	<b>SP Section B Proposal Requirements</b>	B.11.1.A Minority Business Enterprise Pg B-5	Can the DBE requirement be lowered from the current 13%? We respectfully request for the DBE content to be 5%.	There will be no change to the Specification Special Provisions at this time.
207	<b>SP Section B Proposal Requirements</b>	B.20 Schedule of Activities Pg B-7	Could MTA MARC specify the “Anticipated Selection Date” and “Anticipated Notice to Proceed”? This is imperative information for bidder to submit the most competitive pricing and accurate schedule.	The dates will be released in a future Addendum.

## T8000-0316 MARC IIA FLEET MID-LIFE OVERHAUL – RFP QUESTIONS

#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
33	<b>SP Section C Proposal Format and Organization</b>	C.3.9.2 Differences Between the Proposed Vehicle Overhaul Plan and the RFP Pg C-5	It is our interpretation that this section requires that the Contractor provide the proposed changes (commercial, contractual and technical changes) in a matrix or tabular format in rows and columns.  Please confirm.	The Proposer's interpretation is correct.
145	<b>SP Section D Prosecution and Progress</b>	D.10.1 Liquidated Damages Pg D-	The Bidder's organization requires that it put a cap on the exposure to liquidated damages. Would MTA please consider the following language inserted below the table:  <u>The maximum amount of liquidated damages payable hereunder shall not exceed 5% of the contract value.</u>	There will be no change to the Specification Special Provisions at this time.
208	<b>SP Section D Prosecution and Progress</b>	D.12.3 Conditional Acceptance Conditional Acceptance	Bidder requests conditional acceptance to be performed at contractor's facility. Having the car at the contractor's facility will allow access to all the tools and resources needed if a defect is found, and will reduce delays.	There will be no change to the Specification Special Provisions at this time.
146	<b>SP Section F Legal Requirements</b>	F.2 Laws to be Observed Pg F-1	Will MTA provide a copy of or link to the General Conditions referenced here?	<b>See Addendum No. 10, Item Seven</b>
152	<b>SP Section H Measurement and Payment</b>	H.4 Progress Payments Pg H-1	Will MTA provide a copy of or link to the General Conditions referenced here?	<b>See Addendum No. 10, Item Eight</b>
153	<b>SP Section H Measurement and Payment</b>	H.4.4.3 Contract Item 2 MARC IIA Vehicle Overhaul Milestone 1 Pg H-3	For this milestone, the Percentage Per Unit Price is: "(15/Vehicle)/24". Bidder does not understand why the MTA is dividing by 24 and not 30 (for 30 months). Please clarify.	<b>See Addendum No. 10, Item Nine</b>

## T8000-0316 MARC IIA FLEET MID-LIFE OVERHAUL – RFP QUESTIONS

#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
154	<b>SP Section H Measurement and Payment</b>	H.4.4.3 Contract Item 2 MARC IIA Vehicle Overhaul Milestone 2 Pg H-3	For this milestone, the Percentage Per Unit Price is: "10/Vehicle". Bidder does not understand why the MTA is dividing by the vehicles for this milestone. Please clarify.	This is to ensure supply chain commitment for the project duration.
202	<b>TS Section 2 Carbody</b>		The MTA Spec does not define what should be done with the vestibule curtain (2 per car). Please advise if they should be reused or replaced.	<b>See Addendum No.10, Item Ten</b>
203	<b>TS Section 2 Carbody</b>		The MTA spec does not define what should be done with the operator's windshield curtain (1 per cab car). Please advise if they should be reused or replaced.	The MARC IIA cars do not have windshield curtains. If the Contractor is referring to the sun-visors or sunshades, they shall be renewed in accordance with TS Section 11.4.3, Miscellaneous Equipment.
181	<b>TS Section 2 Carbody</b>	TS 2.4.2	Based on the proprietary nature of the exterior signage, would MTA MARC free issue new signage and graphics? The supplier indicated they will not quote unless written permission is given by Bombardier.	The MTA has purchased exterior decal packages from INPS under part numbers: INPS-MARCII-EXT-CAB and INPS-MARCII-EXT-TRAILER.
195	<b>TS Section 2 Carbody</b>	TS 2.4.2.1 TS 2-3	The Vendor respectfully requests an estimation of the minimum repairs to be made in the roof, according to the Administration maintenance experience in MARC IIA trains along the last years.	Historically, the MTA has had to make repairs to 5% of the MARC IIA fleet on an area of 1 sq.ft. or less. This figure is to be used for informational purposes only.  The Contractor is responsible for the requirements for TS Section 2.4.2.1.
201	<b>TS Section 2 Carbody</b>	TS 2.4.4	Per TS section 2.4.4, the flooring shall be equivalent to Nora 935 Grano series (one meter x one meter tiles). Per TS section 2.4.7, the LLEPM shall match the MARC IIB cars. Per attached photo, the Nora 935 Grano flooring will be the same as is installed into the MARC III cars. The LLEPM in MARC III cars consist of cylindrical plugs. The LLEPM in the Marc IIB cars is a longitudinal strip installed between grooves in the rolled rubber flooring. Shall the LLEPM shall match the MARC III or MARC IIB cars?	<b>See Addendum No. 10, Item Eleven</b>

## T8000-0316 MARC IIA FLEET MID-LIFE OVERHAUL – RFP QUESTIONS

#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
200	<b>TS Section 3 Trucks</b>	TS 3.3 TS 3-2	Section of 11 on Trucks indicates that the truck frame be merely stripped and painted indicating the frame may not need to be blasted down to bare metal and then magnafluxed and defects corrected, repainted etc. The spec does say “the contractor is to perform a full overhaul of the truck system. Please clarify that the contract requires of does not require full blasting and magnaflux of the frame and bolster.	<b>See Addendum No. 10, Item Twelve</b>
198	<b>TS Section 3 Trucks</b>	TS 3.4 TS 3-2	Section 3.4 of the spec states that “it is the contractor’s responsibility to obtain the complete truck system specification and overhaul requirements from the OEM (Nippon Sharyo). At this point Nippon Sharyo indicates they will not provide this information. Will the MTA be able to provide the OEM information from Nippon Sharyo based on their previous relationship and procurement of the Marc IIA vehicles	To the extent possible MTA will work with the Contractor in providing all necessary information during the rebuild process.
199	<b>TS Section 3 Trucks</b>	TS 3.4.1 TS 3-3	Can the MTA advise if section 3.4.1 “Truck Frame & Bolster” is complete (inspection of the interior of the bolster only) or do they want the workscope to be the same as was done for MARC IIB (T-0181-0140) (See attached page as info).	<b>See Addendum No. 10, Item Twelve</b>
170	<b>TS Section 7 Communication System</b>		Vendor requests information on the data train line protocol or (if not available) requests a waiver for no compatibility of the data train line. Please confirm existing data train line within the double deck cars is not in use	See Addendum No. 7, Item Three
171	<b>TS Section 7 Communication System</b>	7.4.1.2	Section 7.4.1.2 Recording announcements shall be downloadable to a PCMCIA card for storage. Vendor requests a waiver to allow the use of a USB stick or SD card.	See Addendum No. 7, Item Three
172	<b>TS Section 7 Communication System</b>	7.4.1.3 Pg. TS 7-6	Page TS 7-6, Section 7.4.1.3 Amplifier. The second to last paragraph is requesting noise sensing microphones in the upper and lower level. MARC IIA cars are single level cars. Please clarify.	See Addendum No. 7, Item Three

## T8000-0316 MARC IIA FLEET MID-LIFE OVERHAUL – RFP QUESTIONS

#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
173	<b>TS Section 7 Communication System</b>	7.4.2.1	Section 7.4.2.1 Interior speakers. Can the speaker grille and transformer be reused?	See Addendum No. 7, Item Three
174	<b>TS Section 7 Communication System</b>	7.4.4.1.A	Section 7.4.4.1.A: A handset and Intercom speaker mounted behind a vandal-proof, perforated grille is specified. The existing CCP has a microphone and Intercom speaker mounted behind a vandal-proof, perforated grille. What is correct the handset or the microphone?	See Addendum No. 7, Item Three
175	<b>TS Section 7 Communication System</b>	7.4.4.1 Pg. TS 7-8	Section 7.4.4.1, the first paragraph on page TS 7-8: Please explain in more detail the function of the key switch, which shall activate the Communication System without physically moving a switch contact (?).	See Addendum No. 7, Item Three. The key switch shall activate a contact switch.
176	<b>TS Section 7 Communication System</b>	7.4.5.1.A	Section 7.4.5.1.A: ODK and SCU are abbreviations for Luminator products. Vendor requests a waiver to allow the use of other than Luminator products to meet the specification.	This shall be discussed during design reviews. All substitutions shall be made on a case-by-case basis, and shall be subject to the requirements of TS section
177	<b>TS Section 7 Communication System</b>	7.4.5.1.B	Section 7.4.5.1.B: 3" LCD side signs are requested as interior signs. Is this correct? The interior signs in the double deck cars are 2.3" LED signs.	The interior signs shall be LCD. There will be no change to the Technical Specification at this time.
178	<b>TS Section 7 Communication System</b>	7.4.5.2	Section 7.4.5.2, 2nd paragraph: It shall be possible to program all signs with different messages from any ODK. Does this mean different messages in each car or in each sign? Please clarify.	Neither interpretation is correct. This shall be a trainlined function for the entire consist.
179	<b>TS Section 7 Communication System</b>	7.4.5.3	7.4.5.3: A PCMCIA Card is requested as the Memory Transfer Unit. PCMCIA Cards are outdated by USB sticks or SD cards. TCSI requests a waiver to allow use of a USB stick or SD card instead.	See Addendum No. 7, Item Three
180	<b>TS Section 7 Communication System</b>	7.4.5.3	Is the GE 12R Series II in the scope of supply or will it be provided by MTA? Please clarify.	The GE 12R Series will not be provided by the MTA. The Contractor will be responsible for providing the unit.
191	<b>TS Section 10 Trainline Information System</b>	10.4 TS 10-2	Could the Administration clarify if the upper limit of the Motor AMPS Indicator in TIS overhaul should be 1,800 amps as maximum or 2,400 as the actual one?	The upper limit should be 2,400 amps, similar to the existing unit.

## T8000-0316 MARC IIA FLEET MID-LIFE OVERHAUL – RFP QUESTIONS

#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
192	<b>TS Section 10 Trainline Information System</b>	10.4 TS 10-2	Could the Administration clarify if the Line Indicator in TIS overhaul should be 26KV as maximum or 28KV as the actual one?	The Line Indicator should be 28KV, similar to the existing unit.
193	<b>TS Section 10 Trainline Information System</b>	10.4 TS 10-2	Could the Administration indicate where are located the following scope of work components within the actual TIS cab device (model TD20B):  - Recorder - TIS Fault Indicator  Because there are only 3 lights on it: Dynamic Brake, PWR and DATA.	The TIS does not incorporate the Event Recorder.  The TIS fault indicator is actually the illumination of the PWR/DATA light.
187	<b>TS Section 11 Cab</b>	11.1 TS 11-1	The Vendor respectfully requests detailed information about the cab panels. To be precise, OEM and BOM (Bill of Materials) of the panels should be detailed by the Administration to assure the Contractor will be able to renew or upgrade the actual parts if necessary and quote these items with a cost-effective solution.	To the extent possible the information is contained in the parts manuals. The MTA will work with the Contractor to update parts during the overhaul process.
188	<b>TS Section 11 Cab</b>	11.4.2 TS 11-3	The Vendor respectfully requests the OEM of the actual Event Recorder and Alerter systems. Also, could the Administration clarify if the red emergency push-button located at the bottom of the cab left panel is related with the Alerter System?	The vendor is Wabtec (Pulse). The red pushbutton is not an “Emergency” pushbutton, it is an “Acknowledge” pushbutton; and it is part of the Alerter system.
189	<b>TS Section 11 Cab</b>	11.4.2 TS 11-3	The Vendor respectfully requests the actual electrical drawings of the Event Recorder and Alerter systems.	Only the interface drawing is available. It was distributed in the drawing package.
190	<b>TS Section 12 Lighting</b>	12.4.1 TS 12-2	The Vendor respectfully requests an estimation of broken sockets, cracked or discolored lenses according to the Administration maintenance experience in MARC IIA trains along the last years.	See Addendum No. 7, Item Seventeen
129	<b>TS Section 14 Testing</b>	14.4.3.1 184-Day Inspection Pg TS 14-6	Please provide an example of the MTA MARC 184-Day Inspection requirements for these cars.	<b>See Addendum No. 10, Item Four</b>

## T8000-0316 MARC IIA FLEET MID-LIFE OVERHAUL – RFP QUESTIONS

#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
127	<b>TS Section 14 Testing</b>	14.1 General Pg TS 14-1	Please provide applicable test documentation used on the <u>MARC IIA</u> cars for reference.	<b>See Addendum No. 10, Item Three</b>
128	<b>TS Section 14 Testing</b>	14.1 General Pg TS 14-1	Please provide applicable test documentation used on the <u>MARC IIB</u> cars for reference.	<b>See Addendum No. 10, Item Three</b>
132	<b>TS Section 17 System Safety Program</b>	17.1 General Pg TS 17-1 And 17.2 System Safety Program Objectives Pg 17-2	As the cars currently exist, has a System Safety Program Plan been produced for the entire car?	The plan will be developed by the MTA and will be available to the Contractor after award.
134	<b>TS Section 17 System Safety Program</b>	17.12 Safety and Security Certification Program Pg TS 17-16	As the cars currently exist, has a Safety and Security Certification Program Plan been produced for the entire car?	The plan will be developed by the MTA and will be available to the Contractor after award.

TEST-PROCEDURES

FOR

MD-DOT PUSH-PULL CARS

Type and Class : MARC-II

CONTRACT NO. SRA-2108-003

<input checked="" type="checkbox"/>	<u>DMJM/RKE</u>
<input checked="" type="checkbox"/>	Recommended for Approval
<input type="checkbox"/>	Recommended for approval as noted.
<input type="checkbox"/>	Not Recommended for Approval
See letter _____	

Revised Feb. 1986

**FILE COPY**

NIPPON SHARYO, LTD.

LIST OF  
TEST PROCEDURES

1.	Electrical Test -- Ring Out Inspection	TP-010
2.	Electrical Test -- Ground Insulation Test	TP-011
3.	Electrical Test -- Hi-pot Test	TP-012
4.	Car Body Dimension Measurement	TP-013
5.	Electrical Test -- Function Test	TP-014
6.	Electrical Test -- Trainline Test (one car)	TP-015
7.	Electrical Test -- Trainline Test (3 or 6 cars)	TP-015'
8.	Air Brake Functional Test	TP-016
9.	Hand Brake Test	TP-017
10.	Communication System Test	TP-018
11.	Train Radio Power Measurement	TP-018'
12.	Door Operation Test	TP-019
13.	Air Balance and Air Diffuser Test	TP-020
14.	Air-conditioning Function Test	TP-021
15.	Heating Function Test	TP-022
16.	Defroster Function Test	TP-023
17.	Water System Test	TP-024
18.	Operating Compartment Accessories Test	TP-025
19.	Cab Signal/ATC System Test (at shop)	TP-026
20.	Cab Signal/ATC System Test (at site)	TP-026'
21.	Car Body Water Tightness Test (completed car)	TP-027
22.	Weighing (completed car)	TP-050
23.	Stop Distance and Deceleration Test	TP-051,153
24.	Equalization Test	TP-100
25.	Stability Test	TP-101
26.	Weighing (truck)	TP-102
27.	Low Voltage Operation Test	TP-110
28.	Light Intensity Measurement	TP-111
29.	Air-conditioning Test (Hot Room Test)	TP-112
30.	Vibration Measurement	TP-113

31.	Noise Measurement	TP-114
32.	Clearance Check	TP-115
33.	Curve Negotiation and Truck Clearance	TP-150
34.	Clearance At-actual-line Check	TP-151
35.	Compatibility Test	TP-152
36.	Heating Qualification Test	TP-155
37.	Defroster Qualification Test	TP-155'
38.	Trainline Voltage Drop Test	TP-156
39.	Major Subassembly Configuration Record	-----



## Test &amp; Inspection

## Electrical Test -- Ring Out Inspection

- D. Check between JB "center" and circuit breaker "MACB" in CB box.
- E. Check between "MLCB" in CB box and primary terminals of transformers under floor.
- F. Check between "BCCB" in CB box and battery charger.

## 4.2 Locomotive control circuit

- A. Check trainlines between:

JCRL-A and JB A-R  
 JB A-R and JB B-R  
 JB B-R and JCRL-B

- B. Check jumper cable for loco. control between plugs.
- C. Check continuity between JB B-R and loco. control equipments.

## 4.3 Car control circuit

- A. Check trainlines between:

JCRC-A and JB A-L  
 JB A-L and JB B-L  
 JB B-L and JCRC-B

- B. Check jumper cable for car control between plugs.
- C. Check continuity between JB A-L (or JB B-L) and relay panels.

## 4.4 480 volts circuits

- A. Check continuity between:

CB box under floor and Temp. control box

BFB1	BFC1
BFB2	BFC2
CFB1	CMC
CFB2	RCMC
OHB1	OHC11 and OHC12
OHB2	OHC21 and OHC22
FHB1	FHC1
FHB2	FHC2
CHB	CHC1, CHC1A and CHC2 (cab car only)

- B. Check between:

Temp. control box and Equipment

BFC1	BFM1 in Evaporator unit (A-end)
BFC2	BFM2 in do. (B-end)
CMC	CFM1 in Comp. cond. unit
RCMC	CFM2 & RCM in Comp. cond. unit

- C. Measure resistance of each heater circuit instead of ring out method between temp. control box and overhead heaters, floor heaters and cab heaters.

## Test &amp; Inspection

## Electrical Test -- Ring Out Inspection

- 4.5 120 volts circuits
  - A. Check between secondary terminals of transformers under floor and CB panel.
  - B. Check other circuits according to check sheet.
- 4.6 74 volts circuits
  - A. Check between output terminals of battery charger and "MDCB" in CB box under floor.
  - B. Check between "MDCB" and CB panel.
  - C. Check between battery charger and CB panel.
  - D. Check between CB panel and battery box, and confirm polarity of battery connection.
- 4.7 Other circuits
  - A. PA/IC control circuit
  - B. Wheel slide control circuit
  - C. Cab signal/ATC circuit
  - D. Radio control circuit

## 5 Criteria

Confirmation

TEST REPORT for RING OUT INSPECTION (1/1)

CAR No. \_\_\_\_\_

DATE: \_\_\_\_\_

MD-DOT: \_\_\_\_\_

NS: \_\_\_\_\_

GE: \_\_\_\_\_

No	Description	Criteria	Result	Remarks
1	Power & power control circuits	Confirmation	<u>PASS/FAIL</u>	
2	Locomotive control circuits	"	<u>PASS/FAIL</u>	
3	Car control circuits	"	<u>PASS/FAIL</u>	
4	480 volts circuits	"	<u>PASS/FAIL</u>	
5	120 volts circuits	"	<u>PASS/FAIL</u>	
6	74 volts circuits	"	<u>PASS/FAIL</u>	
7	Floor heater H441-H451		_____ Ohm	
8	" H451-H461		_____ Ohm	
9	" H461-H441		_____ Ohm	
10	" H445-H455		_____ Ohm	
11	" H455-H465		_____ Ohm	
12	" H465-H445		_____ Ohm	
13	Cab heater H472-H482		_____ Ohm	cab car only
14	" H482-H492		_____ Ohm	"
15	" H473-H483		_____ Ohm	"
16	" H473-H493		_____ Ohm	"
17	Defroster H213-H221		_____ Ohm	"
18	Door heater H202-H212		_____ Ohm	
19	Water tank & drain heater H202-H222		_____ Ohm	cab car only

# Detailed Test Plan

TP-011-1/1

Date: May 14, '85

<b>Test &amp; Inspection</b>	Electrical Test -- Ground Insulation Test		
<b>Specification</b>	2.1.9.(c).2	<b>Frequency</b>	All Cars
<b>Test location</b>	GE Plant/MD-DOT Property	<b>Train consist</b>	One Car

**1 Purpose of Test**

To confirm that all wiring is insulated from car body with the exception of these wires grounded by design.

**2 Test Prerequisites**

- 2.1 All switches and circuit breakers turned OFF.
- 2.2 Grounding wires "GG" and "C2" should be disconnected.
- 2.3 Isolate Train radio unit, PA amplifier, Cab signal rack and other electronic equipments by removing wires at terminal board or disconnecting the connectors.

**3 Equipment Required**

500 volts Megger      YEW 2405-02    500V/100MOHM

**4 Test Procedure**

- 4.1 Measure insulation resistance between each circuit and car body.
- 4.2 Measuring points will be indicated on check sheet.

**5 Criteria**

Insulation resistance shall be at least:

<u>Circuit</u>	<u>Minimum value</u>
74 volts	2 Megohms
120 volts	3 Megohms
480 volts	3 Megohms

Note; This test shall be performed at MD-DOT property too, and reported by the sheet TP-011'.

**Remarks**

REV. Aug. 3, '85

REV. Jan. 23, 1986

TEST REPORT for GROUND INSULATION TEST (1/1)

CAR No. \_\_\_\_\_

DATE: \_\_\_\_\_

MD-DOT: \_\_\_\_\_

NS: \_\_\_\_\_

GE: \_\_\_\_\_

No	Description	Criteria	Result	Remarks
1	74 volts circuits	More than 2 megohm	_____ megohm	
2	120 volts circuits	More than 3 megohm	_____ megohm	
3	480 volts circuits	More than 3 megohm	_____ megohm	

TEST REPORT for GROUND INSULATION TEST TP-011' (1/1)

(at IVY CITY COACH YARD, WASHINGTON)

Car No. \_\_\_\_\_

Date: \_\_\_\_\_

MD-DOT : \_\_\_\_\_

NS: \_\_\_\_\_

No.	Description	Criteria	Result	Remarks
1.	74 volts circuits	More than 2 megohm	_____ megohm	
2.	120 "	" 3 megohm	_____ megohm	
3.	480 "	" 3 megohm	_____ megohm	

## Detailed Test Plan

Date: May 14, '85

Test & Inspection	Electrical Test -- Hi-pot Test		
Specification	2.1.9.(c).3	Frequency	All Cars
Test Location	GE Plant	Train Consist	One Car

## 1 Purpose of Test

To confirm dielectric strength of each circuit.

## 2 Test Prerequisites

- 2.1 Grounding wires "GG" and "C2" shall be disconnected.
- 2.2 Isolate Train radio unit, PA amplifier, Cab signal rack and other electronic equipments by removing wires at terminal board or disconnecting the connectors.
- 2.3 Wires to battery box shall be disconnected.
- 2.4 All switches and circuit breakers turned ON.

## 3 Equipment Required

Hi-pot Tester            American High Voltage Co., Maryland  
 Model 95-2, S/N 79-165, 0 to 5 kV

## 4 Test Procedure

- 4.1 Set up Hi-pot tester, and connect negative wire to grounding pad of car body.
- 4.2 Temporarily jumper 480 volts circuit and 120 volts circuit to ground pad of car body.
- 4.3 For 74 volts circuits, connect test wire to wires #B3 and #C2 at "MDCB".
- 4.4 Increase voltage up to 980 volts and hold for 60 seconds. Decrease voltage and power off after test completed.
- 4.5 Temporarily jumper 480 volts circuit and 74 volts circuit to ground pad of car body.
- 4.6 For 120 volts circuits, connect test wire to wires #P101, #P111 and #P121 at CB Panel.

## Remarks:

REV. Aug. 3, '85

## Test &amp; Inspection

## Electrical Test --- Hi-pot Test

- 4.7 Increase voltage up to 1050 volts and hold for 60 seconds.  
Decrease voltage and power off after test completed.
- 4.8 Temporarily jumper 120 volts circuit and 74 volts circuit to ground pad of car body.
- 4.9 For 480 volts circuits, connect test wire to wires #P1, #P2 and #P3 at "MACB".
- 4.10 Increase voltage up to 1650 volts and hold for 60 seconds.  
Decrease voltage and power off after test completed.

## 5 Criteria

IEEE No.11 for power circuits

IEEE No.16 for control circuits

i.e. Test Voltage:  $0.85 \times (2 \times E + 1000)$

here E is nominal system voltage of  
each circuit

Test Period: 60 Seconds

TP-012

TEST REPORT for HI-POT TEST (1/1)

CAR No. \_\_\_\_\_

DATE: \_\_\_\_\_

MD-DOT: \_\_\_\_\_

NS: \_\_\_\_\_

GE: \_\_\_\_\_

No	Description	Criteria	Result	Remarks
1	74 volts circuits	980 volts x 60 sec.	_____	
2	120 volts circuits	1050 volts x 60 sec	_____	
3	480 volts circuits	1650 volts x 60 sec	_____	
4	Leakage current at 0 sec. for 74 V circuit		_____ mA	
5	" at 60 sec. for "		_____ mA	
6	Leakage current at 0 sec. for 120 V circuit		_____ mA	
7	" at 60 sec. for "		_____ mA	
8	Leakage current at 0 sec. for 480 V circuit		_____ mA	
9	" at 60 sec. for "		_____ mA	

# Detailed Test Plan

TP-013 -1/4

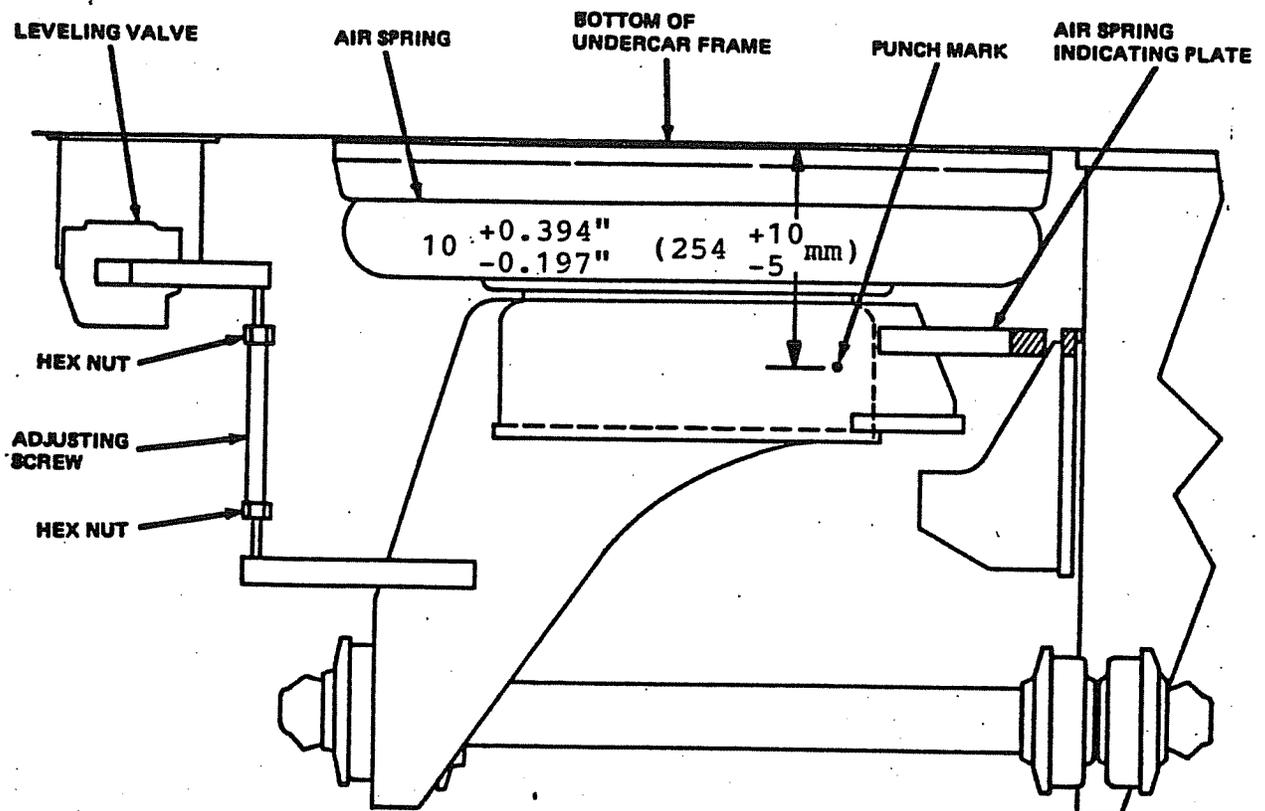
Date: Jan. 23, 1986

Test & Inspection	Car Body Dimension Measurement														
Specification	2.2.2(a)	Frequency	All Cars												
Test Location	GE Plant	Train Consist	One Car												
<p>1. Purpose of Test To check and adjust the dimension of the complete car.</p> <p>2. Test Prerequisite</p> <ol style="list-style-type: none"> <li>1) Car set on the level tangent track.</li> <li>2) Air spring shall be inflated and adjusted.</li> <li>3) Empty condition.</li> </ol> <p>3. Equipment Required</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 60%;">1) Steel tape rules</td> <td>16 ft. &amp; 100 ft.</td> </tr> <tr> <td>2) Plumb bobs</td> <td>2 set</td> </tr> <tr> <td>3) Straight edges</td> <td>12 ft.</td> </tr> <tr> <td>4) Steel rules</td> <td>1 ft. &amp; 3 ft.</td> </tr> <tr> <td>5) Transit leveler</td> <td>1 set</td> </tr> <tr> <td>6) Inside pass</td> <td>1 set</td> </tr> </table> <p>4. Test Procedure</p> <p>4.1 Adjustment of car body height - befor measurement</p> <ol style="list-style-type: none"> <li>1) Loosen hex nuts on top and bottom of the leveling valve adjusting screw.</li> <li>2) Rotate adjusting screw for both leveling valves on the truck, in a counterclockwise direction, at the same time (to raise carbody), as required to adjust for approx. 10 1/2" between the underframe of the carbody and the punch mark on the bolster and air spring assembly.</li> <li>3) Rotate adjusting screw clockwise and gradually exhaust air by slowly turning adjusting screw, stop at the height of 10"(254mm).</li> </ol>				1) Steel tape rules	16 ft. & 100 ft.	2) Plumb bobs	2 set	3) Straight edges	12 ft.	4) Steel rules	1 ft. & 3 ft.	5) Transit leveler	1 set	6) Inside pass	1 set
1) Steel tape rules	16 ft. & 100 ft.														
2) Plumb bobs	2 set														
3) Straight edges	12 ft.														
4) Steel rules	1 ft. & 3 ft.														
5) Transit leveler	1 set														
6) Inside pass	1 set														
Remarks:															

## Test &amp; Inspection

## Car Body Dimension Measurement

- 4) Repeat steps 1,2 and 3 for opposite end truck.
- 5) Check Air Spring height and re-adjust, if necessary.
- 4.2 Measurement of car body dimension - note what dimensions.
- 4.3 Adjustment of car body height - after measurement
  - 1) Rotate adjusting screw for both leveling valve on the truck in a counterclockwise direction at the same time (to raise carbody), as required to adjust for approx. 10 5/8" between the underframe of the carbody and the punch mark on the bolster and air spring assembly.
  - 2) Rotate adjusting screw clockwise and gradually exhaust air by slowly turning adjusting screw, stop at the height 10.39"(264mm).
  - 3) Tighten hex nuts.
  - 4) Adjust other end leveling valves.
  - 5) Check all adjustment and re-adjust, if necessary.



Test & Inspection	Car Body Dimension Measurement		
5. Measurement Items, Criteria and Tool			
5.1 Car Body			
No.	ITEMS	CRITERIA	TOOL
1.	Height of air springs.	10 +0.394" -0.197"	steel rules
2.	Height of center of couplers to rail. (Adjust coupler height by shank carrier, if necessary)	34 1/2 ±1/2"	straight edge & steel tape rule
3.	Height of top of vestibule floor to rail.	51 9/16 +7/16" -9/16"	ditto
4.	Height of steps to rail.	17"	ditto
5.	Height of roof to rail.	Max. 13' -1"	ditto
6.	Height of end pilot to rail.	Max. 6"	ditto
7.	Width of car body.	Max. 10' -6"	ditto
8.	Camber between bolsters.		
	1) Empty - all cars	Not exceed 3/4"	transit leveler steel rules
	2) Crush load - first cab car	Not less than 0"	transit leveler steel rules load - 33,000 lbs.
9.	Length of car over pulling face of couplers.	85' -0"	steel tape rule & plum bobs

Test & Inspection	Car Body Dimension Measurement		
5.2 Truck			
No.	ITEMS	CRITERIA	TOOL
1.	Distance between Axle Box and Truck Frame. (Adjust distance by adjusting liner, if necessary)	$3 \frac{35}{64} + \frac{15}{64}''$ $-0''$ (90 $\begin{smallmatrix} +6 \\ -0 \end{smallmatrix}$ mm)	inside pass steel rule
2.	Clearance of lateral stopper (adjust clearance by adjusting liner, if necessary)	Max. 0.51'' (13mm) Min. 0.35'' (9mm)	ditto
3.	Distance between the punch marks of Bolster Anchor.	26.38'' (670mm)	steel rule

Test Report for Car Body Dimension Measurement (1/3)      TP-013

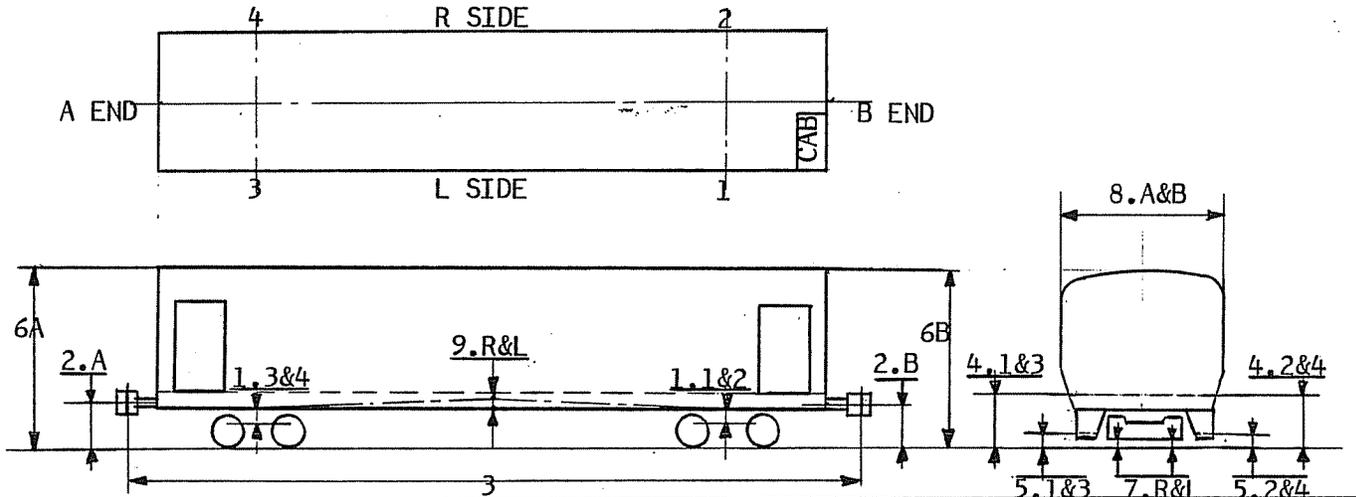
CAR No. \_\_\_\_\_

DATE: \_\_\_\_\_

MD-DOT: \_\_\_\_\_

NS: \_\_\_\_\_

GE: \_\_\_\_\_

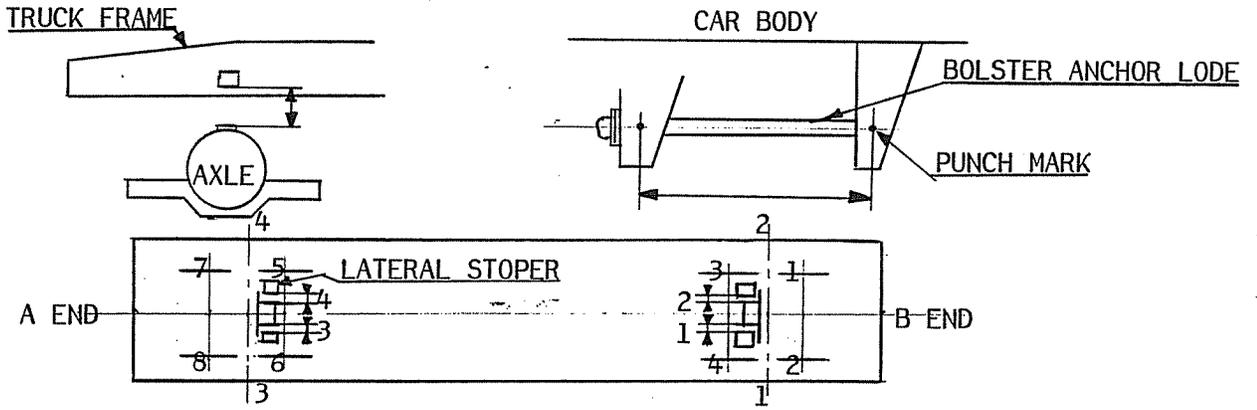


No	Description	Criteria	Result	Remarks
1	Height of Air Springs.	10" +0.394" -0.197"	1 _____ 2 _____ 3 _____ 4 _____	
2	Height of Center of Couplers to Rail.	34 1/2" ±1/2"	A _____ B _____	
3	Length of Car Over Pulling Face of Couplers.	85' -0"	_____	
4	Height of Top of Vestibule Floor to Rail.	51 9/16" +7/16" -9/16"	1 _____ 2 _____ 3 _____ 4 _____	

CAR No. \_\_\_\_\_ Test Report for Car Body Dimension Measurement (2/3)

No	Description	Criteria	Result	Remarks
5	Height of Steps to Rail.	17"	1 _____ 2 _____ 3 _____ 4 _____	
6	Height of Roof to Rail	Max. 13' -1"	A _____ B _____	
7	Height of End Pilot to Rail.	Max. 6"	R _____ L _____	only Cab Car
8	Width of Car Body * Measured at the body shell.	Max. 10' -6"	A _____ B _____	
9	Camber between Bolsters 1) Empty Condition 2) Crush Load Condition * 33,000 lbs	Not exceed 3/4"  Not less than 0"	R _____ L _____  R _____ L _____	only First Cab Car

CAR No. \_\_\_\_\_ Test Report for Car Body Dimension Measurement (3/3)



No	Description	Criteria	Result	Remarks
1	Distance between Axle Box and Truck Frame.	$3 \frac{35}{64}'' + \frac{15}{64}'' - 0''$ (90 $\begin{smallmatrix} +6 \\ -0 \end{smallmatrix}$ mm)	1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____ 7 _____ 8 _____	
2	Clearance of Lateral Stopper.	Max. 0.51" (13mm) Min. 0.35" (9mm)	1 _____ 2 _____ 3 _____ 4 _____	
3	Distance between The Punch Marks of Bolster Anchor.	26.38" (670mm)	1 _____ 2 _____ 3 _____ 4 _____	

# Detailed Test Plan

TP- 014-1/2

Date: May 14, '85

Test & Inspection	Electrical Test -- Function Test		
Specification	2.1.9.(c).4	Frequency	All Cars
Test location	GE Plant	Train consist	One Car

**1 Purpose of Test**

To confirm the functional of operation of the following equipment.

**2 Test Prerequisites**

- 2.1 All equipment must be installed and all wiring completed.
- 2.2 All switches and circuit breakers shall be OFF.
- 2.3 The wires to battery box shall be connected.
- 2.4 To be provided with 480 volts standby of wayside power.

**3 Equipments Required**

Multimeters (DC 0-100V, AC 0-600V, DC 0-50A, AC 0-100A, 0-10k ohm)

For equivalence

Phase tester HIOKI 3122, 110-450V, 40-70 Hz

**4 Test Procedure**

- 4.1 Supply 60Hz 480 volts power to the car, AFTER checking the phase rotation.
- 4.2 Turn "BAB" ON, and check voltage & polarity of the wires #B2-#C2A, #B3-#C2 at "MDCB".
- 4.3 Turn "MACB" and "BCCB" ON, check output voltage of battery charger. Turn "MDCB" ON.
- 4.4 Turn "MLCB" ON, measure input & output voltage of transformers.
- 4.5 Check all the lighting equipments according to check sheet.
- 4.6 Check PA/IC system
- 4.7 Check door control system
- 4.8 Check heating, ventilating and air-conditioning system.
- 4.9 Check miscellaneous equipment operation.  
convenience outlet, exhaust fan, marker light, locker light etc.

**Remarks**

REV. Aug. 3, '85

**Test & Inspection****Electrical Test -- Function Test**

In case of cab car, the following tests shall be added.

Headlight control

Gauge light control

Hand dryer and water cooler

Protective heater for water pipes

Car number sign

Cab signal/ATC system

Radio control

**5 Criteria**

Confirmation

TP-014

TEST REPORT for ELECTRICAL FUNCTION TEST (1/2)

CAR No. \_\_\_\_\_

DATE: \_\_\_\_\_

MD-DOT: \_\_\_\_\_

NS: \_\_\_\_\_

GE: \_\_\_\_\_

No	Description	Criteria	Result	Remarks
1	Battery charging voltage	72 - 75 volts	_____ volts	
2	Transformer voltage Input #P7 - #P8 #P8 - #P9 #P9 - #P7 Output #P101 - #P111 #P111 - #P121 #P121 - #P101	480/120 volts	_____ _____ _____ _____ _____ _____ _____ volts	
3	Lighting system: Passenger area Platform light Marker light Emergency light Vestibule light Locker light Headlight Gauge light Car number signs	Confirmation " " " " " " " "	<u>PASS/FAIL</u> <u>PASS/FAIL</u> <u>PASS/FAIL</u> <u>PASS/FAIL</u> <u>PASS/FAIL</u> <u>PASS/FAIL</u> <u>PASS/FAIL</u> <u>PASS/FAIL</u> <u>PASS/FAIL</u> <u>PASS/FAIL</u>	Cab car only Cab car only Cab car only
4	Air-conditioning, Heating system Evaporator blower Condenser fan Compressor Overhead heater Floor heater Cab heater Defroster Exhaust fan	Confirmation " " " " " " "	<u>PASS/FAIL</u> <u>PASS/FAIL</u> <u>PASS/FAIL</u> <u>PASS/FAIL</u> <u>PASS/FAIL</u> <u>PASS/FAIL</u> <u>PASS/FAIL</u> <u>PASS/FAIL</u> <u>PASS/FAIL</u>	Cab car only Cab car only

TEST REPORT for ELECTRICAL FUNCTION TEST (2/2)

CAR No. \_\_\_\_\_

No	Description	Criteria	Result	Remarks
5	Communication system PA mode IC mode	Confirmation "	<u>PASS/FAIL</u> <u>PASS/FAIL</u>	
6	Door operation test	"	<u>PASS/FAIL</u>	See another report
7	Wheel slide control	"	<u>PASS/FAIL</u>	
8	Cab signal/ATC system	"	<u>PASS/FAIL</u>	Cab car only
9	Train radio	"	<u>PASS/FAIL</u>	Cab car only
10	Other auxiliary equip. Convenience outlet Door track heater Door pocket heater Drain pipe heater Hand dryer Water cooler	" " " " " "	<u>PASS/FAIL</u> <u>PASS/FAIL</u> <u>PASS/FAIL</u> <u>PASS/FAIL</u> <u>PASS/FAIL</u> <u>PASS/FAIL</u>	Cab car only Cab car only Cab car only
11	Trainline test Locomotive control Car control	" "	<u>PASS/FAIL</u> <u>PASS/FAIL</u>	Cab car only

# Detailed Test Plan

TP-015-1/3  
Date: May 14, '85

Test & Inspection	Electrical Test -- Trainline Test (One Car)		
Specification	2.1.9.(c).6	Frequency	All Cars
Test location	GE Plant	Train consist	One Car

**1 Purpose of Test**

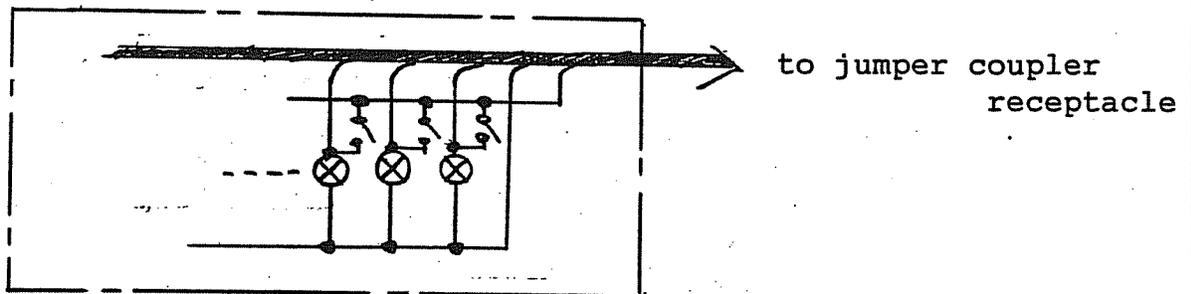
To confirm that trainlined equipments are operated properly by trainline signal.

**2 Test Prerequisites**

All equipments shall be in normal operating condition.

**3 Equipment Required**

Trainline Tester as illustrated below.



**4 Test Procedure**

**4.1 Locomotive control circuits**

- A. Set up trainline tester at "JCRL-A".
- B. On operating the locomotive control apparatus at cab, observe the indication lamps on trainline tester to check that trainline signals are activated properly.
- C. On operating the switches on trainline tester, observe the indication lamps in cab to check that each lamp is lit properly by trainline signal.

**4.2 Door control/communication control circuits**

- A. Set up trainline tester at "JCRC-A".
- B. On operating the switches on trainline tester, observe the

Remarks

## Test &amp; Inspection

## Electrical Test -- Trainline Test (One Car)

trainlined equipments to check each equipment is controlled properly by trainline signal.

## 5. Criteria

## Confirmation

Trainlines for locomotive control are as follows:

<u>Pin # at "JCRL-A"</u>	<u>Description</u>
#1	Command for power source change-over to 11kV-25Hz
#2	Signal for alarm
#3	Command for "D" valve
#4	NEGATIVE of trainline battery for loco. control
#5	Command for sanding in emergency braking
#6	Command for motor control
#7	Command for "C" valve
#8	Command for reverse
#9	Command for forward
#10	Signal for indication of wheel slip
#11	Signal for indication of auto power reduction
#12	Command for "B" valve
#13	POSITIVE of trainline battery for loco control
#14	Command for pantograph down
#15	Command for "A" valve
#16	Command for fuel pump ON/OFF
#18	Command for power source change-over to 25kV-60Hz
#19	Signal for indication of traction motor current excessive
#20	Signal for indication of dynamic brake warning
#23	Command/Signal for manual sanding on loco.
#26	Command for fault reset
#27	Signal for indication of no power brake

## Test &amp; Inspection

## Electrical Test -- Trainline Test (One Car)

Trainlines for door/communication control are as follows:

<u>Pin # at "JCRC-A"</u>	<u>Description</u>
#2	Battery NEGATIVE
#11	Command for unlatching the sliding doors
#14	Command for opening right-side doors
#15	Command for opening left-side doors
#16	Command for closing right-side doors
#17	Command for closing left-side doors
#18	Signal for indication of doors closed
#19	Signal for indication of handbrakes released
#21	Command for door override
#22	Command for communication buzzer
#23	Signal for indication of doors closed
#27	Command for ZSR

TP-015

TEST REPORT for TRAINLINE TEST (One Car) (1/1)

CAR No. \_\_\_\_\_

DATE: \_\_\_\_\_

MD-DOT: \_\_\_\_\_

NS: \_\_\_\_\_

GE: \_\_\_\_\_

No	Description	Criteria	Result	Remarks
1	Loco. control	Confirmation	PASS/FAIL	
2	Door/Communication control	Confirmation	PASS/FAIL	

# Detailed Test Plan

TP-015'-1/1

Date: Jan. 23, 1986

<b>Test &amp; Inspection</b>	Electrical Test -- Trainline Test ( 3 cars or 6cars)		
<b>Specification</b>	2.1.9.(c).6	<b>Frequency</b>	All Cars
<b>Test location</b>	MD-DOT Property	<b>Train consist</b>	3 or 6 Cars

1. Purpose of Test  
 To confirm the function of cars as A TRAIN, by observing that trainlined equipments are controlled properly by trainline signal.
  
2. Test Prerequisites
  - 2.1 Cars are to be coupled into one train.
  - 2.2 All switches, breakers and equipments installed on the cars shall be in normal operating condition.
  - 2.3 480 volts power shall be supplied to the train.
  
3. Equipment Required  
 Standard coach key
  
4. Test Procedure
  - 4.1 Operate trainlined apparatus to generate trainline signal.
  - 4.2 Confirm that each trainlined equipment on the train is controlled properly.
  - 4.3 All trainlined equipment shall be checked.
  - 4.4 Trainline description is indicated on TP-015.
  
5. Criteria  
 Confirmation.

**Remarks**

TEST REPORT for TRAINLINE TEST (        cars) TP-015' (1/1)

(at IVY CITY COACH YARD, WASHINGTON)

Car No. \_\_\_\_\_ Date: \_\_\_\_\_

MD-DOT: \_\_\_\_\_ NS: \_\_\_\_\_

No.	Description	Criteria	Result	Remarks
1.	Loco. control	Confirmation	PASS/FAIL	
2.	Door/Communica- tion	"	PASS/FAIL	

## Detailed Test Plan

TP-016-1/19

Date: May 27, 1985

Test & Inspection	Air Brake Functional Test		
Specification	2.1.9(d)	Frequency	AllCars
Test location	GE Plant	Train consist	One Car

**1. Purpose of Test**

Air brakes on each car shall be tested and adjusted.

**2. Test Items**

- |   |            |
|---|------------|
| 1) Air Leakage Test                       | C & T cars |
| 2) Single Car Test Device Test            | C & T cars |
| 3) Variable Load Valve Test               | C & T cars |
| 4) Decelostat Test                        | C & T Cars |
| 5) 26-C Brake Valve Functional Test       | C car      |
| 6) Safty Control Penalty Application Test | C car      |
| 7) Pressure Switch Test                   | C & T cars |

**Remarks** Rev. July 27, 1985  
 Rev. January 10, 1986

Test & Inspection	Air Brake functional Test
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3.1.0 Air Leakage Test - "C" & "T" cars

## 3.1.1 Test Prerequisite

- 1) Test air source for main reservoir must be adjusted to 130-140 psi.
- 2) Test air for brake pipe must be adjusted to 110 psi.
- 3) Car wheels must be chocked to prevent car movement.

## 3.1.2 Equipment Required

- 1) Shop air - 140 psi
- 2) Test gage - 200 psi
- 3) Single Car Test Device (SCTD)
- 4) Main reservoir air supply hose with test gage fitting.
- 5) Exhaust Gage Fitting - J-18-B Relay Valve

## 3.1.3 Test Procedure of M.R., B.P. and B.C. leakage.

- 1) Initial condition - "Release"
  - (1) 26-C B.V. handle - "Handle off" position.
  - (2) 26-C B.V. cut-off valve - "Out" position.
  - (3) Connect the SCTD to the B.P. hose at one end of the car, and supply 110 psi test air. - handle position "1"
  - (4) Connect the M.R. supply hose to the M.R. hose at one end of the car, and supply 130-140 psi test air.
  - (5) Cocks - normal operating position.
  - (6) No air leakage sound.
  
- 2) Main reservoir leakage - "C" & "T" cars
  - (1) Move the SCTD handle to position "3".
  - (2) Adjust the main reservoir pressure to 130-140 psi.
  - (3) Close the main reservoir test air supply cock.
  - (4) Observe the M.R. pressure on the M.R. test air supply hose gage.
  - (5) Check all M.R. piping for leakage with soap water.
  
- 3) Brake pipe leakage - "C" & "T" cars
  - (1) Move the SCTD handle to position "3".
  - (2) Observe the B.P. pressure on the SCTD gage.
  - (3) Check all B.P. piping for leakage with soap water.

## Test &amp; Inspection

## Air Brake Functional Test

- 4) Brake cylinder leakage - "C" & "T" cars
  - (1) Move the SCTD handle to position "1".
  - (2) Verify that the B.C. pressure decrease to 0 psi.
  - (3) insert an exhaust gage fitting into the exhaust of the J-18-B relay valve.
  - (4) Move SCTD handle to position "4" until approximately 35 psi is obtained on the B.C. gage, then return the SCTD handle to position "3".
  - (5) Observe the B.C. pressure on the J-18-B relay valve.
  - (6) Check all B.C. piping for leakage with soap water.
  - (7) Exhaust B.C. air from exhaust gage fitting.
  - (8) Remove the Exhaust Gage Fitting from the J-18-B relay valve.

## 3.1.4 Test Procedure of E.R. leakage - "C" car

- 1) Initial condition - "Release"
  - (1) 26-C B.V. handle - "Release" position.
  - (2) 26-C B.V. cut-off valve - "In" position.
  - (3) Connect the M.R. supply hose to the M.R. hose at one end of the car, and supply 130-140 psi test air.
  - (4) Cut out cocks at foot valve and FA-4 valve - close
  - (5) Other cocks - normal operating position.
- 2) Test procedure
  - (1) Verify E.R. gage indicate 110 psi.
  - (2) Check all equalizing reservoir piping, E.R.gage and gage conections for leakage, use soap water.

## 3.1.5 Criteria

- 1) Main reservoir leakage  
Not exceed 3 psi per 5 minutes.
- 2) Brake pipe leakage  
Not exceed 1 psi per 1 minute.
- 3) Brake cylinder leakage  
Not exceed 3 psi per 1 minute.
- 4) Equalizing reservoir leakage  
No leakage.

## Test &amp; Inspection

## Air Brake Functional Test

3.2.0 Single Car Test Device Test - "C" & "T" cars

## 3.2.1 Test Prerequisite

- 1) Test air for brake pipe must be adjusted to 110 psi.
- 2) Car wheels must be chocked to prevent car movement.
- 3) Test air for M.R. must be adjusted to 130 - 140 psi.
- 4) Check the Air Spring height - 10"

## 3.2.2 Equipment required

- 1) Shop air - 140 psi
- 2) Single Car Test Device (SCTD)
- 3) Test Gage
- 4) Main reservoir air supply hose

## 3.2.3 Test Procedure

- 1) Initial conditions
  - (1) 26-C B.V. handle - "Handle off" position.
  - (2) 26-C B.V. cut-off valve - "Out" position.
  - (3) Train line cocks at each end of the car - closed.
  - (4) Other cocks - normal operating position.
  - (5) Connect the SCTD to the B.P. hose at one end of the car, and supply 110psi test air - handle position "1".
- 2) Full service application
  - (1) Move the SCTD operating handle to Position 5. when the SCTD brake pipe air gage has decreased to 85 psi, move the SCTD operating handle to Position 3 (Lap).
  - (2) Verify that the disc brake unit pistons have extended and the brake pads are in contact with the discs, that the tread brake unit pistons have extended and the brake shoes are in contact with the wheels, and that the brake status indicators have extended.
  - (3) Verify that the brake cylinder "Test" gage indications must cease to increase at 31-37 psi.
  - (4) Pull Reservoir Release Valve Operating Handle. Hold Operating Handle in the release position for approximately 10 seconds. Verify that the B.C. gage indications decrease to 0 psi.

## Test &amp; Inspection

## Air Brake Functional Test

## 3) Release of Full Service

- (1) Move the SCTD operating handle to Position 1.
- (2) Verify that the brake cylinder "Test" gage indications must decrease to 0 psi.
- (3) Verify that the disc brake unit pistons have retracted and the brake pads are not in contact with the discs, that the tread brake unit pistons have fully retracted and the brake shoe clear the wheels by 1/2 to 3/4 in., and that the brake status indicators have retracted.

## 4) Graduated Release test

- (1) Move the SCTD handle to Position 1 until brake pipe pressure has increased 5 to 6 psi, then return handle to Position 3 (Lap).
- (2) Repeat the operation several times.
- (3) At least three graduations must be obtained.

## 5) Emergency Test

- (1) Move the SCTD handle to Position 1 to fully recharge the brake pipe .
- (2) With the equipment fully charged, move the SCTD handle to Position 3 (Lap), then open the SCTD 3/8" cock.
- (3) Verify that the brake cylinder "Test" gage indications must increase to 35 -43 psi.

## 6) Release Test After Emergency

- (1) after the completion of the Emergency Test, wait approximately 30 seconds.
- (2) Close SCTD 3/8" cock, and move the SCTD handle to Position 1.
- (3) Verify that the brake cylinder "Test" gage indications must decrease to 0 psi.

## Test &amp; Inspection

## Air Brake Functional Test

## 7) B-3-B Emergency Brake Valve Test

(1) With the equipment completely charged, and SCTD handle in position 1, open the B-3-B E.B.V., observing carefully that there are no obstructions to the free and full movement of the handle, and that there is no binding of parts.

The opening of the emergency brake valve must produce an emergency application.

(2) Repeat the above operation for each B-3-B E.B.V..

## 3.2.4 Criteria

- 1) Full Service Application  
confirmation
- 2) Release of Full Service  
confirmation
- 3) Graduated Release Test  
confirmation
- 4) Emergency Test  
confirmation
- 5) Release Test after Emergency  
confirmation
- 6) B-3-B Emergency Brake Valve Test  
confirmation

## Test &amp; Inspection

## Air Brake Functional Test

3.3.0 Variable Load Valve Test - "C" & "T" cars

## 3.3.1 Test prerequisite

- 1) Test air for main reservoir must be adjusted to 130-140 psi.
- 2) Test air for brake pipe must be adjusted to 110 psi.
- 3) Test air of variable Load Valve must be adjusted from 0 psi to 65 psi.
- 4) Car wheel must be chocked to prevent car move.

## 3.3.2 Equipment Required

- 1) Shop air - 140 psi
- 2) Single Car Test Device Test (SCTD)
- 3) Test Gage
- 4) Variable Load Valve test air supply device (VLVTD)
- 5) Main reservoir air supply hose

## 3.3.3 Test Procedure

- 1) Initial condition
  - (1) 26-C B.V. handle - "Handle off" position.
  - (2) 26-C B.V. cut-off valve - "Out" position.
  - (3) Train line cocks at each end of the car - closed.
  - (4) Air spring cut-out cock - closed.
  - (5) Other cocks - normal operating position.
  - (6) Connect the VLVTD on the Air Spring piping.
  - (7) Connect the SCTD to the B.P. hose - Handle position "1".
  - (8) Connect the M.R. supply hose to the M.R. hose, and supply 130-140 psi test air.
- 2) Zero Pressure Test
  - (1) Adjust air spring pressure to 0 psi.
  - (2) Make full service application.
  - (3) Check the brake cylinder pressure.
  - (4) Release the brake.
  - (5) Make emergency application.
  - (6) Check the brake cylinder pressure.

## Test &amp; Inspection

## Air Brake Functional Test

## 3) Empty Test

- (1) Adjust air spring pressure to 37 psi
- (2) Make full service application.
- (3) Check the brake cylinder pressure.
- (4) Release the brake.
- (5) Make emergency application.
- (6) Check the brake cylinder pressure.

## 4) Loaded Test

- (1) Adjust air spring pressure to 59 psi
- (2) Make full service application.
- (3) Check the brake cylinder pressure.
- (4) Release the brake.
- (5) Make emergency application.
- (6) Check the brake cylinder pressure.

## 5) Normal Condition Test

- (1) Remove the VLVTD.
- (2) Connect air spring pipe.
- (3) Open the air spring cut-out cock.
- (4) check the air spring pressure.
- (5) Make full service application.
- (6) Check the brake cylinder pressure.
- (7) Release the brake.
- (8) Make emergency application.
- (9) Check the brake cylinder pressure.

Test & Inspection

Air Brake Functional Test

3.3.4 Criteria

TEST ITEMS	AIR SPRING PRESSURE	B.C. PRESSURE	
		FULL SERVICE	EMERGENCY
ZERO PRESSURE	0 psi	31 - 37 psi	36 - 43 psi
EMPTY	37 psi	35 - 37 psi	41 - 43 psi
LOADED	59 psi	44 - 50 psi	51 - 57 psi
NORMAL	confirmation	confirmation	confirmation

## Test &amp; Inspection

## Air Brake Functional Test

3.4.0 Decelostat Test - "C" & "T" cars

## 3.4.1 Test Prerequisite

- 1) Test air for main reservoir must be adjusted to 130-140 psi.
- 2) Test air for brake pipe must be adjusted to 110 psi.
- 3) Car wheel must be chocked to prevent car movement.
- 4) 74 v D.C.

## 3.4.2 Equipment Required

- 1) Shop air - 140 psi
- 2) Single Car Test Device (SCTD)
- 3) Test Gage

## 3.4.3 Test Procedure

## 1) Initial condition

- (1) 26-C B.V. handle - "Handle off" position.
- (2) 26-C B.V. cut-off valve - "Out" position.
- (3) Train line cocks at each end of the car - closed.
- (4) Other cocks - normal operating position.
- (5) 140 psi M.R. test air - supply.
- (6) 110 psi B.P. test air - supply.
- (7) 74 v D.C. power supply to E-5 decelostat controller.

## 2) Application Test

- (1) Make full service application.
- (2) Operate the E-5 decelostat controller push button test switch.
- (3) Verify that the brake cylinder gage decreases to 0 psi.

## 3) Nullification Test

- (1) Make full service application.
- (2) Operate the E-5 decelostat controller push button test switch, and verify that the brake cylinder gage decrease to 0 psi.

## Test &amp; Inspection

## Air Brake Functional Test

- (3) Move the SCTD handle to Position 6 (Emergency).
- (4) Verify that the brake cylinder increase to 39-46 psi.

## 3.4.4 Criteria

- 1) Application test  
confirmation
- 2) Nullification Test  
confirmation

## Test &amp; Inspection

## Air Brake Functional Test

3.5.0 26-C Brake Valve Functional Test - "C" car

## 3.5.1 Test Prerequisite

- 1) Test air for main reservoir must be adjusted to 130-140 psi.
- 2) Car wheel must be chocked to prevent car movement.

## 3.5.2 Equipment Required

- 1) Shop air
- 2) Test Gage
- 3) Stop watch

## 3.5.3 Test Procedure

## 1) Initial condition

- (1) 26-C B.V. handle - "Release" position.
- (2) 26-C B.V. cut-off valve - "In" position.
- (3) Train line cocks at each end of the car - closed.
- (4) Cut-out cocks at foot valve and FA-4 valve - closed.
- (5) Other cocks - normal operating position.
- (6) Connect the M.R. supply hose to M.R. hose at one end of the car, and supply 130-140 psi test air.

## 2) Automatic full Service Application

- (1) Verify brake pipe gage indicates 110 psi.
- (2) Verify equalizing reservoir gage indicates 111-112 psi.
- (3) Move the 26-C B.V. handle into the "Full Service" position.
- (4) Verify that the brake pipe gage and the equalizing reservoir gage must decrease from 110 psi to 90 psi in 3.0 to 5.5 seconds.
- (5) verify that the brake cylinder gage must increase from zero to 30 psi in 2.0 to 5.0 seconds.
- (6) verify that the brake pipe pressure must be within 1 psi of the final equalizing reservoir pressure.
- (7) Verify brake cylinder gage indicate 31-37 psi.

## Test &amp; Inspection

## Air Brake Functional Test

## 3) Release of Full Service

- (1) Move the B.V. handle into the "Release" position.
- (2) Verify that the brake cylinder gage must decrease from maximum pressure to 10 psi in 3 to 5 seconds, and must continue to decrease to zero psi.
- (3) Verify B.P. gage indication increase to 110 psi.

## 4) Graduated application and Graduated Release

- (1) Move the B.V. handle into the "Service" zone and allow the brake pipe gage and the equalizing reservoir gage to decrease to 100 psi.
- (2) Verify the brake cylinder gage readings must increase to approximately 16 to 20 psi.
- (3) Move the B.V. handle further into the "Service" zone and allow the brake pipe gage to decrease by 3 psi.
- (4) Verify that the brake cylinder gage must increase by approximately 7 psi.
- (5) Repeat step (3) until the brake pipe gage has been reduced to 87-84 psi.
- (6) Verify that the brake cylinder gage must increase to between 31 psi and 37 psi.
- (7) Move the B.V. handle toward the "Release" position and allow the brake pipe gage and the equalizing reservoir gage to increase to 90 psi.
- (8) Move the B.V. handle further toward the "Release" position and allow the brake pipe gage and the equalizing reservoir gage to increase by 2 psi.
- (9) Verify that the B.C. gage readings must decrease 6 to 10 psi.
- (10) Repeat step (8) until B.C. gage indication decrease to 0 psi.
- (11) At least three graduations must be obtained.

## Test &amp; Inspection

## Air Brake Functional Test

## 5) Emergency

- (1) Rapidly move the B.V. handle into the "Emergency" position.
- (2) Verify that the brake pipe gage indication decrease to 0 psi in less than 1 second.
- (3) Verify that the B.C. gage indication increases to 36 to 43 psi.
- (4) B.V. handle must remain in "Emergency" position for approximately 60 seconds.
- (5) Move B.V. handle to "Handle-off" position for approximately 15 seconds.
- (6) Move B.V. handle to "Release" position.
- (7) Verify brake pipe gage indication increase to 110 psi.
- (8) Verify B.C gage indication decrease to 0 psi.
- (9) Allow two minutes for equipment charging.
- (10) Rapidly move B.V. handle to "Emergency" position.
- (11) Verify B.C. gage indication increase to 35 psi in 4 seconds maximum.
- (12) Verify B.C. gage indication increase to 36-43 psi.
- (13) Move B.V. handle to "Release" position after approximately 20 seconds.
- (14) Verify B.P. gage indication remains at 0 psi.
- (15) Verify B.C. gage indication remains at 36-43 psi.
- (16) Move B.V. handle to "Emergency" position for approximately 40 seconds.
- (17) move B.V. handle to "Handle off" position for approximately 15 seconds.
- (18) Move B.V. handle to "Release" position.
- (19) Verify B.P. gage indication increase to 110 psi.
- (20) Verify B.C. gage indication decrease to 10 psi in 4-6 seconds and continues to 0 psi.

## 6) handle-off position

- (1) B.V. handle to "Handle-off" position.
- (2) Verify NO emergency application occurs.  
(Verify NO sanding application occurs.)

Test & Inspection	Air Brake Functional Test
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**3.5.4 Criteria**

- 1) Automatic Full Service Application  
confirmation
- 2) Release of Full Service  
confirmation
- 3) Graduated Application and Graduated Release  
confirmation
- 4) Emergency  
confirmation
- 5) Handle-off Position  
confirmation

## Test &amp; Inspection

## Air Brake Functional Test

3.6.0 Safety Control Penalty Application Test - "C" - car

## 3.6.1 Test Prerequisite

- 1) Test air for main reservoir must be adjusted to 130-140 psi.
- 2) Car wheel must be chocked to prevent car movement.

## 3.6.2 Equipment Required

- 1) Shop -air - 140 psi
- 2) Stop watch
- 3) Monitoring probe with test gage

## 3.6.3 Test procedure

## 1) Initial condition

- (1) 26-C B.V. handle - "Release" position.
- (2) 26-C B.V. cut-off valve - "In" position.
- (3) Foot valve cut-out cock - open.
- (4) FA-4 valve (ATC) - close.
- (5) Train line cocks at each end of the car - close.
- (6) Other cocks - normal operating position.
- (7) 140 psi M.R. air - supply.
- (8) D-1 Foot valve pedal - depressed.

## 2) Application test

- (1) Release D-1 foot valve pedal.
- (2) Verify that the equalizing reservoir gage indication begins to decrease in 4-6 seconds (stop watch time release of D-1 foot valve pedal to initial decrease of equalizing reservoir gage indication).
- (3) Verify that the Safety control warning whistle sounds immediately after the release of the D-1 foot valve pedal.
- (4) Verify an approximate 35 psi B.P. reduction as indicated by the B.P. gage.
- (5) Verify that the B.C. gage indication increase to 31 to 37 psi.

## Test &amp; Inspection

## Air Brake Functional Test

- (6) Depress D-1 foot valve pedal.
- (7) Move B.V. handle to "Suppression" position.
- (8) Verify: E.R. gage indicates approximately 75 psi.  
: B.P. gage indicates approximately 75 psi.  
: B.C. gage indicates approximately 31-37 psi.
- (9) Move 26-C B.V. handle to "Release".
- (10) Verify: E.R. and B.P. gage indications increase to approximately 110 psi.  
: B.C. gage indication decrease to 0 psi.

## 3) Suppression Test

- (1) Install a monitoring probe with "Test" gage into the test fitting in the pipe to SUPPRESSION pressure switch.
- (2) Verify that SUPPRESSION pressure switch "Test" gage indicate 0 psi.
- (3) Move B.V. handle into the "Service" zone to produce a 16 psi B.P. reduction (94 psi B.P. gage indication).
- (4) Verify that SUPPRESSION pressure switch "Test" gage indicate 0 psi.
- (5) Move B.V. handle into the "Full Service" position.
- (6) Verify: SUPPRESSION pressure switch "Test" gage indicates M.R. pressure.  
: B.P. gage indication decreases to 87-84 psi.
- (7) Release D-1 foot valve pedal.
- (8) Verify B.P. gage indication remains at 87-84 psi.

## 3.6.4 Criteria

- 1) Application Test  
confirmation
- 2) Suppression Test  
confirmation

Test & Inspection	Air Brake Functional Test
-------------------	---------------------------

3.7.0 Pressure Switch Test - "C" & "T" cars

3.7.1 Test Prerequisite

- 1) Test air for main reservoir must be adjusted to 130-140 psi.
- 2) Car wheel must be chocked to prevent car movement.

3.7.2 Equipment Required

- 1) Shop air
- 2) Monitoring probe with test gage
- 3) Tester

3.7.3 Test Procedure

1) Pressure check - Switch settings

Verify the adjustment of following pressure switches.

- |           |               |                |
|-----------|---------------|----------------|
| (1) BSPS  | M.R. pressure | "C" car        |
| (2) SPS   | M.R. pressure | "C" car        |
| (3) PCS   | M.R. pressure | "C" car        |
| (4) SUPS  | M.R. pressure | "C" car        |
| (5) BCPS  | B.C. pressure | "C" car        |
| (6) WSPS1 | B.C. pressure | "C" & "T" cars |
| (7) WSPS2 | B.P. pressure | "C" & "T" cars |

2) Performance check - Only "C" car

Verify the application of pressure switches with each brake conditions (Refer to attached sheet).

3.7.4 Criteria

1) Pressure check - Switch settings

- |           |                  |                   |
|-----------|------------------|-------------------|
| (1) BSPS  | Close 25±2       |                   |
| (2) SPS   | Close 25±2       |                   |
| (3) PCS   | Open 25±2        |                   |
| (4) SUPS  | Close 60±2       | Open 46±2         |
| (5) BCPS  | Close 30±2       | Open 20±2         |
| (6) WSPS1 | Open more than 9 | Close less than 6 |
| (7) WSPS2 | Close 62         | Open 54           |

At increase	At decrease
-------------	-------------

2) Performance check

confirmation

Test & Inspection	Air Brake Functional Test				
PRESSURE SWITCH NAME	BSPS	SPS	PCS	SUPS	BCPS
	Brake Suppressed	Sanding	PKO	ATC Suppression	Brake Applied
PRESSURE	M.R.	M.R.	M.R.	M.R.	B.C.
AT ZERO PRESSURE BRAKE CONDITION	OPEN	OPEN	CLOSE	OPEN	OPEN
Release Position	OPEN	OPEN	CLOSE	OPEN	OPEN
Service Position (B.P. 94 psi)	OPEN	OPEN	CLOSE	OPEN	
Service Position (Full Service)	CLOSE	OPEN	CLOSE	OPEN	
Suppression Position (Reset Penalty Brake)	OPEN	OPEN	CLOSE	CLOSE	
Handle-off Position	CLOSE	OPEN	CLOSE	CLOSE	
Emergency Position	CLOSE	CLOSE	OPEN	CLOSE	
Emergency Position (After A-1 Charging Valve Exhausts)	CLOSE	OPEN	OPEN	CLOSE	
Penalty Brake (B.V. Release Position)	OPEN	OPEN	OPEN	OPEN	CLOSE
Brake-in-two Emergency (B.V. Release position)	OPEN	CLOSE	OPEN	OPEN	
Brake-in-two Emergency (After A-1 Charging Valve Exhausts)	OPEN	CLOSE	OPEN	OPEN	

Test Report for Air Brake Functional Test (Cab Car)-(1/4)

CAR No. \_\_\_\_\_

DATE: \_\_\_\_\_

MD-DOT: \_\_\_\_\_

NS: \_\_\_\_\_

GE: \_\_\_\_\_

No	Description	Criteria	Result	Remarks
1	<u>Air Leakage Test</u>			
	1) Main Reservoir Leakage.	Not exceed 3 psi per 5 minutes.	_____ psi	
	2) Brake Pipe Leakage	Not exceed 1 psi per 1 minute.	_____ psi	
	3) Brake Cylinder Leakage	Not exceed 3 psi per 1 minute.	_____ psi	
	4) Equalizing Reservoir Leakage	Not leakage	_____	
2	<u>Single Car Test Device Test</u>			
	1) Full Service Application	Confirmation	_____	
	2) Release of Full Service	Confirmation	_____	
	3) Graduated Release Test	Confirmation	_____	
	4) Emergency Test	Confirmation	_____	
	5) Release Test after Emergency	Confirmation	_____	
	6) B-3-B Emergency Brake Valve Test	Confirmation	_____	
3	<u>Variable Load Valve Test</u>			
	1) Zero Pressure			
	Air Spring Pressure	0 psi	AS _____ psi	
	Full Service Brake	BC 31 -- 37 psi	BC _____ psi	
	Emergency Brake	BC 36 - 43 psi	BC _____ psi	

No.	Description	Criteria	Result	Remarks
	2) Empty Pressure Air Spring Pressure Full Service Brake Emergency Brake	37 psi BC 35 - 37 psi BC 41 - 43 psi	AS _____ psi BC _____ psi BC _____ psi	
	3) Loaded Pressure Air Spring Pressure Full Service Brake Emergency Brake	59 psi BC 44 - 50 psi BC 51 - 57 psi	AS _____ psi BC _____ psi BC _____ psi	
	4) Normal Pressure Air Spring Pressure Full Service Brake Emergency Brake	Confirmation Confirmation Confirmation	AS _____ psi BC _____ psi BC _____ psi	
4	<u>Decelostat Test</u> 1) Application Test 2) Nullification Test	Confirmation Confirmation	_____ _____	
5	<u>26-C Brake Valve Functional Test</u> 1) Automatic Full Service Application 2) Release of Full Service 3) Graduated Application and Graduated Release 4) Emergency 5) Handle-off Position	Confirmation Confirmation Confirmation Confirmation Confirmation	_____ _____ _____ _____ _____	

CAR No. \_\_\_\_\_ Test Report for Air Brake Functional Test (Cab Car)-(3/4)

No	Description	Criteria	Result	Remarks	
6	<u>Safety Control Penalty Application Test</u>				
	1) Application Test	Confirmation	_____		
	2) Suppression Test	Confirmation	_____		
7	<u>Pressure Switch Test</u>				
	1) Pressure Check				
	BSPS	M.R. Pressure	Close 25 ± 2	_____ psi	At increase
	SPS	M.R. Pressure	Close 25 ± 2	_____ psi	At increase
	PCS	M.R. Pressure	Open 25 ± 2	_____ psi	At increase
	SUPS	M.R. Pressure	Close 60 ± 2	_____ psi	At increase
			Open 46 ± 2	_____ psi	At decrease
	BCPS	B.C. Pressure	Close 30 ± 2	_____ psi	At increase
			Open 20 ± 2	_____ psi	At decrease
	WSPS1	B.C. Pressure	Open more than 9	_____	At increase
			Close less than 6	_____	At decrease
	WSPS2	B.P. Pressure	Close 62	_____ psi	At increase
			Open 54	_____ psi	At decrease
	2) Performance Check				
		Release Position	Confirmation	_____	
		Service Position(B.P. 94 psi)	Confirmation	_____	
		Service Position(Full Service)	Confirmation	_____	
	Suppression Position(Reset Penalty Brake)	Confirmation	_____		
	Handle-off Position	Confirmation	_____		
	Emergency Position	Confirmation	_____		

CAR No. \_\_\_\_\_ Test Report for Air Brake Functional Test (Cab Car)- (4/4)

No.	Description	Criteria	Result	Remarks
	Emergency Position(After A-1 charging valve exhausts)	Confirmation	<hr/>	
	Penalty Brake(Brake valve "Release" position)	Confirmation	<hr/>	
	Brake-in-two Emergency (Brake valve "Release" position)	Confirmation	<hr/>	
	Brake- in two Emergency (After A-1 charging valve exhausts)	Confirmation	<hr/>	

TP-016

Test Report for Air Brake Functional Test (Trailer Car) - (1/2)

CAR No. \_\_\_\_\_

DATE: \_\_\_\_\_

MD-DOT: \_\_\_\_\_

NS: \_\_\_\_\_

GE: \_\_\_\_\_

No	Description	Criteria	Result	Remarks
1	<u>Air Leakage Test</u> 1) Main Reservoier Leakage 2) Brake Pipe Leakage 3) Brake Cylinder Leakage	Not exceed 3 psi per 5 minutes. Not exceed 1 psi per 1 minute. Not exceed 3 psi per 1 minute.	_____ psi _____ psi _____ psi	
2	<u>Single Car Test Device Test</u> 1) Full Service Application 2) Release of Full Service 3) Graduated Release Test 4) Emergency Test 5) Release Test after Emergency 6) B-3-B Emergency Brake Valve Test	Confirmation Confirmation Confirmation Confirmation Confirmation Confirmation	_____ _____ _____ _____ _____ _____	
3	<u>Variable Load Valve Test</u> 1) Zero Pressure Air Spring Pressure Full Service Brake Emergency Brake	0 psi BC 31 - 37 psi BC 36 - 43 psi	AS _____ psi BC _____ psi BC _____ psi	

No	Description	Criteria	Result	Remarks
	2) Empty Pressure			
	Air Spring Pressure	37 psi	AS _____ psi	
	Full Service Brake	BC 35 - 37 psi	BC _____ psi	
	Emergency Brake	BC 41 - 43 psi	BC _____ psi	
	3) Loaded Pressure			
	Air Spring Pressure	59 psi	AS _____ psi	
	Full Service Brake	BC 44 - 50 psi	BC _____ psi	
	Emergency Brake	BC 51 - 57 psi	BC _____ psi	
	4) Normal Pressure			
	Air Spring Pressure	Confirmation	AS _____ psi	
	Full Service Brake	Confirmation	BC _____ psi	
	Emergency Brake	Confirmation	BC _____ psi	
4	<u>Decelostat Test</u>			
	1) Application Test	Confirmation	_____	
	2) Nullification Test	Confirmation	_____	
5	<u>26-C Brake Valve Functional Test</u>			Only Cab Car
6	<u>Safety Control Penalty Application Test</u>			Only Cab Car
7	<u>Pressure Switch Test</u>			
	WSPS1 B.C. Pressure	Open more than 9	_____	At increase
		Close less than 6	_____	At decrease
	WSPS2 B.P. Pressure	Close 62	_____ psi	At increase
		Open 54	_____ psi	At decrease

## Detailed Test Plan

TP-017-1/3

Date: May 14, '85

<b>Test &amp; Inspection</b>	Hand Brake Test		
<b>Specification</b>	2.1.9(m)2	<b>Frequency</b>	First Cab Car
<b>Test location</b>	GE Plant	<b>Train consist</b>	One Car

1. Purpose of Test

1.1 First Cab Car

To verify the capability of holding the loaded car on a 5% grade

1.2 Other Cars

To check the operation.

2. Test prerequisite

2.1 First Cab Car

1) Load 30,000 lbs..

2) Brake shoe:

New shoes

3) Hand-lever force:

125 lbs. applied 3" from the end of the hand-lever.

2.2 Other cars

1) Empty car.

2) Only new shoe.

3. Equipment Required

3.1 First Cab Car

1) Load cell for 10 tons - KYOWA LU-10TE

2) Strain amplifier - KYOWA DPM-110

3) Recorder - KYOWA RMS11

4) Shoe force meter - Strain gage and Amplifier

5) Spring balance for 125 lbs.

6) New shoes.

7) Dead weight (30,000 lbs.)

3.2 Other Cars

None

**Remarks** Rev. July 27, 1985  
Rev. Jan. 23, 1986

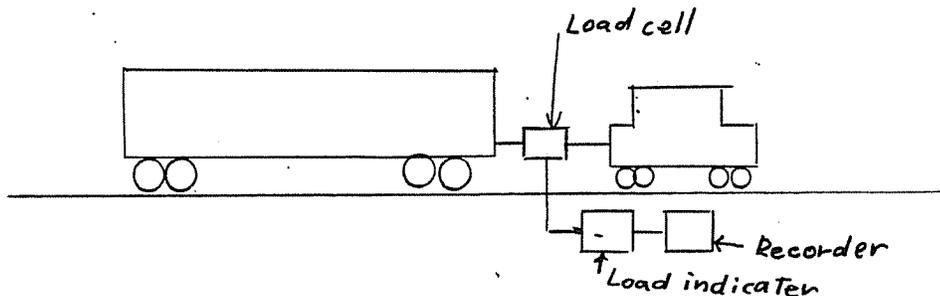
Test & Inspection

Hand Brake Test

4. Test Procedure

4.1 First Cab Car

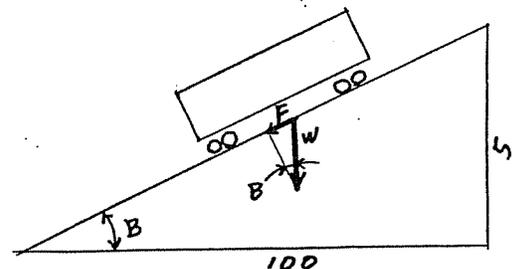
- 1) Load dead weight in the test car, evenly distributed.
- 2) Shoe force check:
  - (1) Install shoe force meter on tread brake unit.
  - (2) Operate hand brake lever to obtain hand force 125 lbs. applied 3" from the end of the hand-lever.
  - (3) Check shoe force.
- 3) Holding force check on new shoes:
  - (1) Set load cell and load indicator with recorder.



- (2) Pull loaded car with locomotive (operated slowly).
- (3) Check load indicator and recorder.
- (4) Confirm load point at which car first moves.
- (5) Check that car moving force value is more than calculated holding force.

Calculated holding force

$$F = W \times \tan B$$



Note:

- F : Holding force 7,050 lbs.
- W : Crush loaded car weight 141,000 lbs.
- tan B : 5/100

## Test &amp; Inspection

## Hand Brake Test

## 4.2 Other Cars

- 1) Operate the hand brake.
- 2) Check the movement and function.

## 5. Criteria

## 5.1 First Cab Car

Moving force value is more than calculated holding force.

## 5.2 Other Cars

Only confirmation.

TEST REPORT for Hand Brake Test

TP-017  
(1/1)

CAR No. \_\_\_\_\_

DATE: \_\_\_\_\_

MD-DOT: \_\_\_\_\_

NS: \_\_\_\_\_

GE: \_\_\_\_\_

No	Description	Criteria	Result	Remarks
1	Movement and Function Check	Confirmation	_____	
2	Moving Force Check	More than 7,050 lbs.	_____ lbs	Only First Cab Car
3	Shoe Force Check	Confirmation	_____ lbs	Only First Cab Car
4	Stroke check without brake shoe.	Confirmation	PASS/FAIL	

# Detailed Test Plan

TP-018-1/2

Date: Jan. 23, 1986

<b>Test &amp; Inspection</b>	Communication System Test		
<b>Specification</b>	2.1.9. (n)	<b>Frequency</b>	All Cars
<b>Test location</b>	GE Plant/MD-DOT Property	<b>Train consist</b>	One Car
<p>1. Purpose of Test</p> <p>To confirm the function of communication system consisting of :</p> <ul style="list-style-type: none"> <li>(1) Public address communication from conductor control head or operator control head to passenger area.</li> <li>(2) Intercommunication between conductor control heads and operator control head.</li> <li>(3) Train radio communication between wayside and operator control head.</li> </ul> <p>2. Test Prerequisites</p> <p style="padding-left: 40px;">74 volts DC power supplied</p> <p>3. Equipment Required</p> <ul style="list-style-type: none"> <li>Standard coach key</li> <li>Cab make-up key</li> </ul> <p>4. Test Procedure</p> <p>4.1 Public address communication</p> <ul style="list-style-type: none"> <li>A. Insert coach key into key slot on the conductor control head, rotate the key to PA position and depressing the press-to-talk button, speak into microphone to make announcement to passenger area.</li> <li>B. Adjust the output level of speakers by "level control" on PA amplifier, if necessary.</li> <li>C. Operate 2 sets of conductor control head in same manner in case of cab car.</li> <li>D. On cab, set the cab make-up key to ON position to activate operator control head and turning the momentary lever switch on operator control head to PA position, speak into microphone to make announcement to passenger area.</li> </ul>			
<b>Remarks</b>			

## Test &amp; Inspection

## Communication System Test

## 4.2 Intercommunication

- A. On conductor control head, insert coach key into key slot on the control head, rotate the key to IC position, and alternately operate the press-to-talk button and release it to listen to the return IC speech.
- B. On cab, set the cab make-up key to ON position to activate operator control head, and turnig momentary lever switch to IC position, speak into microphone to make intercomm. In this case, the return IC speech will be heard over the conductor control head located to the rear of the activated cab.

## 4.3 Train radio communication (MD-DOT property only)

- A. Set the cab make-up key to ON position to activate operator control head.
- B. Set the channel selector switch.
- C. Alternately depress the press-to-talk button and release it to listen to the return speech.
- D. Check channel indication lamps on control head.

## 5. Criteria

## 5.1 Public address communication

- A. All speakers (10 sets for T car, 11 sets for C car) shall be activated.
- B. No abnormal noise shall exist.
- C. The only speaker at the vestibule where control head activated shall be automatically muted.

## 5.2 Intercommunication

- A. Return IC speech shall be heard from the speaker on conductor control head.
- B. All IC conversation must no be heard over the ceiling speakers.
- C. All IC conversation shall be monitored on the conductor control head located to the rear of the activated cab only.

## 5.3 Train radio communication

- A. Communication shall be performed on each channel.

TEST REPORT for COMMUNICATION SYSTEM TEST (1/1)

CAR No. \_\_\_\_\_

DATE: \_\_\_\_\_

MD-DOT: \_\_\_\_\_

NS: \_\_\_\_\_

GE: \_\_\_\_\_

No	Description	Criteria	Result	Remarks
1	PA			
-1	Speakers sound	Confirmation	PASS/FAIL	
-2	Vestibule speaker	"	PASS/FAIL	
-3	Abnormal noise	"	PASS/FAIL	
2	IC			
-1	Speaker sound in cab	"	PASS /FAIL	
-2	Monitoring	"	PASS/FAIL	
3	Radio			
-1	Transmitting	"	PASS/FAIL	Cab car only
-2	Receiving	"	PASS/FAIL	"

# Detailed Test Plan

TP-018'-1/1

Date: Jan. 23, 1986

<b>Test &amp; Inspection</b>	Train Radio Power Measurement		
<b>Specification</b>	2.1.9.(n)	<b>Frequency</b>	First Cab Car
<b>Test location</b>	MD-DOT Property	<b>Train consist</b>	One Car
<ol style="list-style-type: none"> <li>1. Purpose of Test                  To confirm RF power output and reflected power.</li>   <li>2. Test Prerequisites                  74 volts DC power supplied</li>   <li>3. Equipment Required                  Cab make-up key                  SWR tester</li>   <li>4. Test Procedure               <ol style="list-style-type: none"> <li>A. Set the cab make-up key to ON position to activate operator control head.</li> <li>B. Check channel indication lamps on control head.</li> <li>C. Set SWR tester to radio circuit.</li> <li>D. Measure RF power output and reflected power.</li> <li>E. Check transmitting and receiving condition.</li> </ol> </li>   <li>5. Criteria                  Confirmation.</li> </ol>			
<b>Remarks</b>			

TEST REPORT for TRAIN RADIO TP-018' (1/1)

Car No. 7745

Date; \_\_\_\_\_

MD-DOT; \_\_\_\_\_

NS; \_\_\_\_\_

No.	Description	Criteria	Result	Remarks
1.	RF power output	---	_____ W	
2.	Reflected power	---	_____ W	
3.	Receiving	Confirmation	PASS/FAIL	
4.	Transmitting	"	PASS/FAIL	
5.	Indication lamps	"	PASS/FAIL	

# Detailed Test Plan

TP-019 -1/2

Date: May 14, '85

Test & Inspection	Door Operation Test		
Specification	2.1.9.(o).5	Frequency	All Cars
Test Location	GE Plant	Train Consist	One Car

**1. Purpose of Test**

- 1.1 To adjust opening and closing time of each door.
- 1.2 To adjust the effective range of sensitive edge active.
- 1.3 To confirm opening and closing operation.
- 1.4 To confirm master door controller operation and indication.
- 1.5 To confirm crew key switch function.
- 1.6 To confirm door unlatch solenoid function.

**2. Test Prerequisites**

- 74 volts DC power supplied
- Door properly adjusted

**3. Equipments Required**

- Test plate for adjusting sensitive edge (1/2" x 4" )
- Stop watch

**4. Test Procedure**

First of all, it shall be checked that transfer tubes and extension arm are installed suitably, and shall be adjusted if necessary. Then proceed to 4.1.

- 4.1 Measure opening and closing time of each side door, adjust if necessary.
- 4.2 Operate each master door controller, and confirm each side door function.
- 4.3 Check indication lamp on each master door controller.
- 4.4 Check door signal lights outside the car.
- 4.5 Check sensitive edge function to reopen the closing door on each side door, using test plate for the obstruction.
- 4.6 Check crew switch function on each side door.
- 4.7 Check emergency handle function on each side door.
- 4.8 Check unlatch solenoid function on each sliding door.

**Remarks:**

REV. Aug. 3, '85

Test & Inspection	Door Operation Test				
	<p>4.9 Check audible alarm for door closing.</p> <p>4.10 Check motorman door controller on cab car.</p> <p>4.11 Check door operation by ON BOARD TESTER of ATC.</p> <p>5. Criteria</p> <p>5.1 Door operators and linkage shall be installed securely.</p> <p>5.2 Door operating speed shall be as follows:</p> <table><tr><td>opening</td><td>Not exceed 2.5 seconds</td></tr><tr><td>closing</td><td>3 ± 0.5 seconds</td></tr></table> <p>5.3 Door operating motion shall be smooth.</p> <p>5.4 Transfer tube for sensitive edge shall not be damaged when door moves.</p> <p>5.5 Gap between door edge and door end post shall be suitable, and shall be adjusted by connecting rod of extension arm.</p> <p>5.6 Sensitive edge circuitry shall sense the obstruction larger than 1/2"x4" and door shall be reopened immediately. Adjustment shall be performed if necessary.</p> <p>5.7 Door shall not open at over 3 MPH of simulated car speed, even if door open switch is pushed.</p> <p>5.8 Door shall open at even over 3 MPH of simulated car speed, when door open switch is pushed at the condition of By-pass switch ZSBS "ON".</p>	opening	Not exceed 2.5 seconds	closing	3 ± 0.5 seconds
opening	Not exceed 2.5 seconds				
closing	3 ± 0.5 seconds				

TEST REPORT for DOOR OPERATION TEST (1/1)

CAR No. \_\_\_\_\_

DATE: \_\_\_\_\_

MD-DOT: \_\_\_\_\_

NS: \_\_\_\_\_

GE: \_\_\_\_\_

No	Description	Criteria	Result	Remarks
1	Door operating time Opening Closing	Not exceed 2.5 sec. 3 ± 0.5 sec.	____ sec. ____ sec.	
2	Sensitive edge function	Confirmation	<u>PASS/FAIL</u>	
3	Master door controller operation & indication	"	<u>PASS/FAIL</u>	
4	Outside indication lamp	"	<u>PASS/FAIL</u>	
5	Crew key switch operation	"	<u>PASS/FAIL</u>	
6	Emergency handle operation	"	<u>PASS/FAIL</u>	
7	Audible alarm	"	<u>PASS/FAIL</u>	
8	Motorman door controller	"	<u>PASS/FAIL</u>	Cab car only
9	Zero speed circuit	"	<u>PASS/FAIL</u>	

## Detailed Test Plan

TP-020-1/3  
Date: May 18, 1985

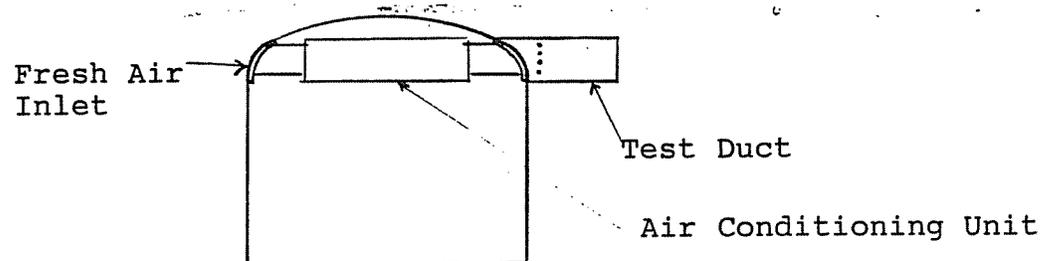
<b>Test &amp; Inspection</b>	Air Conditioning Test (Air Balance & Air Diffuser)		
<b>Specification</b>	2.1.9(g)	<b>Frequency</b>	First C&T car
<b>Test location</b>	GE Plant	<b>Train consist</b>	One car
<p>1. Purpose of Test</p> <p>The air diffusers and fresh air ducts shall be tested and air flow adjusted on the first C&amp;T car, and the rest of the cars will be adjusted based on the findings.</p> <p>2. Test Prerequisite</p> <p>2.1 Air balance test</p> <ol style="list-style-type: none"> <li>1) This test must be performed after Air-conditioning function test.</li> <li>2) Circulating fan measurements shall be taken with the apparatus running at nominal voltage of 480 Volt.</li> </ol> <p>2.2 Diffuser air flow test</p> <ol style="list-style-type: none"> <li>1) This test shall be performed after the air balance test.</li> </ol> <p>3. Equipment Required</p> <p>3.1 Air balance test</p> <ol style="list-style-type: none"> <li>1) Hot wire anemometer - SHINKOKUSAI DENGYO SAV-22A 0-40m/sec.</li> <li>2) Test duct for fresh air and return air. Ref. attached sheet.</li> </ol> <p>3.2 Diffuser air flow test</p> <ol style="list-style-type: none"> <li>1) Hot wire anemometer</li> </ol> <p>4. Test Procedure</p> <p>4.1 Air balance test</p> <ol style="list-style-type: none"> <li>1) Car setting in the building.</li> <li>2) Full open the air flow adjusting plate for fresh air duct.</li> <li>3) Close entrance and windows of test car.</li> <li>4) Turn on air conditioning systems.</li> </ol>			
<p><b>Remarks</b> Rev. July 27, 1985 Jan. 14, 1986</p>			

## Test &amp; Inspection

## Air Conditioning Test (Air Balance &amp; Diffuser)

## 5) Measurement of the fresh air volume.

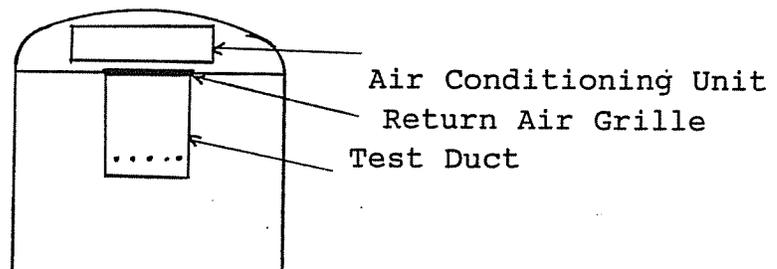
- (1) Install the fresh air test duct on the fresh air intake grille at roof.



- (2) Insert the sensor of hot wire anemometer into the test duct from measuring holes.
- (3) Measure the fresh air velocity at 28 points.
- (4) Calculate the fresh air volume from velocity.
- (5) Repeat steps 1, 2, 3 and 4 for other three fresh air intake ducts.
- (6) Calculate the total fresh air volume.

## 6) Measurement of the return air volume.

- (1) Install the return air test duct on the return air grille at low ceiling area.



- (2) Insert the sensor of hot wire anemometer into the test duct from measuring holes.
  - (3) Measure the return air velocity at 32 points.
  - (4) Calculate the return air volume from velocity.
  - (5) Repeat steps 1, 2, 3 and 4 for opposite end.
  - (6) Calculate the total return air volume.
- 7) Calculate the total volume of fresh air and return air.
  - 8) Adjust air flow by adjusting screw, if necessary.

## Test &amp; Inspection

## Air Conditioning Test (Air Balance &amp; Air Diffuser)

## 4.2 Diffuser air flow test

- 1) Car setting in the building.
- 2) Close entrance and windows of test car.
- 3) Full open the air diffuser.
- 4) Turn on air conditioning systems.
- 5) Measure passenger room air flow at 25" from ceiling.
- 6) Deffusers shall not be full open as a final setting.

## 5. Criteria

## 5.1 Air balance test

The amount of air at each car end shall be at least:

Fresh air system;	600 cfm
Recirculated air system;	1200 cfm
Total;	1800 cfm

## 5.2 Diffuser air flow test

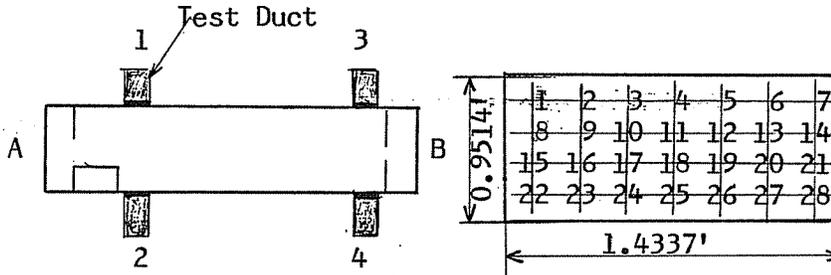
The amount of air motion in the car interior shall be determind by MDOT inspector.

AIR BALANCE TEST

Date:

FRESH AIR VOLUME MEASUREMENT

Checked by:



CAR No. ....

Position	1	2	3	4
1				
2				
3				
4				
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24				
25				
26				
27				
28				
AVERAGE	ft/sec	ft/sec	ft/sec	ft/sec
VOLUME	cfm	cfm	cfm	cfm
TOTAL	cfm			

Instrument Model No.: SAV-22A Hot Wire Anemometer  
 Mfg : SHINKOKUSAI DENGYO CO., LTD.  
 S/N : 21233

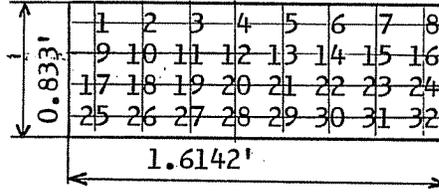
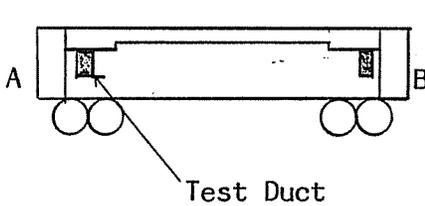
AIR BALANCE TEST

TP-020

Date:

RETURN AIR MEASUREMENT

Checked by:



Cross Section  
1.345 ft<sup>2</sup>

CAR No. ....

Position	A	B
1		
2		
3		
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25		
26		
27		
28		
29		
30		
31		
32		
AVERAGE	ft/sec	ft/sec
VOLUME	cfm	cfm
TOTAL	cfm	

Instrument

Model No.:  
SAV-22A Hot Wire  
Anemometer

Mfg:  
SHINKOKUSAI DENGYO  
CO., LTD.

S/N:  
21233





# Detailed Test Plan

TP- 021-1/1

Date: May 14, '85

<b>Test &amp; Inspection</b>	Air-conditioning Function Test		
<b>Specification</b>	2.1.9.(g).2	<b>Frequency</b>	All Cars
<b>Test location</b>	GE Plant	<b>Train consist</b>	One Car

**1. Purpose of Test**

To confirm that air-conditioning system is exactly operated and refrigerant circulates properly.

**2. Test Prerequisites**

- 2.1 480 volts power supplied.
- 2.2 Refrigerant piping shall be finished.

**3. Equipment Required**

Multimeter HIOKI 3209      1pc

**4. Test Procedure**

- 4.1 Check rotating direction of each evaporator blower.
- 4.2 Check rotating direction of each condenser fan and compressor.
- 4.3 Check that each valve on each evaporator unit is energized as required.
- 4.4 Check circulation of refrigerant.
- 4.5 Confirm cool air flow from each evaporator unit.
- 4.6 Check each indicator lamp of function mode.

**5. Criteria**

- 5.1 Unusual vibration must not exist.
- 5.2 Confirmation of air-conditioning function.

**Remarks**

TP-021

TEST REPORT for AIR-COND. FUNCTION TEST (1/1)

CAR No. \_\_\_\_\_

DATE: \_\_\_\_\_

MD-DOT: \_\_\_\_\_

NS: \_\_\_\_\_

GE: \_\_\_\_\_

No	Description	Criteria	Result	Remarks
1	Rotation of evaporator blower at A end	Confirmation	PASS/FAIL	
2	" at B end	"	PASS/FAIL	
3	" of condenser fan and compressor	"	PASS/FAIL	
4	Circulation of refrigerant	"	PASS/FAIL	
5	Cool air flow	"	PASS/FAIL	
6	Indication lamps	"	PASS/FAIL	
7	No unusual vibration	"	PASS/FAIL	

# Detailed Test Plan

TP-022-1/1

Date: May 14, '85

<b>Test &amp; Inspection</b>	<b>Heating Function Test</b>		
<b>Specification</b>	2.1.9.(h).3	<b>Frequency</b>	All Cars
<b>Test location</b>	GE Plant	<b>Train consist</b>	One Car

**1. Purpose of Test**

To confirm heating functions:

- 1) Overhead heating
- 2) Floor heating
- 3) Cab heating

**2. Test Prerequisites**

- 2.1 480 volts power supplied
- 2.2 Resistance value of each heater circuit shall be confirmed before power is applied

**3. Equipments Required**

Multimeter HIOKI 3209 1pc

**4. Test Procedure**

- 4.1 After confirming proper rotation of evaporator blower, check each overhead heater circuit function.
- 4.2 Check each floor heater function.
- 4.3 Set the layover switch to "LAYOVER" position, and confirm layover heating.
- 4.4 Check the protective function of air flow switch circuit.
- 4.5 Operate cab heater control switch, and check two sets of cab heater activated.
- 4.6 Check the cab door interlock function.
- 4.7 Check the indication of over heat.

**5. Criteria**

- 5.1 Each heater shall be energized as required.
- 5.2 Confirmation of each heater function.

**Remarks**

TEST REPORT for HEATING FUNCTION TEST (1/1)

CAR No. \_\_\_\_\_

DATE: \_\_\_\_\_

MD-DOT: \_\_\_\_\_

NS: \_\_\_\_\_

GE: \_\_\_\_\_

No	Description	Criteria	Result	Remarks
1	Floor heating	Confirmation	PASS/FAIL	
2	Layover heating	"	PASS/FAIL	
3	Cab heating	"	PASS/FAIL	
4	Air flow switch circuit	"	PASS/FAIL	
5	Cab door interlock	"	PASS/FAIL	

## Detailed Test Plan

TP-023-1/1  
Date: May 14, '85

<b>Test &amp; Inspection</b>	Defroster Test (Function)		
<b>Specification</b>	2.1.9.(h).4	<b>Frequency</b>	All Cab Cars
<b>Test location</b>	GE Plant	<b>Train consist</b>	One Car
<p>1. Purpose of Test To confirm the capability of defroster.</p> <p>2 Test Prerequisite 480 volts power supplied. 74 volts DC power supplied</p> <p>3 Equipment Required None</p> <p>4 Test Procedure Turn the circuit breaker "AFPB" and the switch "DFS" ON, to warm 2 sets of Windshields in front of B-end.</p> <p>5 Criteria 5.1 Shall be warmed uniformly to touch by hand. 5.2 No damage shall be observed on windshield.</p>			
<p><b>Remarks</b> REV. Aug. 3, '85</p>			

TP-023

TEST REPORT for DEFROSTER TEST (1/1)

CAR No. \_\_\_\_\_

DATE: \_\_\_\_\_

MD-DOT: \_\_\_\_\_

NS: \_\_\_\_\_

GE: \_\_\_\_\_

No	Description	Criteria	Result	Remarks
1	Heating	Confirmation	PASS/FAIL	

## Detailed Test Plan

TP-024- 1/3

Date: May 18, 1985

<b>Test &amp; Inspection</b>	Water System Test		
<b>Specification</b>	Ref. 2.5.12 & 2.5.13	<b>Frequency</b>	All Cab Cars
<b>Test location</b>	GE Plant	<b>Train consist</b>	One Car

1. Purpose of Test

To check the operation and leakage of water system.

2. Test Prerequisite

- 1) 140 psi main reservoir air supplied.
- 2) The water system shall pass the inspection of sanitaise system.

3. Equipment Required

- 1) Water supply hose
- 2) Stop Watch

4. Test Procedure

4.1 Preparation

- 1) Supply the water tank with water - approximately 50 gallons.
- 2) Supply the toilet and freeze dump valve with main reservoir air.
- 3) Turn the shut-off valve to open position to connect water tank to Wash basin, Toilet hopper and Water cooler.

4.2 Test Items and Procedure

1) Water leakage

Check all water supply piping, water tank toilet and discharge piping for toilet.

2) Wash basin

- (1) Pull the pop up.
- (2) Turn on the faucet and check the water flow.
- (3) Turn off the faucet, basin must maintain the water.
- (4) Check the drain pipe for water leakage.

3) Water cooler

- (1) Push the button on the cup and water dispenser, and check the water flow.

**Remarks** Rev. July 27, 1985  
 Jan. 14, 1986

## Test &amp; Inspection

## Water System Test

## 5) water level:

The water should cover the flapper in the bottom of the bowl.

## 6) water leakage of drainpipe between the bowl and waste tank:

No leakage

## 5.5 Discharge

## 1) Water flow:

Flow of water must be sufficient.

## 2) Water leakage of drain pipe:

No leakage.

TP-024

TEST REPORT for Water system Test (1/1)

CAR No. \_\_\_\_\_

DATE: \_\_\_\_\_

MD-DOT: \_\_\_\_\_

NS: \_\_\_\_\_

GE: \_\_\_\_\_

No.	Description	Criteria	Result	Remarks
1	Water Leakage of pipings	No leakage	PASS/FAIL	
2	wash basin			
	1) Water flow	Confirmation	PASS/FAIL	
	2) Maintain the water	Confirmation	PASS/FAIL	
	3) Water leakage of drain pipe and faucet	No leakage	PASS/FAIL	
3	Water cooler			
	1) Water flow	Confirmation	PASS/FAIL	
	2) Water leakage of drain pipe and push putton	Confirmation	PASS/FAIL	
4	Toilet			
	1) Flush valve	Confirmation	PASS/FAIL	
	2) Water flow	Confirmation	PASS/FAIL	
	3) Flush pattern	Confirmation	PASS/FAIL	
	4) Flush sycle	Appro. 5-7 sec.	sec.	
	5) Water level	Confirmation	PASS/FAIL	
	6) Water leakage of drain pipe	No leakage	PASS/FAIL	
5	Discharge			
	1) Water flow	Confirmation	PASS/FAIL	
	2) Water leakage	No leakage	PASS/FAIL	

# Detailed Test Plan

TP-025-1/2

Date: May 31, 1985

<b>Test &amp; Inspection</b>	Operating Compartment Accessories (Air Control)		
<b>Specification</b>	_____	<b>Frequency</b>	All Cab Cars
<b>Test location</b>	GE Plant	<b>Train consist</b>	One Car
<p>1. Purpose of Test To check the operation of operating compartment accessories.</p> <p>2. Test prerequisite</p> <ol style="list-style-type: none"> <li>1) 130-140 psi main reservoir air supply.</li> <li>2) 74 volts power supply.</li> </ol> <p>3. Equipment Required</p> <ol style="list-style-type: none"> <li>1) Stop watch</li> </ol> <p>4. Test Procedure</p> <p>4.1 Horn</p> <ol style="list-style-type: none"> <li>1) Operate the Air Horn Valve.</li> <li>2) Check the horn sound.</li> <li>3) Check that Bell sounds and continues to sound.</li> <li>4) Push bell control switch to OFF check that bell stops.</li> </ol> <p>4.2 Windshield Wiper</p> <ol style="list-style-type: none"> <li>1) Operate the Wiper Control Valve.</li> <li>2) Check the wipe angle and speed.</li> </ol> <p>4.3 Exterior Bell</p> <ol style="list-style-type: none"> <li>1) Operate the Bell Control Valve.</li> <li>2) Check the bell sound.</li> </ol> <p>4.4 Sanding System</p> <ol style="list-style-type: none"> <li>1) Make an Emergency Brake application.</li> <li>2) Measure the sanding time.</li> <li>3) Operate sanding switch and check that sanding occurs.</li> </ol>			
<b>Remarks</b> Rev. Jan. 14, 1986			

## Test &amp; Inspection

## Operating Compartment Accessories (Air Control)

## 5. Criteria

## 5.1 Horn

## 1) Horn sound:

The sound of Horn shall be adequate continues to sound.

## 2) Bell:

Bell shall continues to sound at the same time.

## 5.2 Windshield Wiper

## 1) Wipe angle:

Wiper blade shall not touch the window frame.

## 2) Speed:

Wipe speed shall be controled fleely by control valve.

## 5.3 Exterior Bell

## 1) Bell sound:

The sound of bell shall be adequate continues to sound.

## 5.4 Sanding System

## 1) Sanding time:

Appro. 30 seconds.

## 2) Sanding switch:

Sanding system shall be worked during the operation of sanding switch.

TEST REPORT for Operating Compartment Accessories (1/1)

CAR No. \_\_\_\_\_

DATE: \_\_\_\_\_

MD-DOT: \_\_\_\_\_

NS: \_\_\_\_\_

GE: \_\_\_\_\_

No.	Description	Criteria	Result	Remarks
1	Horn			
	1) Horn sound	Confirmation	PASS/FAIL	
	2) Bell	Confirmation	PASS/FAIL	
2	Windshield Wiper			
	1) Wipe angle	Confirmation	PASS/FAIL	
	2) Speed	Confirmation	PASS/FAIL	
3	Exterior Bell			
	1) Bell sound	Confirmation	PASS/FAIL	
4	Sanding System			
	1) Sanding time	Appro. 30 seconds	seconds	
	2) Sanding switch	Confirmation	PASS/FAIL	

## Detailed Test Plan

Date: Jan. 23, 1986

Test & Inspection	Cab Signal/ATC System Test												
Specification	2.13.10	Frequency	All Cab Cars										
Test location	GE Plant	Train consist	One Car										
<p>1. Purpose of Test To confirm the function of cab signal/ATC on board system.</p> <p>2. Test Prerequisites 74 volts power supplied Air brake system must be completed. Air brake system is in normal operating condition, and brakes can be released by brake handle. Each pressure switch is adjusted properly.</p> <p>3. Equipments Required Cab make-up key Brake handle</p> <p>4. Test Procedure</p> <p>4.1 Set switches on ATC rack in electric locker as follows :</p> <table> <tr> <td>ATC CUTOFF switch (white)</td> <td>"IN"</td> </tr> <tr> <td>ATS CUTOFF switch (yellow)</td> <td>"IN"</td> </tr> <tr> <td>NON CAB OVERSPEED switch (red)</td> <td>"79MPH"</td> </tr> <tr> <td>WHEEL WEAR switch</td> <td>"36"</td> </tr> <tr> <td>LOCAL TEST switch</td> <td>"OFF"</td> </tr> </table> <p>4.2 Set CAB SIGNAL switch on ADU to "IN" position.</p> <p>4.3 Set cab make-up key to ON position.</p> <p>4.4 Release brake by brake handle.</p> <p>4.5 Apply brake to activate BCPS.</p> <p>4.6 Set and hold DEPT TEST switch on ADU to "LO" position, and observe the flashing indication to verify the proper adjustment of receiver sensitivity.</p>				ATC CUTOFF switch (white)	"IN"	ATS CUTOFF switch (yellow)	"IN"	NON CAB OVERSPEED switch (red)	"79MPH"	WHEEL WEAR switch	"36"	LOCAL TEST switch	"OFF"
ATC CUTOFF switch (white)	"IN"												
ATS CUTOFF switch (yellow)	"IN"												
NON CAB OVERSPEED switch (red)	"79MPH"												
WHEEL WEAR switch	"36"												
LOCAL TEST switch	"OFF"												
Remarks													

## Test &amp; Inspection

## Cab signal/ATC System Test

- 4.7 Then set and hold DEPT TEST switch to "HI" position, and check the indication of each aspect and overspeed condition.
  - 4.8 Check that OVERSPEED light is lit on each overspeed condition, and it turns off on underspeed condition.
  - 4.9 Aspect will change upward first, and acknowledging is not needed.
  - 4.10 After reaching the highest aspect (120mph), test step will automatically reverse to downward change of aspect.
  - 4.11 At each downward change of aspect, acknowledging must be taken not to cause penalty brake application.
  - 4.12 After aspect changes to the lowest limit (20mph), take no action and observe that penalty brake will be applied 5 seconds after aspect has changed.
  - 4.13 Brakes can be released only by moving brake handle to suppression position.
5. Criteria
- 5.1 Speed limit aspects shall be lit properly.
  - 5.2 Indication "VZ" shall be lit only when simulated speed is below 3mph.
  - 5.3 Indication "OVERSPEED" shall be lit only when simulated speed exceeds aspect, and be flashed when penalty brake occurs.
  - 5.4 Indication "DEPT TEST" shall be lit only when DEPARTURE TEST switch is operated.
  - 5.5 Alarm sound on ADU shall be activated when aspect changes downward.
  - 5.6 Confirm push-to-test function of each indication lamp.
  - 5.7 Check dimmer function for each indication lamp and speedometer.
  - 5.8 When cab make-up key is OFF position, (this means trailing cab) each indication lamp, speedometer illumination and alarm sound on ADU must not be activated. But speedometer shows simulated speed.

TEST REPORT for CAB SIGNAL/ATC SYSTEM TEST (1/1)

CAR No. \_\_\_\_\_

DATE: \_\_\_\_\_

MD-DOT: \_\_\_\_\_

NS: \_\_\_\_\_

GE: \_\_\_\_\_

No	Description	Criteria	Result	Remarks
1	Display of cab signal	Confirmation	<u>PASS/FAIL</u>	
2	Display of speed	"	<u>PASS/FAIL</u>	
3	Overspeed detection	"	<u>PASS/FAIL</u>	
4	Audible alarm	"	<u>PASS/FAIL</u>	
5	Acknowledging	"	<u>PASS/FAIL</u>	
6	Penalty brake application	"	<u>PASS/FAIL</u>	
7	Indication lamps	"	<u>PASS/FAIL</u>	

# Detailed Test Plan

TP-026'-1/2

Date: Jan. 23, 1986

<b>Test &amp; Inspection</b>	<b>Cab Signal/ATC System Test</b>		
<b>Specification</b>	2.13.10	<b>Frequency</b>	All Cab Cars
<b>Test location</b>	MD-DOT Property	<b>Train consist</b>	One Car

1. Purpose of Test  
To confirm the function of cab signal/ATC on board system.
  
2. Test Prerequisites  
74 volts power supplied  
Air brake system must be completed.  
Air brake system is in normal operating condition, and brakes can be released by brake handle.  
Each pressure switch is adjusted properly.
  
3. Equipments Required  
Cab make-up key  
Brake handle
  
4. Test Procedure
  - 4.1 Set switches on ATC rack in electric locker as follows :
 

ATC CUTOFF switch (white)	"IN"
ATS CUTOFF switch (yellow)	"IN"
NON CAB OVERSPEED switch (red)	"79MPH"
WHEEL WEAR switch	"36"
LOCAL TEST switch	"OFF"
  - 4.2 Set CAB SIGNAL switch on ADU to "IN" position.
  - 4.3 Set cab make-up key to ON position.
  - 4.4 Release brake by brake handle.
  - 4.5 Apply brake to activate BCPS.
  - 4.6 Set and hold DEPT TEST switch on ADU to "LO" position, and observe the flashing indication to verify the proper adjustment of receiver sensitivity.

**Remarks**

## Test &amp; Inspection

## Cab signal/ATC System Test

- 4.7 Then set and hold DEPT TEST switch to "HI" position, and check the indication of each aspect and overspeed condition.
  - 4.8 Check that OVERSPEED light is lit on each overspeed condition, and it turns off on underspeed condition.
  - 4.9 Aspect will change upward first, and acknowledging is not needed.
  - 4.10 After reaching the highest aspect (120mph), test step will automatically reverse to downward change of aspect.
  - 4.11 At each downward change of aspect, acknowledging must be taken not to cause penalty brake application.
  - 4.12 After aspect changes to the lowest limit (20mph), take no action and observe that penalty brake will be applied 5 seconds after aspect has changed.
  - 4.13 Brakes can be released only by moving brake handle to suppression position.
  - 4.14 Set cab signal generating equipment under receiving coils, and generate each cab signal and confirm that each signal can be indicated on ADU.
5. Criteria
- 5.1 Speed limit aspects shall be lit properly.
  - 5.2 Indication "VZ" shall be lit only when simulated speed is below 3mph.
  - 5.3 Indication "OVERSPEED" shall be lit only when simulated speed exceeds aspect, and be flashed when penalty brake occurs.
  - 5.4 Indication "DEPT TEST" shall be lit only when DEPARTURE TEST switch is operated.
  - 5.5 Alarm sound on ADU shall be activated when aspect changes downward.
  - 5.6 Confirm push-to-test function of each indication lamp.
  - 5.7 Check dimmer function for each indication lamp and speedometer.
  - 5.8 When cab make-up key is OFF position (this means trailing cab), each indication lamp, speedometer illumination and alarm sound on ADU must not be activated. But speedometer shows simulated speed.
  - 5.9 ADU shall indicate proper aspect generated by stand-by generator.

TEST REPORT for CAB SIGNAL/ATC SYSTEM TP-026' (1/1)

(at UNION STATION, WASHINGTON)

Car No. \_\_\_\_\_

Date; \_\_\_\_\_

MD-DOT; \_\_\_\_\_

NS; \_\_\_\_\_

No.	Description	Criteria	Result	Remarks
1.	Receiving & indication of cab signal	Confirmation	<u>PASS/FAIL</u>	
2.	Audible alarm	"	<u>PASS/FAIL</u>	
3.	Acknowledging	"	<u>PASS/FAIL</u>	
4.	Indication lamps	"	<u>PASS/FAIL</u>	
5.	Indication of speed	"	<u>PASS/FAIL</u>	
6.	Overspeed detection	"	<u>PASS/FAIL</u>	
7.	Penalty brake application	"	<u>PASS/FAIL</u>	

## Detailed Test Plan

TP-027-1/3

Date: May 14, 1985

<b>Test &amp; Inspection</b>	Car Body Water Tightness test (Complete Car)								
<b>Specification</b>	2.1.9(e)	<b>Frequency</b>	All Car						
<b>Test location</b>	NSSK & GE Plant	<b>Train consist</b>	One Car						
<p>1. Purpose of Test To Verify water tightness of all areas of the car and under floor boxes meet specification.</p> <p>2. Test Prerequisite All parts and equipment at exterior and under floor shall be assembled before this test start at GE plant.</p> <p>3. Equipment Required</p> <p>3.1 Capacity of test apparatus</p> <table style="width: 100%; border: none;"> <tr> <td style="padding-left: 20px;">1) Rainfall quantity</td> <td style="text-align: right;">0.625 gal./min/ft</td> </tr> <tr> <td style="padding-left: 20px;">2) Nozzle velocity</td> <td style="text-align: right;">150 ft/sec.</td> </tr> <tr> <td style="padding-left: 20px;">3) Nozzle from the surface tested</td> <td style="text-align: right;">within 3 feet</td> </tr> </table> <p>3.2 Test apparatus</p> <p>1) At NIPPON SHARYO plant: See attached sheet (1) and (2).</p> <p>2) At GE plant: Water hose with shower nozzle. See attached sheet 3/4.</p> <p>4. Test Procedure</p> <p>4.1 Test areas</p> <ol style="list-style-type: none"> <li>1) All areas of the car side, end, and roof, including doors and windows.</li> <li>2) The boxes mounted on the car.</li> <li>3) The fresh intake ducts in the car roof.</li> </ol> <p>4.2 Testing time Minimum 10 minutes per spray areas.</p>				1) Rainfall quantity	0.625 gal./min/ft	2) Nozzle velocity	150 ft/sec.	3) Nozzle from the surface tested	within 3 feet
1) Rainfall quantity	0.625 gal./min/ft								
2) Nozzle velocity	150 ft/sec.								
3) Nozzle from the surface tested	within 3 feet								
<b>Remarks</b> Rev. July 31, 1985									

## Test &amp; Inspection

## Car Body Water Tightness Test (Complete Car)

## 4.3 Test Procedure at NIPPON SHARYO plant.

- 1) Car setting in the test apparatus.
- 2) Spray water on surface of car end, car side and roof.
- 3) Test car will be move, and spray water on surface of each test areas.
- 4) Test areas:
  - Side and front windows
  - Side entrance door with windows
  - End door without window (This window will be installed at GE plant)
  - Fresh air intake duct
  - Tail light
  - Other parts that installed at NIPPON SHARYO plant.

## 4.4 Test Procedure at GE plant.

- 1) Car setting in the test apparatus.
- 2) Spray water on surface of the assembly portion at GE plant.
- 3) Spray water on surface of the under floor boxes.  
Water spray is to be directed at the exposed side and end of the boxes as would normally occurs during car washing operations.
- 4) Test areas:
  - Horn
  - Radio antena
  - Window in the end door
  - Under floor boxes
  - Other parts that installed at GE plant.

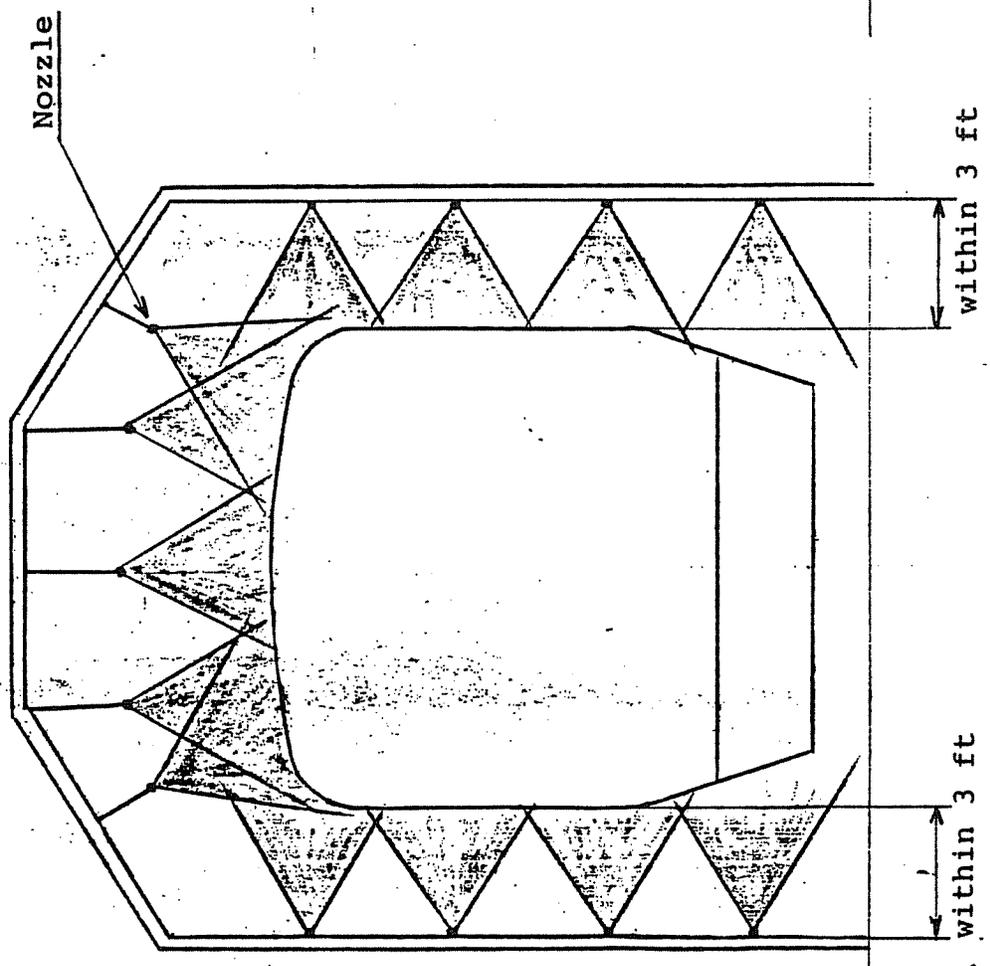
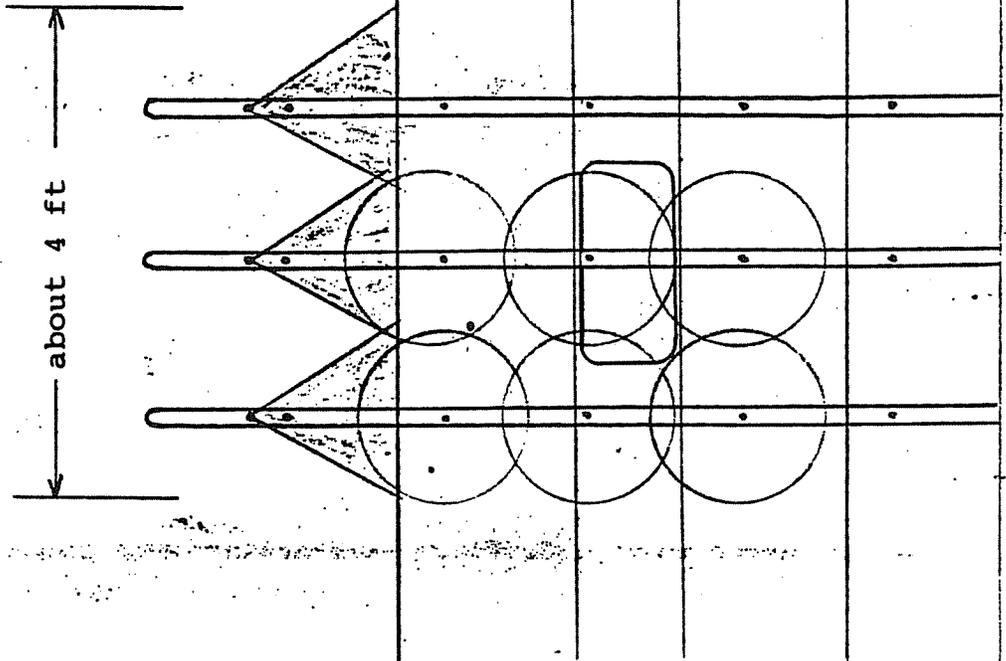
## 4.5 Test Procedure of Fresh Air Intake Duct Test at GE plant.

The fresh air intake ducts in the car roof shall be tested once, in a similar manner, with ventilating fans running at full speed.

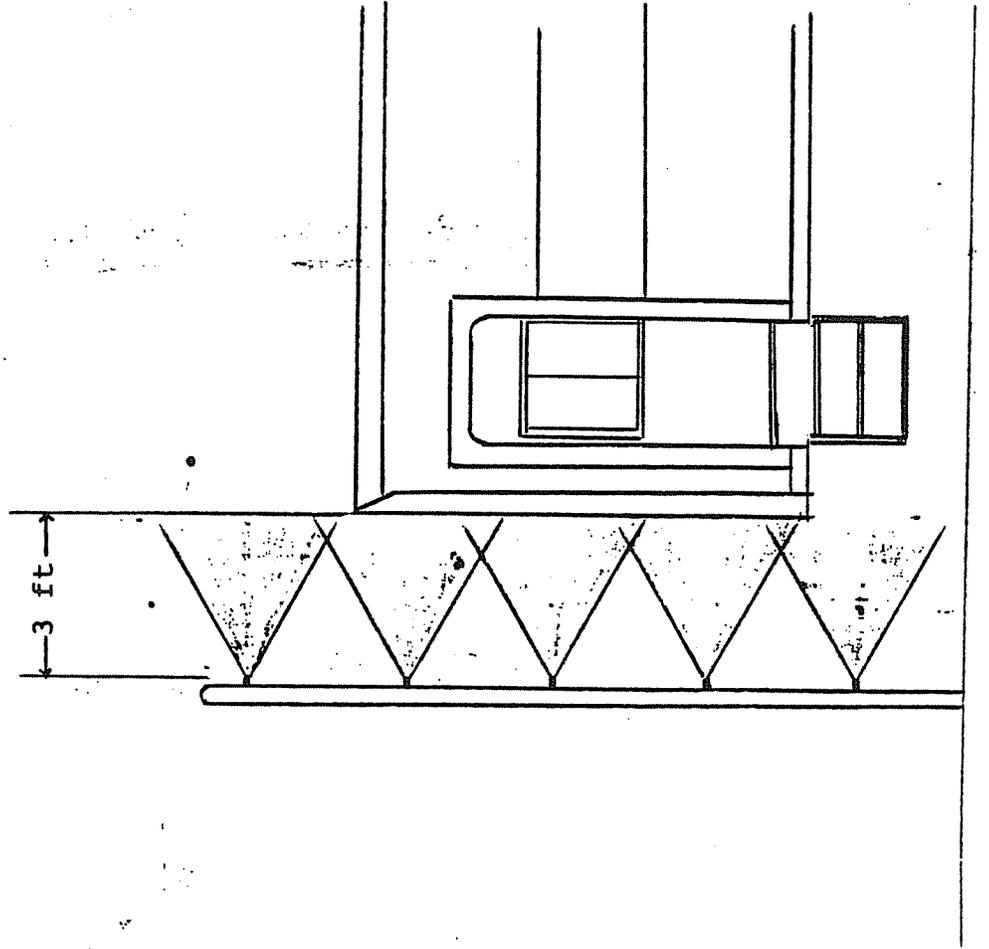
- 1) Supply power 480 volts.
- 2) Turn on air conditioning system.
- 3) Water spray is to be directed at the fresh air intake.
- 4) Check the water leakage from duct to inside of the car.

**Test & Inspection****Car Body water Tightness Test (Complete Car)****5. Criteria**

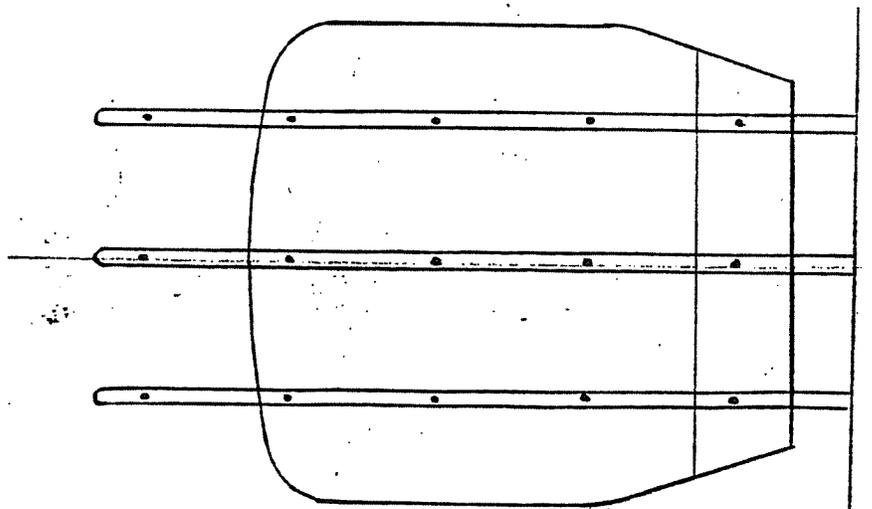
No leakage of water to be found inside car and inside under floor boxes.



Attached sheet - (1)

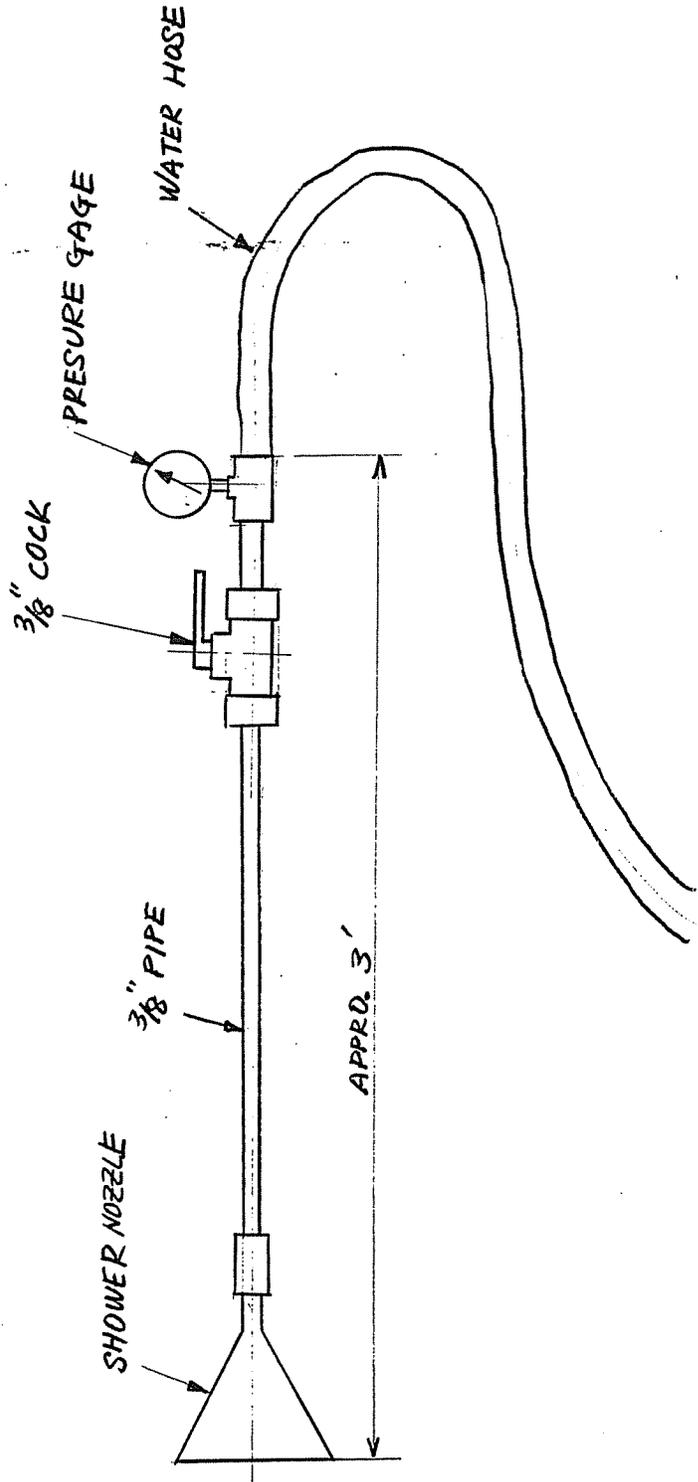


Attached sheet - (2)



Attached sheet - (3)

TEST APPARATUS FOR WATER TIGHTNESS TEST  
AT GE CLEVELAND



TP-027

TEST REPORT for Car Body Water Tightness Test (1/1)

CAR No. \_\_\_\_\_

DATE: \_\_\_\_\_

MD-DOT: \_\_\_\_\_

NS: \_\_\_\_\_

GE: \_\_\_\_\_

No.	Description	Criteria	Result	Remarks
1	At Nippon Sharyo Plant. Test time: 10 minutes per spray areas.	No leakage		
2	At GE Plant. Test time: 10 minutes per spray areas.	No leakage		
3	Fresh Air Intake Duct Test Test time: 10 minutes per spray areas.	No leakage		One time test

## Detailed Test Plan

TP-050-1/1

Date: May 14, '85

<b>Test &amp; Inspection</b>	<b>Weighing (Complete Car)</b>						
<b>Specification</b>	2.1.9(k)	<b>Frequency</b>	All Cars				
<b>Test location</b>	Chessie Property	<b>Train consist</b>	One car				
<p>1. Purpose of Test To weigh each car at the time of shipment.</p> <p>2. Test Prerequisite:</p> <p>2.1 The weight of each end of the car shall be provided separately.</p> <p>2.2 Car condition:</p> <p style="margin-left: 20px;">1) Empty car</p> <p style="margin-left: 20px;">2) Water tank; Fill</p> <p style="margin-left: 20px;">3) Sandbox; Empty</p> <p>3. Equipment Required</p> <p>3.1 Weighing Device: Qualified track scale (At Chessie property)</p> <p>3.2 Tolerance of Weighing device: Shall be maintained within a tolerance of 2/10 of 1%.</p> <p>4. Test Procedure</p> <p>4.1 Measure the scale empty before car set on the track scale.</p> <p>4.2 Each truck is set on the track scale.</p> <p>4.3 Measure the weight and make weight tickets.</p> <p>5. Criteria</p> <table style="margin-left: 40px; border: none;"> <tr> <td style="padding-right: 20px;">Cab car</td> <td>less than 111,000 pounds</td> </tr> <tr> <td>Trailer car</td> <td>less than 106,000 pounds</td> </tr> </table>				Cab car	less than 111,000 pounds	Trailer car	less than 106,000 pounds
Cab car	less than 111,000 pounds						
Trailer car	less than 106,000 pounds						
<p><b>Remarks</b> The weight tickets will be submitted to MD-DOT for approval.</p> <p style="margin-left: 40px;">Rev. Jan. 14, 1986</p>							

Weighing (Complete Car)

TP-050

Measuring Date: \_\_\_\_\_

Car No. \_\_\_\_\_

Place: \_\_\_\_\_

Unit: Pound

POSITION	WEIGHT	TOTAL
"A" Truck		
"B" Truck		

Note: Empty condition.

# Detailed Test Plan

TP-051.153-1/6

Date: Jan. 22, 1986

<b>Test &amp; Inspection</b>	<b>Stop Distance and Deceleration Test</b>		
<b>Specification</b>	2.1.9(m) & 2.10.1(c)	<b>Frequency</b>	All Cars
<b>Test Location</b>	MDOT Property	<b>Train Consist</b>	3 or 6 Cars
<p>1. Purpose of Test To verify that the deceleration at full service braking and emergency braking meet a specified value.</p> <p>2. Test Prerequisites</p> <p>2.1 Train Consist</p> <p>1) First train (3 cars)</p> <p style="margin-left: 40px;">Baltimore <span style="margin-left: 150px;">Washington</span></p> <p style="margin-left: 80px;">← AEM7 + T + T + C →</p> <p>2) Second train</p> <p style="margin-left: 40px;">Baltimore <span style="margin-left: 150px;">Washington</span></p> <p style="margin-left: 80px;">← AEM7 + T + T + T + C + C + C →</p> <p>3) Third train</p> <p style="margin-left: 40px;">Baltimore <span style="margin-left: 150px;">Washington</span></p> <p style="margin-left: 80px;">← AEM7 + T + T + T + T + T + C →</p> <p>2.2 Load Condition</p> <p>1) First train Empty and loaded(30,000 lbs) conditions.</p> <p>2) Second and third trains Empty condition.</p> <p>2.3 Test Speed</p> <p>1) First train Initial speed; 15, 30, 50, 70, 90, 105, 120, 125 mph</p> <p>2) Second and third trains Initial speed; 15, 30, 50 , 70, 80 mph</p>			
<b>Remarks:</b>			

## Test &amp; Inspection

## Stop Distance and Deceleration Test

~~2.4~~ Brake Condition

This test will be conducted using the locomotive air brake and no dynamic brake.

## 2.5 Running Direction

This test will be performed in pull mode and one side direction only.

## 2.6 Test Track

This test will be performed on straight and tangent level track of Amtrak service line.

## 2.7 Brake Shoe

## 1) First train

All brake shoes must be worn in so that no less than 75% of the shoe face is in contact with the wheel.

## 2) Second and third trains

New shoes.

## 3. Equipment Required

## 3.1 First Train

This test will be performed by A.A.R. TRANSPORTATION TEST CENTER.

Refer to Detailed Test Plan of High Speed Test for A.A.R..

## 3.2 Second and Third Trains

## 1) Recorder:

GOULD 2800S Direct Writing Recorder 8 pen type

## 2) COLUMBIA Digital Acceleration System:

System Range;  $\pm 1.0000$  g

Accelerometer; SA-107 Ser. No.2368

Digital Indicator; DSI-700 Ser. No.1524

## 3) Air Pressure Transducer:

Brake Pipe Pressure; Max. 300 psi

Brake Cylinder Pressure; Max. 150 psi

## 4) Car Performance Tester:

CLEAR MUSEN KABUSHIKIGAISHA MODEL No. TC-02SX

## 5) Stop Watch

Test & Inspection

Stop Distance and Deceleration Test

4. Test Procedure

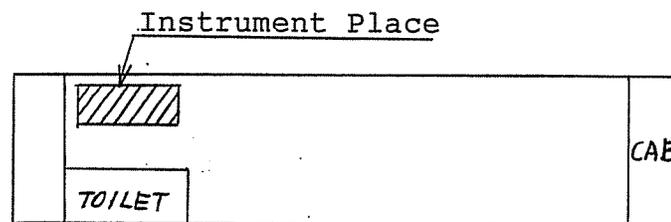
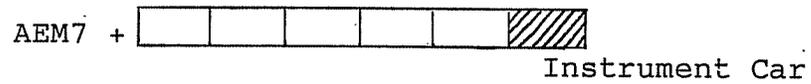
4.1 First Train

This test will be performed by A.A.R..

Refer to Detailed Test Plan of High Speed Test for A.A.R..

4.2 Second and Third Trains

1) Location of Test Equipments

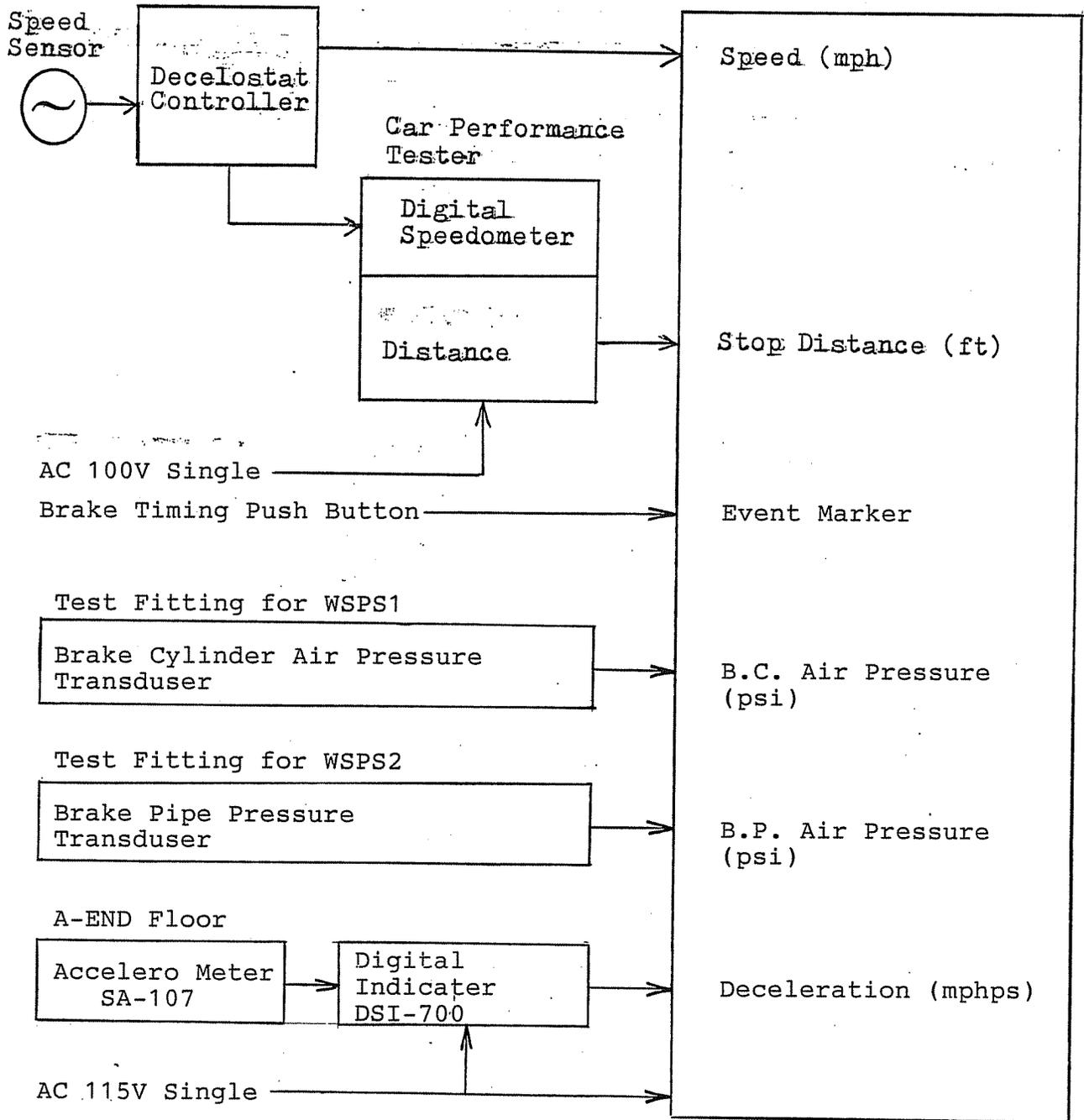


Test & Inspection

Stop Distance and Deceleration Test

2) Instrumentation

GOULD 2800S  
8 pen Recorder



## Test &amp; Inspection

## Stop Distance and Deceleration Test

## 3) Test Schedule

The test will be performed as follow.

<u>Test No.</u>	<u>Speed</u>	<u>Brake Condition</u>
1.	80	Emergency
2.	15	Full Service
3.	80	Full Service
4.	15	Emergency
5.	70	Emergency
6.	30	Full Service
7.	70	Full Service
8.	30	Emergency
9.	50	Full Service
10.	50	Emergency

## 4) Brake Timing

When, test train will be made initial speed, brake timing push button shall be pushed at the same time as operation of brake valve handle.

## 5) Stop Time

Stop time will be measured by stop watch.  
Stop time shall be measured from point of movement of the brake handle to point of stop.

## 6) Deceleration

The deceleration will be calculated by stop time and speed.

$$\text{Deceleration (mphps)} = \frac{\text{Car Speed (mph)}}{\text{Stop Time (sec.)}}$$

Value of car speed will be read from Speed Indicator on the Car Performance Tester.

## Test &amp; Inspection

## Stop Distance and Deceleration Test

## 5. Criteria

## 5.1 Full Service Brake

The "FULL SERVICE" braking rate shall be 2.00 mphps average, from 80 mph.

The maximum instantaneous rate during a stop shall not exceed 2.75 mphps.

## 5.2 Emergency Brake

The "EMERGENCY" braking rate shall be at least 2.50 mphps average, from 80 mph.

The maximum rate during a stop shall not exceed the limits of clean, dry rail adhesion.

## 6. Test Report

Test report of first train will be submitted by A.A.R..

DETAILED TEST PLAN AND PROCEDURE  
FOR  
TESTING OF NIPPON SHARYO'S FABRICATED TRUCK  
ON  
NEW MARYLAND D.O.T. COACHES

A D - 85549

AUGUST 1985

NIPPON SHARYO SEIZO KAISHA, LTD.

A.A.R. TRANSPORTATION TEST CENTER

1.0 Introduction

The new Maryland Department of Transportation (DOT) passenger cars equipped with the Nippon Sharyo fabricated trucks are presently being assembled at the General Electric Plant located at Cleveland, Ohio. Prior to being placed in revenue service, the first cab car will be tested at speeds up to 125 mph on test trackage designated by Amtrak. The primary purpose for such testing is to qualify, for safety, the Nippon Sharyo trucks on the new cars for revenue service on Amtrak's Northeast Corridor.

2.0 Objective

To conduct safety qualification tests on the Nippon Sharyo (NS) fabricated trucks with the new Maryland DOT cars for operation on the Amtrak Northeast Corridor for speeds up to 125 mph. Test will be run on actual revenue service truckage designated by Amtrak.

The following tests will be conducted:

- o Truck Stability
- o Carboy Ride Quality
- o Dynamic Stress of the Truck Frame and Bolster
- o Braking Performance
- o Wheel Slide Performance

3.0 Methodology

The Association of American Railroads (AAR), at the Transportation Test Center (TTC), located at Pueblo, Colorado, will transport test equipment and instrumentation personnel to the facility designated by the Sumitomo Corporation for

the application and setup of the measurement devices and data recording equipment to the test car. At the present time this effort and costs are predicated on AAR/TTC personnel going to the General Electric plant in Cleveland, Ohio and using the plant facilities and Nippon Sharyo engineers and technicians support to perform the instrumentation task. Upon completion of the instrumentation installation and transport of the test car to the test location, the AAR/TTC will provide an instrumentation engineer and a test engineer to conduct the tests in conjunction with the Nippon Sharyo engineers and/or their designers. The AAR/TTC engineers plan to perform instrumentation checkouts during this move of the car to the test location. The test section is expected to be a high speed section between Winans (MP-105) and Bowie (MP-120) north of Washington D.C.

Due to the limited number of data recording channels available, the AAR/TTC proposes to conduct the tests in separate test blocks. The test blocks will be as follows and will use the following instrumentation as listed below in Table 3.1.

Table 3.1 Test Break Down in Blocks  
Test Blocks

1. Test 1 - Ride Quality/Lateral Stability

	Channels
Test Carbody Accelerometers	5
Truck Frame Accelerometers	3
Dummy on Truck Frame Accelerometer	1
Journal Bearing Box Accelerometer	3

## Test 1 (Continued)

	Channels
Speed Analog	1
Distance (Tach Pulse)	1
Voica	1
Time (IRIGB)	1
Tape Reference	1
Secondary Suspension Displacement	3
Primary Suspension Displacement	2
	<u>22</u>
2. Test 2 - Dynamic Stress	
Truck Frame/Bolster Strain Gages	16
Secondary Suspension Displacement	3
Primary Suspension Displacement	2
Speed Analog	1
Distance (Tach Pulse)	1
Voice	1
Tape Reference	1
Time	1
	<u>26</u>
3. Test 3 - Braking and Wheel Slide	
Journal Bearing Temperature	2
Tread Temperature	2
Disc Temperature	2
Brake Cylinder Pressure	2
Axle Speeds	4
Speed Analog	1
Distance (Tack Pulse)	1
Longitudinal Accelerometer	1
Voice	1
Tape Reference	1
Time	1
Master Controller (Event)	1
	<u>19</u>

4.0 Instrumentation/Measurements

The Instrumentation/Measurement requirements are dictated by the particular test being performed. Therefore, the Instrumentation/Measurement description will be shown as test blocks.

4.1 Measurement Summary - Test No. 1  
Ride Quality/Lateral Stability

4.1.2 Measurement Procedure:  
Determination of vehicle's ride quality and lateral stability through measurement/monitoring of vehicle dynamics.

4.2.1 Measurements #1, #2, #3, #4, #5 carbody accelerations

- 4.2.2 Measurement Locations:  
 # 1 - Vertical  $\odot$  car floor  $\odot$  B-end truck  
 # 2 - Lateral  $\odot$  car floor  $\odot$  B-end truck  
 # 3 - Longitudinal  $\odot$  car floor  $\odot$  B-end truck  
 # 4 - Vertical  $\odot$  car floor  $\odot$  car  
 # 5 - Lateral  $\odot$  car floor  $\odot$  car

- 4.2.3 Transducer Particulars:  
 Type - Servo accelerometers  
 Range -  $\pm 5$  g;  $\pm 5.0$  VDC F.S.O.  
 Frequency - Nominal natural freq. - 125 Hz

Mounting procedure - Triaxial mounts installed on heavy metal plate with three (3) leveling screws turned down to point to extend through carpeting/tile floor coverings.

- 4.3.1 Measurements #6, #7, #8, #9 truck sideframe accelerations

- 4.3.2 Measurement Locations:  
 # 6 - Vertical  $\odot$  journal sideframe right B-end  
 # 7 - Lateral  $\odot$  journal sideframe right B-end  
 # 8 - Longitudinal  $\odot$  journal sideframe right B-end  
 # 9 - Dummy, not installed on sideframe, mechanically isolated for electrical reference.

- 4.3.3 Transducer Particulars:  
 Type - Piezo - resistive  
 Range -  $\pm 25$  g  
 Frequency - DC - 750 Hz:

Mounting Procedure - Accelerometers are aluminum blocks installed at measurement locations using adhesive.

- 4.4.1 Measurements #10, #11, #12:  
 Truck journal bearing accelerations

- 4.4.2 Measurement Locations:  
 # 10 vertical  $\odot$  journal bearing right side B-end  
 # 11 lateral  $\odot$  journal bearing right side B-end  
 # 12 vertical  $\odot$  journal bearing left side B-end

- 4.4.3 Transducer Particulars:  
 Same as side frame measurements

- 4.5.1 Measurements #13, #14, #15, #16, #17:  
 Primary and secondary truck displacements

- 4.5.2 Measurement Locations:
- # 13 Vertical primary suspension displacement right side B-end
  - # 14 Vertical primary suspension displacement left side B-end
  - # 15 Vertical secondary suspension displacement right B-end
  - # 16 Vertical secondary suspension displacement left B-end
  - # 17 Lateral secondary suspension displacement right B-end

- 4.5.3 Transducer particulars:  
Type - displacement - string potentiometer  
range  $\pm 2.5"$

Mounting Procedure - mounting plates adhered to measurement location with adhesive with transducer attached to plate with hardware.

- 4.6.1 Measurement #18, #19:  
Vehicle speed, distance

- 4.6.2 Measurement Locations/Particulars:

Use of vehicle's tach. pulse rate will determine speed and distance. Atach. pulse will be provided from the vehicle's brake systems. From known pulse rate/revolution and wheel diameter, a frequency to voltage (VFV) converter will provide an analog speed with the direct pulse rate determining distance read by counter.

- 4.7.1 Measurements #20, #21, #22:  
Reference data

- 4.7.2 Measurement Locations/Particulars:

- # 20 - Voice
- # 21 - Time - generated from time code generator - IRIG B
- # 22 - Tape Reference - Servo control tape speed to insure playback speed same as record. Self generated signal from tape unit.

All measurements (transducers) are to be conditioned by universal signal conditioning providing:

- excitation
- amplification
- filtering

Recording Medium: Analog tape  
2 - 8 channel stripe charts  
Miscellaneous test equipment for monitoring of particular data channels.

4.8 Measurement — Test No. 2:  
Truck Dynamic Stress

4.8.1 Measurement Procedure:

Determination of stresses induced in truck and bolster through measurement of strains at critical locations on truck frame/bolster. Measurement of truck dynamics with displacement transducers.

4.9 Measurements #24, 30, 104, 116, 138, 218, 321, 328, 511, 516, 556, 560, 572, 575, 599.

Note: Measurement number for strain gage installations were taken from Nippon Sharyo's static truck test channel assignments. therefore, the actual gage locations can be referenced to Figures 1, 2, 3, 4 contained in Nippon Sharyo's static truck test report.

4.9.1 Transducer Particulars:

The strain gages to be installed are a weldage 350 , environmentally-sealed gage with inherent leads, with the exception of installation Numbers 516 (physical size of truck location approximately 1/4" wide requires bondable gage); 572 and 575 require bondable gages because of sharp radius fillets.

weldable Gages:

Type — Hitec. HBW — 350 — 3VR  
Gage Factor — nominal 2.05

Bondable Gages: 350 BF  
Type — Micro-measurement — EA-06-350 BF  
Gage Factor — nominal 2.05

4.10 Measurements 13, 14, 15, 16, 17

These measurements are required for dynamic stress testing and ride quality/lateral stability testing. Measurement particulars are given in Sections 4.5.

4.11 Measurements #18, #19

Vehicle speed and distance same as Section 4.6.

4.12 Measurements 20, 21, 22:

Reference data same as Section 4.7.

- 4.13 Measurement Summary — Test No. 3:  
Braking and Wheel Slide
  - 4.13.1 Measurement Procedure:  
Determination of deceleration rates and efficiency of slide system.
- 4.14 Measurement No. 23, 24:  
Brake cylinder pressures
  - 4.14.1 Measurement Locations:  
#23 — BCP B-end truck  
#24 — BCP A-end truck
  - 4.14.2 Transducer Particulars:  
Type — Strain gage pressure  
Range —  $\pm 200$  PSIG  $\pm 5$  VDC FSO  
Frequency — 2.5 KHz
- 4.15 Measurements No. 18, 19:  
Vehicle speed and distance
- 4.16 Measurements No, 20, 21, 22:  
Reference data
- 4.17 Measurement No. 25:  
Controller signal to indicate brake Application.
  - 4.17.1 Measurement Location/particulars:  
This measurement provided by switch closure from locomotive cab. When signal applied, signal used as an event to coordinate timing.
- 4.18 Measurement No. 3:  
Deceleration rate
  - 4.18.1 Measurement Location:  
  
Three — Longitudinal car floor  
B-end truck
  - 4.18.2 Transducer Particulars:  
Type — Servo Accelerameter  
Range — This measurement will be miles-per-hour-per-second engineering unit.  
Frequency — Filtered at 3HZ to eliminate noise and jerk.

4.19 measurement No. 26, 27:  
Journal Bearing Temperatures

4.19.1 Measurement Location

26 — Right journal bearing B-end  
27 — Left journal bearing B-end

4.19.2 Transducer Particulars:

Type — Type K Thermocouple routed  
Through hole in bolt or journal bearing

4.20 Measurement No. 28, 29, 30, 31:  
Wheel Tread Temperatures

4.20.1 Measurement Locations:

28 — Right wheel B-end Truck  
29 — Left wheel B-end Truck  
30 — Right wheel A-end Truck  
31 — Left wheel A-end Truck

4.20.2 Transducer Particulars:

Type — Type K Thermocouple imbedded into  
brass plug inserted into tread brake shoe

4.21 Measurement No. 32, 33:  
Disc Brake Temperatures

4.21.1 Measurement Location

32 — Axle 1 B-end Truck disc pad  
33 — Axle 2 B-end Truck disc pad

4.21.2 Transducer Particulars:

Type — Type K Thermocouple imbedded into  
brass plug inserted in disc brake pad

4.22 Measurement No. 34, 35, 36, 37:  
Vehicle axle speeds

Signal available from brake systems  
electronic control unit

4.23 Instrumentation Summary

The basic instrumentation system consists of transducers signal conditioning, data recording medium (analog tape) and various test equipment. All data channels will be recorded on analog tape for data reduction with critical channels monitored real time or strip chart recorders. Temperature data will be recorded as analog signals to allow time history investigation and data reduction. Deceleration data will be plotted real time as deceleration vs speed on X-Y plotter.

Slide data will be investigated with strip chart data of axle speeds. Proposed equipment has sufficiently high input impedance as to not effect the vehicle's electronics.

5.0

Implementation

Prerequisite testing, such as functionality checks of brake systems, wheel-slide control, door checkout, trainline verification, etc. will be conducted prior to any testing in which AAR/TTC personnel and instrumentation is involved. Testing, as mentioned before, will be broken into separate blocks.

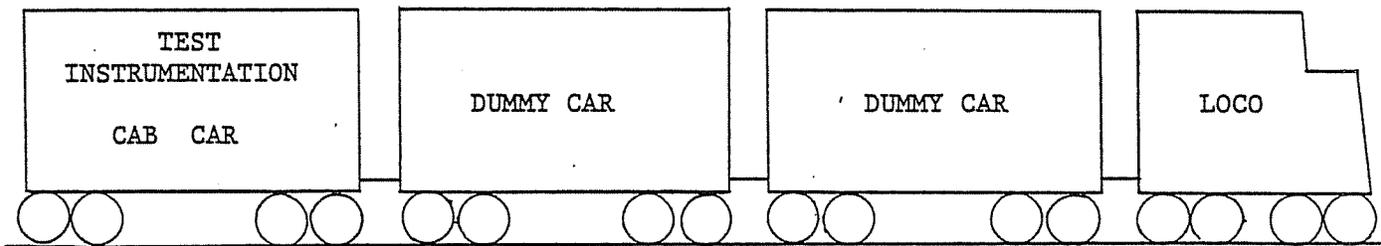
5.1

Test Consist

The test consist will remain the same throughout the testing period. The only change in the consist will be loaded and unloaded cars. The test consist is as sketched in Figure 5.1.1. The proposed means of loading car is with sand bags. The empty condition is without any sand bags and the loaded condition is 30,000 lbs. of sand bags.

The locomotive is to be an Amtrak AEM-7 and the test car is a new Maryland DOT car equipped with two fabricated, outside frame trucks. The two dummy cars will also be two additional new Maryland DOT cars.

Figure 5.1.1. Test Consist



## 5.2 Test Sequence

The testing will be performed on a predetermined section of Amtrak service line. The tests will be performed as described below. Table 5.2.1 shows the overall test sequence.

### 5.2.1 Ride Quality/Lateral Stability

These tests will be performed to evaluate the suspension system regarding the human tolerance regime and lateral response regime during high speed train operation. The following speeds and conditions will be used to perform the evaluation and the total number of runs are nine (9).

<u>SPEED (MPH)</u>	<u>TEST CAR WEIGHT</u>	<u>OTHER CONDITIONS</u>
70, 80, 90, 100, 110, 120, 125	Empty	Air bags inflated to normal
Two selected speeds from above	Empty	Air bags deflated

### 5.2.2 Braking — Start/Stop and Wheel Slide

The train start/stop tests will be conducted using the locomotive air brakes and no dynamic brake. Full service and emergency at various speeds. Table 5.2.2.1 is a detailed test sequence plan of the tests which will be performed.

The wheel slide tests will be performed only in the tare, or empty condition, of the test car. Since the intention of the test is just to check whether the system works and prevents slide, the speeds will be as used for the start/stop brake tests. If necessary water will be used to induce a slide.

### 5.2.3 Dynamic Stress Tests

These tests will be performed only with the test car loaded to 30,000 lbs. The speeds at which the train consist will be run are identical to the ones used during the ride

Table 5.2.1 Overall Test Sequence

TEST TYPE	TEST CAR.	SPEED	REMARKS
1. Ride Quality/ Lateral Stability	T	70,80,90,100,110 120 and 125 mph	Air bags normal
	T	Two speeds from above	Air bags deflated
2. Braking			
a. Start/Stop	T & L	15,30,50,70,90 105,120,125 mph	Full service & emergency locomotive air brake
b. Wheel Slide	T	Same	Same
3. Dynamic Stress	L	70,80,90,100,110 120 and 125 mph	

T=Tare/Empty Test Car

L=Loaded Test Car - 30,000 lbs. of sand bags

Note:

The test car will also serve as the instrumentation car.  
The loading condition of dummy cars are loaded condition for Ride quality/  
Stability Test and same load condition as the test car for Braking Test  
and Dynamic Stress Test.

Table 5.2.2.1 Braking Start/Stop Test Sequence

SPEED	NUMBER OF TEST RUNS				TOTAL
	CL3F	CL3E	CTF	CTE	
15	2	2	2	2	8
30	2	2	2	2	8
50	2	2	2	2	8
70	2	2	2	2	8
90	2	2	2	2	8
105	2	2	2	2	8
120	2	2	2	2	8
125	2	2	2	2	8
TOTAL OF TEST RUNS	16	16	16	16	64

C=Coupled Test Car/Whole Consist  
 T=Tare (Empty Car).  
 L3=Loaded Car = 30,000lbs.  
 F=Full Service Braking  
 E=Emergency Braking

Quality/ lateral stability tests (70 - 120 in 10 mph increments and 125 mph).

6.0 Data reduction and Analyses

The test setup inside the test car (also the instrumentation car) will include two (2) strip chart recorders, each having a 8 channel capability, for real time data observations. Apart from the real time data records a 28 channel analog system will be used to acquire data from all phases of testing. Since the data reduction requirements of each test block (type) are a little different they will be addressed separately. Selection of the channel to be recorded on the strip charts will vary with the type of testing and will be decided in conjunction with the different personnel involved.

6.1 Ride Quality/Lateral Stability Test Data

The acceleration and displacement measurements will be captured on the strip chart recorders to be analyzed post test. The accelerations will be summarized and decisions made as to the ride quality of the trucks and cars. The only deliverable from the AAR/TTC personnel will be strip chart records and analog tape recorded data. AAR/TTC will gladly participate in the analysis of the data but as of now no comparative data or criteria for qualification have been decided upon.

The lateral stability test data will also be analyzed from the real time strip charts. Video recorders will be positioned such that motions of both trucks will be observable. No unstable motions should be observed/recorded for proper qualifications of the trucks. Sustained lateral instability

(hunting) will be ascertained by studying the journal bearing accelerometer records. Again the AAR/TTC data deliverable is strip chart records and analog tape records.

#### 6.2 Braking — Start/Stop and Wheel Slide Test Data

For the start/stop braking test runs real time strip chart records of 16 selected channels will be available. Analog records of all data channels will be acquired. Apart from the real time strip chart recordings a real time XY plot of deceleration versus speed will be provided for each run. The longitudinal accelerometer signal will be used after being low pass filtered at 3 Hz to obtain the plot. In addition to these real time data, post test data reduction and analysis will consist of the following:

- a. Distance in feet to stop
- b. Time in minutes/seconds to stop
- c. XY plot of distance versus time
- d. Time relationship between event of master control braking lever and brake pipe and brake cylinder pressure
- e. Maximum temperatures of tread and disc brakes
- f. Car speed versus time

For the wheel slide tests the strip chart records will suffice for determining whether or not the slide system functioned.

#### 6.3 Dynamic Stress Test Data

Strain gage data from the fifteen (15) gages will be recorded as part of the total analog tape recorded channels.

A multiplying factor will be used to convert strain to stress in each single separate axis and the stress values ascertained. A 25 minutes run duration will be chosen and a rainflow counting method used to determine how many cycles, at damaging stresses, were induced at each gage location. The results of the counting will be overlaid on a selected Modified Goodman Diagram to see whether any of the stresses observed lie outside the boundary of the diagrams. This will provide information regards the fatigue stressing of each component/ location.

Nippon Sharyo personnel will assist/provide AAR/TTC to select appropriate modulus parameters and Modified Goodman Diagrams for use during analysis.

7.0

Test Report

The AAR/TTC will prepare a test report and will submit it. The test report will contain, but not be limited to, the following:

- a. Test Objective
- b. Results to include sample strip charts, plots and tables
- c. Test setup discussion
- d. Instrumentation
- e. Test specifications, if any, are to be used for qualification
- f. Photograph

In the event that certain critical areas are not covered by any established specification, or criteria, the AAR/TTC will make recommendations. The recommendations may reflect certain limitations explain how they were established.

8.0 Schedule

The detail schedule is as attached.

TEST SCHEDULE

ITEMS	SEP./85		20-23		SEP. 27-28			OCT./85			NOV./85			DEC./85			
	13				27	28	29	30	1	2	3	4					
PERPARATION FOR HIGH SPEED TEST	△	△															
TRANSPORT TO TEST SITE			△	△													
RIDE QUALITY & LATERAL STABILITY (EMPTY)					△												
LOAD TEST WITH 30,000LBS OF SAND BAGS						△											
BRAKING START/STOP (LOADED)						△	△										
DYNAMIC STRESS								△									
UNLOAD TRAIN TO TARE CONDITION									△								
BRAKING START/STOP (EMPTY)									△	△							
WHEEL SLIDE (EMPTY)											△						
DRAFT REPORT													△				
FINAL REPORT																	△

# Detailed Test Plan

TP- 100 -1/2

Date: Jan. 14, 1986

<b>Test &amp; Inspection</b>	Equalization Test		
<b>Specification</b>	2.1.9(i)	Frequency	One Time
<b>Test Location</b>	GE Plant	Train Consist	First Car
<p>1. Purpose of Test The purpose of this test is to verify that the truck has adequate suspension system.</p> <p>2. Test Prerequisites 2.1 Empty condition 2.2 Air spring will be inflated (Refer to NOTE-A on sheet 2/2)</p> <p>3. Equipments Required 3.1 Wheel load measuring device: Electrical type-- capacity 22,000 lbs/wheel The testing trak including wheel load gauges shall be arranged to maintain sufficient length of straight and level line to prevent unbalanced weighing. 3.2 Hydraulic jack with oil pump 3.3 Spacing blocks: Height 2" and 2 1/2", 2 pieces 3.4 Measuring scale</p> <p>4. Test Procedure 4.1 Sett up the 1st wheel set on the wheel load gauge. 4.2 Measure and record each wheel load and axle spring height. 4.3 Jack up the No.1 wheel more than 2" and set up 2" high block between wheel tread and rail, and set down the wheel on the block. 4.4 Measure load of No.1 and No.2 wheels and measure axle spring heights. 4.5 Jack up the same wheel 2 1/2" and check the contact point</p>			
<b>Remarks:</b>			

## Test &amp; Inspection

## Equalization Test

of remaining 7 wheel treads to the rail for clearance between wheel treads and the rails using thickness gauges.

- 4.6 Let down the wheel and measure load and spring height of No.1 and No.2 wheel again.
- 4.7 Same procedure as 3) through 5) for No.1 wheel to be applied to No.2 wheel.
- 4.8 Jacking up and measuring processes will be repeated for No.3 wheel to No.8 wheel.
- 4.9 Move the car and set the 2nd wheel set on the load gauge.
- 4.10 Jacking up processes will be repeated for No.1 to No.8 wheel and measuring load of No.3 and No.4 wheels and axle spring heights.
- 4.11 Same processes will be repeated for the 3rd and 4th wheel set.

## 5. Criteria

- 5.1 One wheel in jacking up to 2" condition  
Without resulting in a change of more than 40% in the weight on any wheel.
- 5.2 One wheel in jacking up to 2 1/2" condition  
Contact between the other three wheel treads and rails shall be verified.

NOTE-A: After completing the body height adjustment, the lever for leveling valve is to be separated from adjusting rod by disconnecting the upper special pin, and fastened by wire to prevent rotating motion.

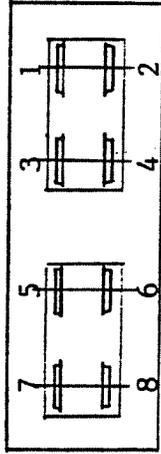
Equilization Test  
TP-100

Date Tested : \_\_\_\_\_

Car No. : \_\_\_\_\_

Truck No. : \_\_\_\_\_

A-End



MDOT ENGINEER: \_\_\_\_\_ NS ENGINEER: \_\_\_\_\_

Jacking Up : 2 172"

Description	Wheel No. Jacked Up				Remarks
	1 / 5	2 / 6	3 / 7	4 / 8	
Criteria	To Contact between the other Three Wheel Treads & the Rails				
Other Wheel No. and Result	2 / 6	1 / 5	1 / 5	1 / 5	
	3 / 7	3 / 7	2 / 6	2 / 6	
	4 / 8	4 / 8	4 / 8	3 / 7	

Jacking Up : 2"

Description	Wheel No. Measured								Remarks	
	B - End				A - End					
	1	2	3	4	5	6	7	8		
Criteria	Change in the weight < 40 %									
1	A									A : Normal weight on wheel (lbs.)
	B									
	C									
	D									
2	A									B : Weight on wheel after jacked up (lbs.)
	B									
	C									
	D									
3	A									C : Difference = A - B (lbs.)
	B									
	C									
	D									
4	A									D : Result = C/A x100 (%)
	B									
	C									
	D									

Jacking Up : 2"

Description	Wheel No. Measured								Remarks
	B - End				A - End				
	1	2	3	4	5	6	7	8	
Criteria	Change in the weight < 40 %								
A									A : Normal weight on wheel (lbs.)
B									
C									
D									
5									B : Weight on wheel after jacked up (lbs.)
A									
B									
C									
6									C : Difference = A - B (lbs.)
A									
B									
C									
7									D : Result = C/A x100 (%)
A									
B									
C									
8									
D									

# Detailed Test Plan

TP- 101 -1/2

Date: Jan. 17, 1986

Test & Inspection	Stability Test		
Specification	2.1.9(i)	Frequency	One Time
Test Location	GE Plant	Train Consist	First Car

1. Purpose of Test

The purpose of this test is to verify that the clearance required by Spec. 2.11.3(b) is attained at a 6" superelevation.

2. Test Prerequisites

- 2.1 Full loaded condition: 33,000 lbs.
- 2.2 Air spring will be inflated.

3. Equipments Required

- 2.1 Poles as base line: Settlet on the test track sideway.
- 2.2 Hydraulic jack with oil pump
- 2.3 Spacing blocks: Height 6" (4 pieces)
- 2.4 Measuring scale
- 2.5 Dead weight: 33,000 lbs.

4. Test Procedure

- 4.1 Set up the car on the test track and measure the distance between base line and set points of the car body.  
(Marked X and Y in FIG.1)
- 4.2 Jack up the 4 wheel treads of one side of the car by 6" in hight.
- 4.3 Measure the distance between base line and set point of the car body.
- 4.4 The lateral displacement and roll angle of the car body will be calculated from the test data by the following equation.

Lateral Displacement:      =  $x - x'$  and  $y - y'$   
 Roll Angle:                      =  $\tan^{-1} \frac{(x - x') - (y - y')}{h}$

Remarks:

5. Criteria

The degree of motion restriction required by 2.11.3(b) to be attained.

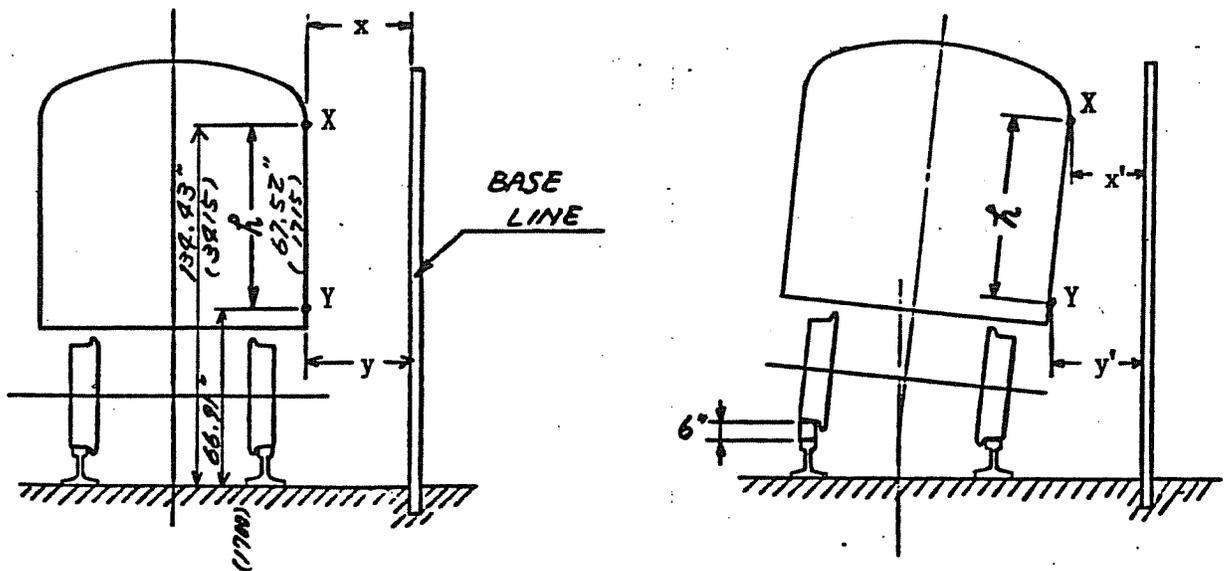


FIG. 1

Test Result

MDOT ENGINEER: \_\_\_\_\_

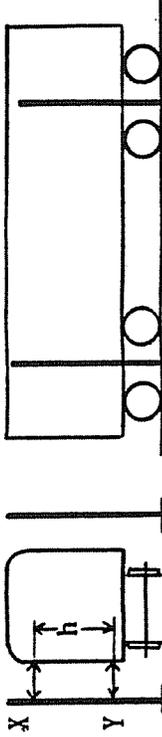
for

NSSK ENGINEER: \_\_\_\_\_

Stability Test

TP-101

R L A-End B-End



Date Tested : \_\_\_\_\_

Car No. : \_\_\_\_\_

Unit : Inch

Description	Right-Hand Side		Left-Hand Side		Remarks
	A - End	B - End	A - End	B - End	
Lateral Displacement	X	Y	X	Y	
before					
after					
Result					
Roll Angle of the Car Body					Degree (h=67.52")

Description		Right-hand Side				Left-hand Side				Remarks
		A- End		B- End		A- End		B- End		
Air Spring Pressure	before	R	L	R	L	R	L	R		unit: 2 lbs/in
	after									



## Test &amp; Inspection

## Weighing ( Truck )

Electric Weighing Indicator; REVERE Corp. of America

Part No.; C-55800-4-1000

Serial No.; 5370A

Capacity; 100,000 lbs.

4. Test Procedure

4.1 set the load cell and indicator.

4.2 Lift the truck by hoist and put on the load cell.

4.3 Measure the weight of track.

5. Criteria

Confirmation

# Detailed Test Plan

TP-110-1/1

Date: Jan. 23, 1986

<b>Test &amp; Inspection</b>	Low Voltage Operation Test of 74 volts Circuits		
<b>Specification</b>	2.9.3.(d)	<b>Frequency</b>	First Car
<b>Test location</b>	GE Plant	<b>Train consist</b>	One Car

1. Purpose of Test

To confirm that each equipment of 74 volts circuit can be operated properly in case of the break down of battery charging system.

2. Test Prerequisites

All 74 volts equipments shall be in normal operating condition.

3. Equipments Required

- Voltmeter -- SOAR Type ME-524
- Ammeter -- HIOKI Model 3107-01

4. Test Procedure

- 4.1 Turn "BAB" and "BCCB" off.
- 4.2 Remove the wire #B1 at battery box, and reconnect it to the intermediate 55 volts tap of battery.
- 4.3 Turn "BAB" on.
- 4.4 Operate each equipment of 74 volts circuit, and confirm that each of them shows normal function.
- 4.5 Measure the current consumed, at 74 volts and 55 volts.
- 4.6 Only PA/IC system must be checked at 50 volts too.

5. Criteria

Confirmation.

**Remarks**

TEST REPORT for LOW VOLTAGE OPERATION TEST (1/1)

CAR No. 7745

DATE: \_\_\_\_\_

MD-DOT: \_\_\_\_\_ NS: \_\_\_\_\_

No	Description	Criteria	Result	Remarks
1	Each equipments' operation	Operation at 55 V	_____	
2	PA/IC system only	Operation at 50 V	_____	
3	Ampere at 74 V		_____	
4	Ampere at 55 V		_____	

## Detailed Test Plan

TP-111-1/2

Date: May 14, '85

<b>Test &amp; Inspection</b>	Light Intensity Measurement		
<b>Specification</b>	2.1.9.(o).4	<b>Frequency</b>	First Cab Car
<b>Test location</b>	GE Plant	<b>Train consist</b>	One Car

**1. Purpose of Test**

To verify that light intensity in passenger area meets specified level.

**2. Test Prerequisites**

- 2.1 Measurement shall be performed at night time or equivalent condition.
- 2.2 All lighting in passenger area and vestibules shall be turned on.
- 2.3 All doors shall be closed.

**3. Equipment Required**

Illuminance meter      HIOKI   3422   20/200/2000 1x

**4. Test Procedure**

- 4.1 Measure light intensity in passenger area at:  
     33 inches above the floor and upper surface of a transverse 45 degree plane at passenger seats.
- 4.2 Measure light intensity on the aisle floor.
- 4.3 Measure light intensity on vestibule floor.
- 4.4 Measuring points are indicated on next page.

**5. Criteria**

- 5.1 Shall be not less than 30 footcandles for procedure 4.1
- 5.2 Shall be not less than 15 footcandles for procedure 4.2

Note: 15 footcandles are equal to 161 lux

**Remarks**

Test & Inspection

Light Intensity Measurement

Measuring points are:

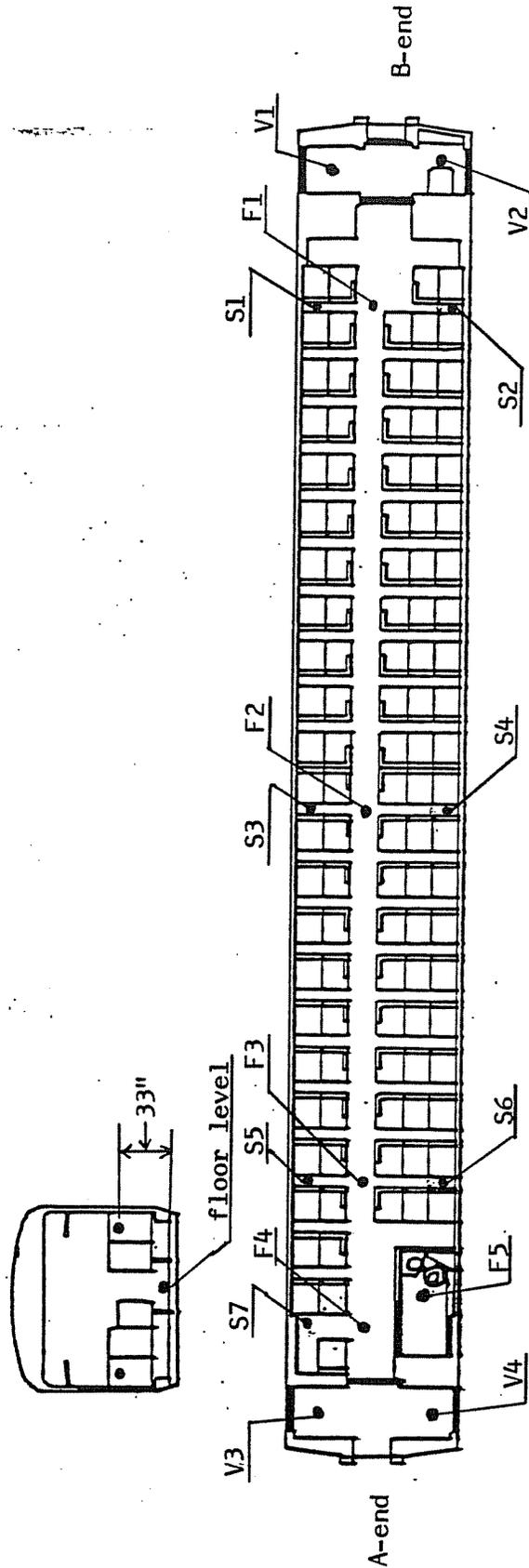
F1 - F5 : floor level

S1 - S7 : 33" above the floor

V1 - V4 : surface of trap door

and

V1' - V4' : surface of step with trap door up



MEASURING POINTS OF LIGHT INTENSITY

TP-111

TEST REPORT for LIGHT INTENSITY MEASUREMENT (1/3)

CAR No. 7745

DATE: \_\_\_\_\_

MD-DOT: \_\_\_\_\_ NS: \_\_\_\_\_

No	Description	Criteria	Result	Remarks
1	33" above the floor at passenger area	More than 30 footcandles	Min. _____ footcandles	
2	Aisle floor at pass.area	More than 15 footcandles	Min. _____ footcandles	
3	Vestibule floor	_____	Min. _____ footcandles	
4	Step surface	_____	Min. _____ footcandles	

TEST REPORT for LIGHT INTENSITY MEASUREMENT (2/3)

CAR No. 7745

Measuring Point	Light Intensity (footcandles)	Minimum	Remarks
S1			33" above the floor
S2			
S3			
S4			
S5			
S6			
S7			
F1			Aisle floor
F2			
F3			
F4			
F5		—	
V1			Vestibule floor
V2			
V3			
V4			
V1'			Step surface
V2'			
V3'			
V4'			

TEST REPORT for LIGHT INTENSITY MEASUREMENT (3/3)

CAR No. 7745

Measuring points are:

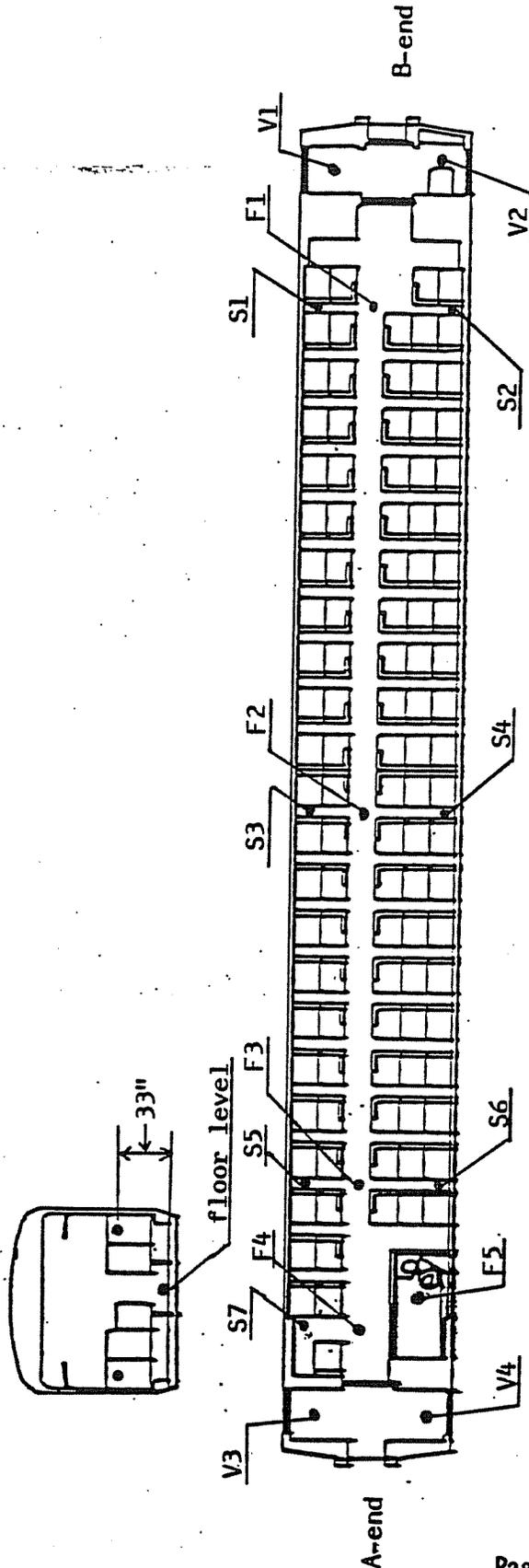
F1 - F5 : floor level

S1 - S7 : 33" above the floor

V1 - V4 : surface of trap door

and

V1' - V4' : surface of step with trap door up



MEASURING POINTS OF LIGHT INTENSITY

# Detailed Test Plan

TP-112-1/3  
Date: May 27, '85

<b>Test &amp; Inspection</b>	Air-conditioning Test (Hot Room Test)		
<b>Specification</b>	2.1.9.(g).1	<b>Frequency</b>	First Cab Car
<b>Test location</b>	GE Plant	<b>Train consist</b>	One Car

**1. Purpose of Test**

To confirm that air-conditioning system maintains interior car temperature properly in hot ambient temperature.

**2. Test Prerequisites**

2.1 Adjusting plates for fresh air inlets and air diffuser shall be set properly.

2.2 480 volts power supplied.

2.3 This test shall be performed in hot room, and the temperature in hot room shall maintain 100 degrees F.

2.4 Blower fan may be used to circulate air in hot room.

2.5 Passenger load and solar load shall be simulated by means of heaters inside the car.

**3. Equipments Required**

Hot Room

Automatic Recorder with 28 temperature sensors      YEW 4088      1 set

Thermometer, Bar type DB & WB                2 sets

Clamp type ammeter with output terminal      HIOKI 3107-01      1 set

**4. Test Procedure**

4.1 Set the car in hot room.

4.2 Apply 480 volts power to the car, and precheck the function of air-conditioning system.

4.3 Set temperature sensors (refer to attached sheet) and other instruments, and check each instrument's function.

4.4 Turn "ACCB" off, and keep all doors opened to soak the car in hot ambient

**Remarks**      REV. Jan. 23, 1986

Test & Inspection

Air-conditioning Test (Hot Room Test)

temperature.

- 4.5 Raise the hot room temperature up to 100 degrees F, and maintain it throughout this test.
- 4.6 Activate heat load inside the car.
- 4.7 After interior car temperature has leveled off, start recording equipments, then close all doors, turn "ACCB" on.
- 4.8 All ventilating equipments shall be in normal operating condition.
- 4.9 Measurement shall be continued until interior car temperature stabilizes.
- 4.10 In addition to temperatures, current of compressor motor & condenser motor shall be recorded to monitor cooling control signal.

5. Criteria

- 5.1 The temperature in the operating compartment, with side windows closed, shall be:  
no more than 5 degrees F higher than the interior car temperature.
- 5.2 At any given point between the low ceiling sections, and at least 12 inches from the ceiling and 6 inches from the floor & walls, throughout the cycling of the cooling apparatus, the variations in interior car temperatures shall be at most: ± 2 degrees F.
- 5.3 At any given time except during pull-down, between any point approximately 48 inches above the floor and the corresponding point 6 inches above the floor in the vertical plane, the variation in temperatures shall be at most: ± 2 degrees F.
- 5.4 The interior car temperature at any given time except during pull-down, at any point from one end of the car to the other, shall be:  
no less than 73 degrees F and no more than 77 degrees F.

Note: Temperature measuring points are indicated on next page.

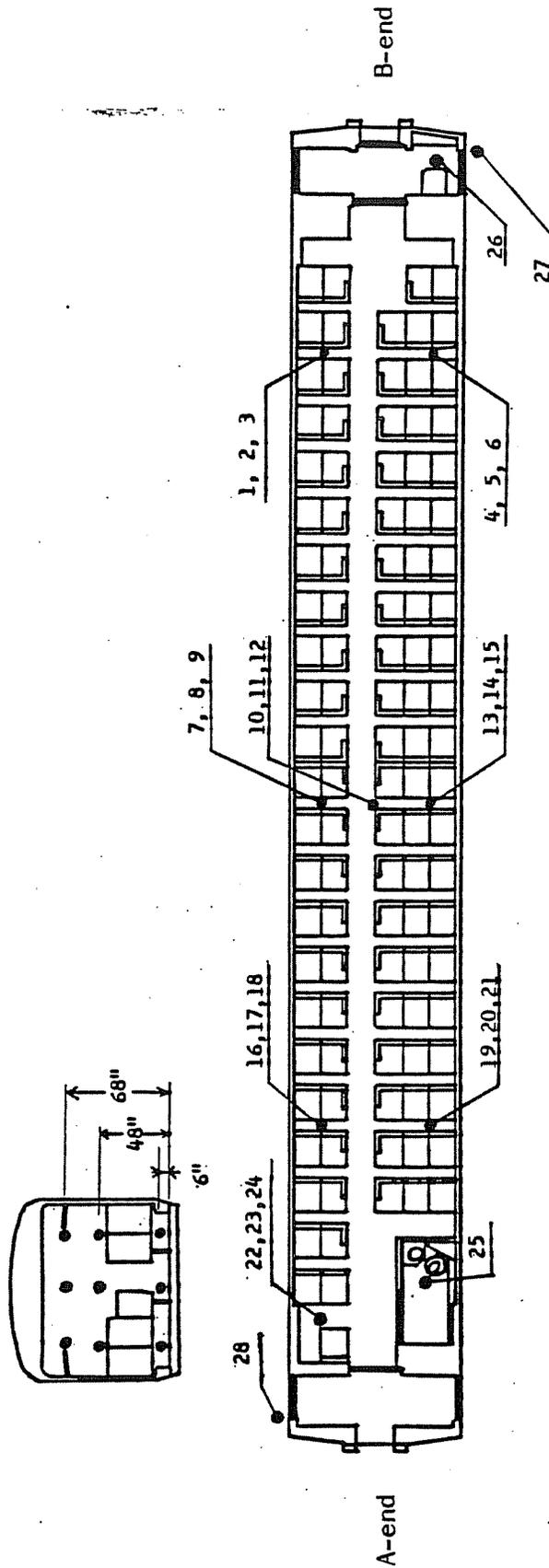
HEAT LOAD CALCULATIONS

Passenger load	450 BTU/hr X 121 pass.	54450 BTU/hr
Solar load		14000 BTU/hr
		<u>TOTAL: 68450 BTU/hr</u>

equal to: 20.0 kW

Test & Inspection

Air-conditioning Test (Hot Room Test)

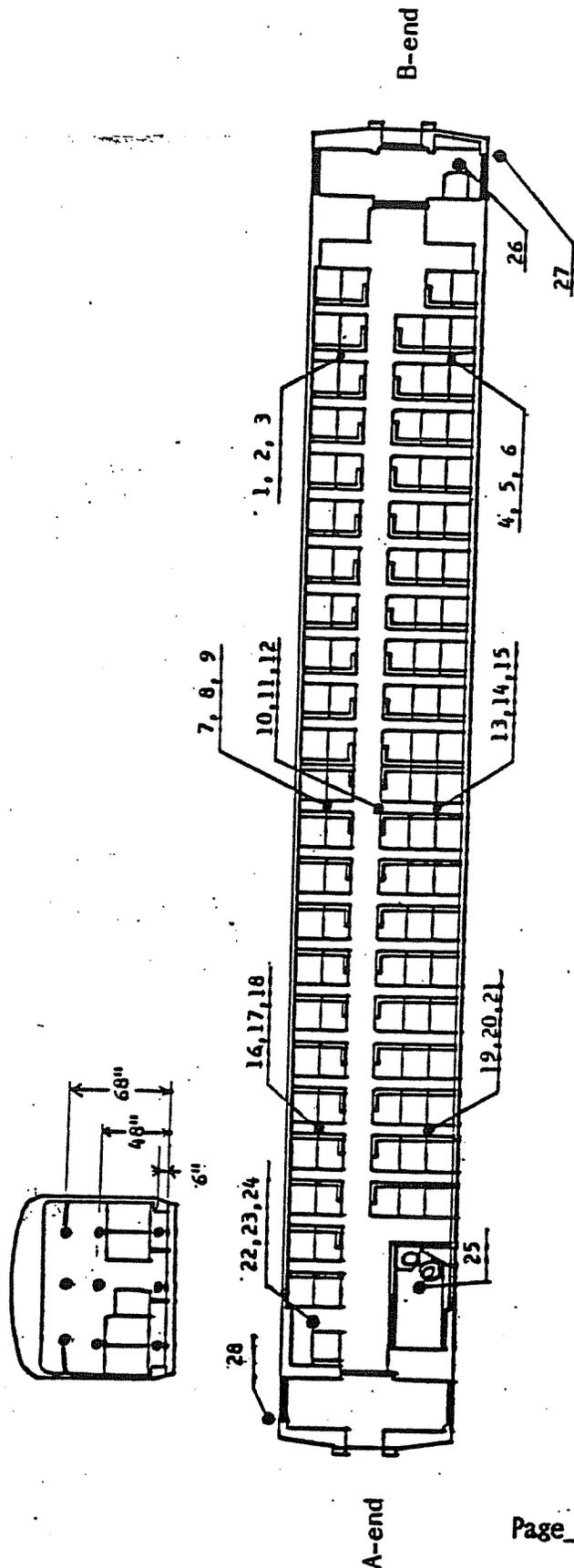


MEASURING POINTS OF AIR-CONDITIONING TEST



TEST REPORT for HOT ROOM TEST (2/2)

CAR No. 7745



MEASURING POINTS of AIR-CONDITIONING TEST

# Detailed Test Plan

TP-113-1/1  
Date: May 14, '85

Test & Inspection	Vibration		
Specification	2.3.1(e)	Frequency	First Cab car.
Test location	GE Plant	Train consist	One Car

1. Purpose of Test  
To verify that vibration at floor, walls, ceiling panels and seat frames meet a specified level.
  
2. Test Prerequisite  
The car stopped and all vehicle system operating simultaneously at normal conditions ( HVAC in full cooling ).
  
3. Equipment Required  
Vibration Meter                      RION VM-20A
  
4. Test Procedure  
Measure vibration in passenger area at:  
Car floor  
Walls  
Ceiling panels  
Seat frames
  
5. Criteria
 

Amplitude	Not to exceed 0.10 inch (peak to peak)
Acceleration	Not to exceed 0.01 g (peak) Frequency range from zero to 14 Hz
Velocity	Not to exceed 0.045 inch/sec (peak) Frequency range above 14 Hz.

Remarks Rev. July 31, 1985

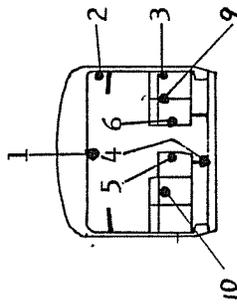
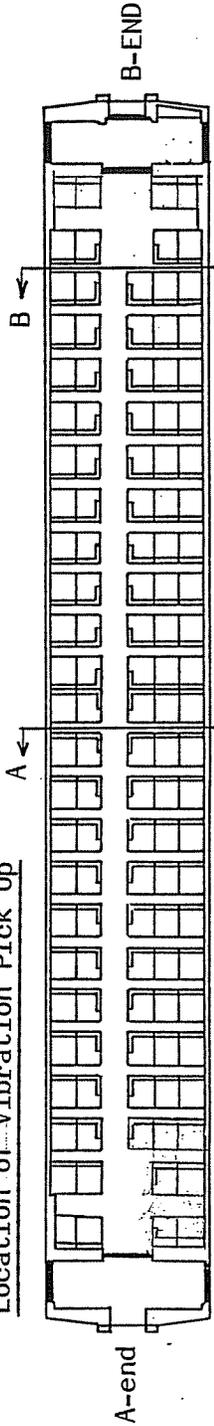
Test Report for Vibration Measurement

Car No. \_\_\_\_\_

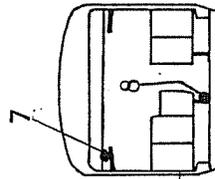
Date: \_\_\_\_\_

Checked by: \_\_\_\_\_

Location of Vibration Pick Up



Section A-A



Section B-B

1. Ceiling panel
2. Interior panel above window
3. Interior panel below window
4. Floor
5. Top of armrest of two passenger seat
6. Top of armrest of three passenger seat
7. Low ceiling panel
8. Floor
9. Back panel of two passenger seat
10. Back panel of three passenger seat

MEASURING POINT	1	2	3	4	5	6	7	8	9	10
<u>CRITERIA</u>										
<u>AMPLITUDE</u> Not to exceed 0.10 inch (Peak to peak)										
<u>ACCELERATION</u> Not to exceed 0.01 g Frequency range from 0 to 14 Hz.										
<u>VELOCITY</u> Not to exceed 0.045 inch/sec Frequency range above 14 Hz.										

# Detailed Test Plan

TP-114-1/4

Date: May 14, '85

Test & Inspection	Noise		
Specification	2.3.11(a)(b)(c)	Frequency	First Cab Car
Test location	GE and MD-DOT Property	Train consist	_____

**1. Purpose of Test**

To verify that noise at interior and exterior meet a specified level.

**2. Test Prerequisite**

**2.1 Interior Noise Levels (Passenger Area)**

1) Car Speed:

UP to 80 mph

2) Operating Condition:

Acceleration

Deceleration

Coasting

3) Measurement Point:

Not less than one foot from the ceiling, floor, end wall or side wall.

**2.2 Interior Noise Levels (Operator's Cab)**

1) Operating Condition:

Measurement of cab noise levels will be performed on the normal service condition.

2) Measurement Point:

Microphone or Noise Exposure meter will be installed on driver's uniform.

**2.3 Exterior Noise Levels**

1) Car Speed:

Stopped

2) Operating Condition:

All vehicle systems operating simultaneously at normal conditions.

**Remarks** Rev. July 31, 1985  
Rev. Jan. 23, 1986

## Test &amp; Inspection

## Noise

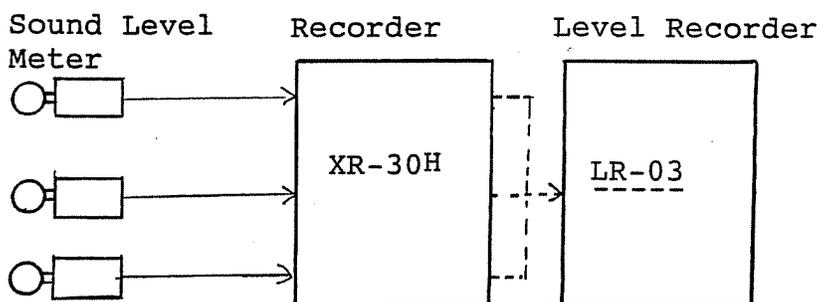
## 3) Measurement Point:

50 Foot horizontally from the centerline of the roadway at the axle center line elevation, and at any point along the length of the car on either side.

## 3. Equipment Required

## 3.1 Passenger Areas and Exterior

- |                      |                       |
|----------------------|-----------------------|
| 1) Sound Level Meter | RION NA-20(ANSI S1.4) |
| 2) Data Recorder     | TEAC XR-30H           |
| 3) Level Recorder    | RION LR-03            |



## 3.2 Operator's Cab

- |                         |            |
|-------------------------|------------|
| 1) Noise Exposure Meter | RION EQ-07 |
|-------------------------|------------|

## 4. Test Procedure

## 4.1 Interior Noise Levels (Passenger Areas) - at MD-DOT Property

## 1) Preparation:

Set measurement instrument and microphone in passenger areas.

## 2) Measurement:

Turn on recording instrument, and measure noise levels following condition;

Car speed 0 mph → up to 80 mph → 0 mph

## 3) Data Evaluation:

Noise levels recorded will be printed by Level Recorder.

## Test &amp; Inspection

## Noise

## 4.2 Interior Noise Levels (Operator's Cab) - at MD-DOT Property

## 1) Preparation:

(1) Set switches on the Noise Exposure Meter.

Exchange rate setting switch	5 dB
Criterion level setting switch	90 dB
CAL-MEASURE switch	MEASURE
Low-limit level switch	85 dB

(2) Set Noise Exposure Meter in the cab, and install microphone on driver's uniform.

## 2) Measurement:

Turn on Noise Exposure Meter, and measure on normal service condition.

Recording Time 1 or 2 hours

## 3) Data Evaluation:

Noise Exposure Meter indicate the noise dose (D) automatically.

## 4.3 Exterior Noise levels - at GE Plant

## 1) Preparation:

Set Measurement instrument and microphone.

## 2) Measurement:

Air conditioning system on the test car will be operated, and turn recording instrument.

3) Noise levels recorded will be printed by Level Recorder.

## 5. Criteria

## 5.1 Interior Noise Levels (Passenger Areas)

Shall not exceed 76 dBA.

## 5.2 Interior Noise Levels (Operator's Cab)

The value of noise dose (D) shall not exceed 1.

If the value of (D) exceeds 1, the exposure exceeds permissible levels.

(This criteria is according to CFR 229.121)

## Test &amp; Inspection

## Noise

## 5.3 Exterior Noise Levels

Shall not exceed 75 dBA.

NOTE 1. Interior noise levels shall be measured on both condition of air con. ON and OFF.

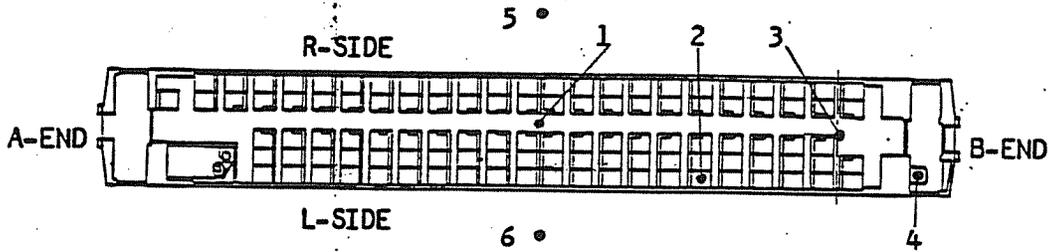
Test Report for Noise Measurement

TP-114

Date:

Checked by:

Location of Microphon



<u>MIC. No.</u>	<u>Location</u>
1	1 Foot from ceiling.
2	1 Foot from side wall and 4 feet from floor.
3	Above truck center and 1 foot from floor.
4	On the driver's uniform.
5	50 Feet from the centerline of the roadway.(R side)
6	50 Feet from the centerline of the roadway.(L side)

<u>LOCATION</u>		<u>CRITERIA</u>	<u>MIC. No.</u>	<u>RESULT</u>	<u>REMARKS</u>
Interior Noise Levels	Passenger Area	Not exceed 76 dBA	1		Test Date:  Test Car:  Location:
			2		
			3		
	Operator's Cab	The value of noise dose (D) shall not exceed 1.	4	D= Measuring Time. min.	
Exterior Noise Levels		Not exceed 75 dBA	5		Test Date:  Test Car:  Location:
			6		

## Detailed Test Plan

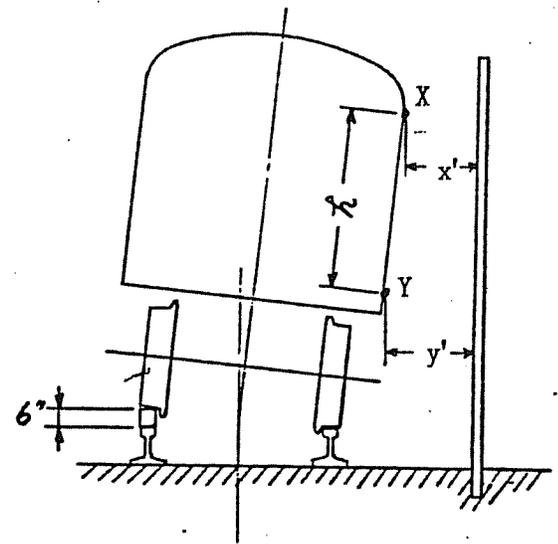
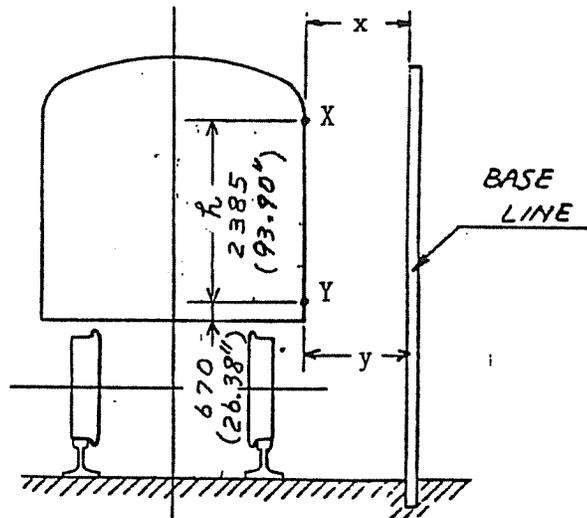
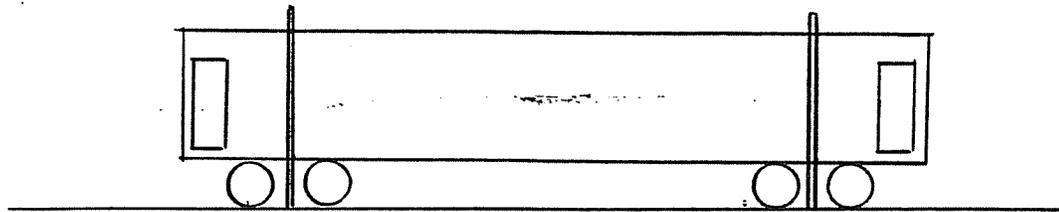
TP-115-1/2  
Date: May 14, '85

Test & Inspection	Clearance Check		
Specification	2.1.9(j)	Frequency	One Time
Test location	GE Plant	Train consist	First Cab Car
<p>1. Purpose of Test To check the car body clearance.</p> <p>2. Test Prerequisites</p> <p>2.1 Car body clearance check shall be performed on lean condition.</p> <p>2.2 Car condition:</p> <p style="margin-left: 20px;">1) Full loaded condition (33,000lbs)</p> <p style="margin-left: 20px;">2) Air spring deflated.</p> <p>3. Equipment Required</p> <p>3.1 Basic line pole</p> <p>3.2 Hydraulic jacks with oil pump.</p> <p>3.3 Spacing blocks (height 6 inches)</p> <p>3.4 Dead weight (33,000 lbs)</p> <p>3.5 Measuring scale</p> <p>4. Test procedure</p> <p>4.1 Preparation:</p> <p style="margin-left: 20px;">1) Load dead weight in the test car.</p> <p style="margin-left: 20px;">2) Set up the test car on the level tangent track.</p> <p style="margin-left: 20px;">3) Set up the basic line pole.</p> <p>4.2 Measurement:</p> <p style="margin-left: 20px;">1) Jack up the 4 wheel treads one side of the car 6 inches in height.</p> <p style="margin-left: 20px;">2) Measure the horizontal distance between the basic line pole and set point of the car body.</p>			
<p>Remarks This test will be performed along with the stability test. Rev. July 31, 1985</p>			

Test & Inspection

Clearance Check

4.3 Location of basic line pole



5. Criteria

Car body must not exceed the lean allowance line.

NOTE: The final test result will be submitted from the design department of Nippon Sharyo.

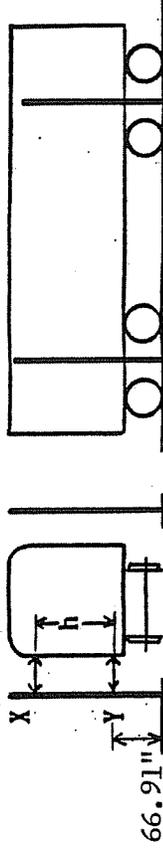
Test Result

for

Clearance Check

TP-115

R L A-End B-End



Date Tested : \_\_\_\_\_

Car No. : \_\_\_\_\_

Unit : Inch

Description	Right-Hand Side		Left-Hand Side		Remarks
	A - End	B - End	A - End	B - End	
Lateral Displacement	X	Y	X	Y	
before					
after					
Result					
					Degree (h=67.52")

## Detailed Test Plan

TP-150-1/2

Date: May 14, '85

<b>Test &amp; Inspection</b>	Curve Negotiation and Truck clearance		
<b>Specification</b>	2.1.9(o)1	<b>Frequency</b>	One Time
<b>Test location</b>	GE plant & MDOT Property	<b>Train consist</b>	Two or More Cars

**1. Purpose of Test**

To check the truck clearance, operation of air hoses and electrical jumpers and coupler function.

**2. Test Prerequisite**

- 2.1 Check two or more coupled cars, as may be determined by the engineer.
- 2.2 Check shall be performed on a 250 ft. radius curve and on a No. 8 crossover having 12 ft. track centers.
- 2.3 Empty car.

**3. Equipment Required**

Locomotive  
Location to be determined.

**4. Test Procedure**

- 1) Car moved thru the 250 ft. radius curve and No. 8 crossover.
- 2) Check the truck clearance between truck and car body.
- 3) Check the movement of B.C. hoses.
- 4) Check the movement of ground wire and speed sensor cable between truck and car body on each truck.
- 5) Check the movement of axle generator cable and ATC receiver between truck and car body on cab front truck.
- 6) Check the movement of trainline air hoses and electrical jumpers.
- 7) Check the mechanical coupler function.

Remarks Rev. July 31, 1985  
Jan. 14, 1986

## Test &amp; Inspection

## Curve Negotiation and Truck clearance

## 5. Criteria

## 1) Truck clearance

(1) Horizontal clearance between truck and car body.

$$A + B = 68.1 \text{ mm (2.681")}$$

A: Horizontal movement of Air Spring 30 mm (1.181")

B: Minimum clearance 38.1 mm (1.5")

Not less than 70 mm (2.75")

(2) Vertical clearance between wheel and car body.

$$A + B + C = 120.1 \text{ mm (4.728")}$$

A: Deflection of Axle Spring 47 mm (1.850")

B: Deflection of Air Spring 35 mm (1.378")

C: Minimum clearance 38.1 mm (1.5")

Not less than 121 mm (4.75")

(3) Vertical clearance between truck frame and car body.

$$A + C = 73.1 \text{ mm (2.878")}$$

A: Deflection of Air Spring 35 mm (1.378")

B: Minimum clearance 38.1 mm (1.5")

Not less than 75 mm (2.95")

## 2) Other items

Confirmation

TP-150

CURVE NEGOTIATION AND TRUCK CLEARANCE (1/1)

No.	DESCRIPTION	RESULT	REMARKS
1.	On 250 ft radius curve	PASS/FAIL	At GE
2.	On No. 6 cross-over	PASS/FAIL	At GE
Note: No. 6 cross-over is located at outlet of General Electric Company.			
3.	On No. 8 cross-over	PASS/FAIL	At IVY CITY YARD

Note: No. 8 cross-over is located at South of bridge near IVY CITY COACH YARD.

# Detailed Test Plan

TP-151-1/1  
Date: Jun 5, 1985

Test & Inspection	Clearance At-actual-line Check		
Specification	None	Frequency	First Car
Test location	M-DOT Property	Train consist	One Car
<p>1. Purpose of Test</p> <p>To verify clearance between projecting appurtenances of car and construction of wayside.</p> <p>2. Test Prerequisite</p> <p>2.1. The car shall be carried to a place assigned by M-DOT.</p> <p>3. Equipment required</p> <p>A tape measure</p> <p>4. Test Procedure</p> <p>4.1. Measure the dimensions between projecting appurtenances of car and construction of wayside.</p> <p>5. Criteria</p> <p>Confirmation</p>			
<b>Remarks</b>			

# Detailed Test Plan

TP-152-1/1

Date: Jan. 23, 1986

<b>Test &amp; Inspection</b>	Compatibility Test		
<b>Specification</b>	2.1.9.(a)	<b>Frequency</b>	All Cars
<b>Test location</b>	MD-DOT Property	<b>Train consist</b>	F40 + MARC II AMFLEET I + MARC II
<ol style="list-style-type: none"> <li>1. Purpose of Test To confirm the compatibility between MARC II car and F40/AMFLEET I car.</li>   <li>2. Test Prerequisites Couple MARC II car with F40 and connect jumper cables (power and control) Test with AMFLEET I car is one time test.</li>   <li>3. Equipment Required F40 locomotive , Jumper cables for coupling with locomotive AMFLRRT I car , Jumper cable for coupling with AMFLEET</li>   <li>4. Test Procedure               <ol style="list-style-type: none"> <li>4.1 Couple MARC II car with F40 (AMFLEET I).</li> <li>4.2 Connect air hoses between cars.</li> <li>4.3 Connect power cables between cars.</li> <li>4.4 Connect control jumper cables between cars.</li> <li>4.5 Supply power trainline.</li> <li>4.6 All the switches and valves shall be in normal operating position.</li> <li>4.7 Check locomotive control trainline by operating the equipments in operating compartment.</li> <li>4.8 Check door control/communication trainline between MARC II car and F40 (AMFLEET I).</li> <li>4.9 Check brake application function.</li> </ol> </li>   <li>5. Criteria Confirmation.</li> </ol>			
<b>Remarks</b>			

TEST REPORT for COMPATIBILITY TEST TP-152 (1/1)

(Coupled with F40 locomotive at \_\_\_\_\_ )

(Coupled with AMFLEET 1 at \_\_\_\_\_ )

Car No. \_\_\_\_\_

Date: \_\_\_\_\_

MD-DOT: \_\_\_\_\_

NS: \_\_\_\_\_

No.	Description	Criteria	Result	Remarks
1.	Loco. control trainline	Confirmation	PASS/FAIL	
2.	Door/Communication Trainline	"	PASS/FAIL	
3.	Brake Application	"	PASS/FAIL	

# Detailed Test Plan

TP-155-1/3

Date: Jan. 23, 1986

<b>Test &amp; Inspection</b>	Heating Test (Qualification Test)		
<b>Specification</b>	2.1.9.(h).1	<b>Frequency</b>	One Time (Cab Car)
<b>Test location</b>	MD-DOT Property	<b>Train consist</b>	Not Specified

1. Purpose of Test

To confirm that heating system maintains car interior temperature properly in cold ambient temperature.

2. Test Prerequisites

- 2.1 Adjusting plates for fresh air inlets and air diffuser shall be set properly.
- 2.2 480 volts power supplied.
- 2.3 This test shall be performed on a cold day no later than Feb.1,1986 at a place mutually agreed upon by MD-DOT and NS.

3. Equipments Required

Automatic Recorder with 28 thermo sensors	YOKOGAWA Type 4088
Clamp Type Ammeter with output terminal	HIOKI Type 3107-01

4. Test Procedure

- 4.1 Set the car at a place test will be performed.
- 4.2 Supply 480 volts power to the car, and precheck the function of heating system.
- 4.3 Set thermo sensors (refer to attached sheet) and other instruments, and check each instruments function.
- 4.4 Turn the breakers off, (breakers for overhead heaters and floor heaters) and keep all doors open to soak the car in cold ambient temperature.
- 4.5 After car interior temperature have leveled off, start recording equipments, then close all doors, and turn the breakers on (breakers for all heaters).
- 4.6 Measurement shall be continued untill interior temperature stabilizes.

**Remarks**

## Test &amp; Inspection

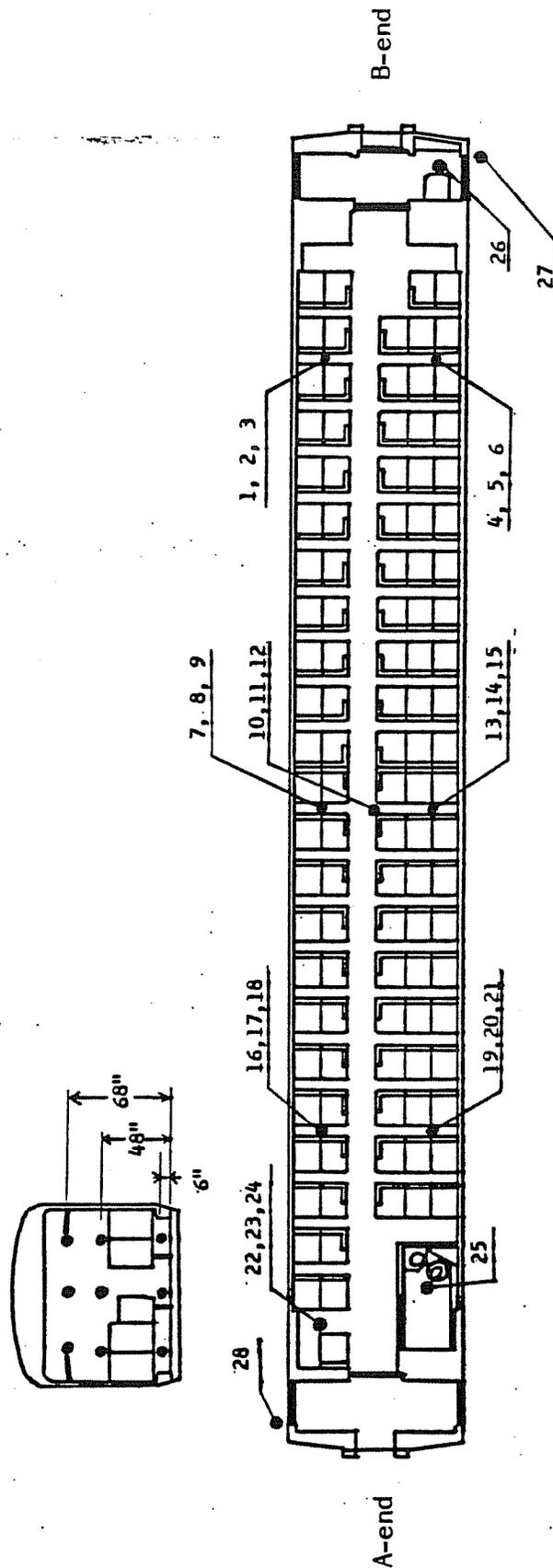
## Heating Test (Qualification Test)

- 4.7 All ventilating equipment shall be in normal operating condition.
- 4.8 In addition to temperatures, commands for overhead heater and floor heater shall be recorded to monitor heating control signal.
5. Criteria
- 5.1 The temperature in the operating compartment with side windows closed shall be no more than 5 degrees F lower than the passenger area temp.
- 5.2 At any given point between the low ceiling sections, and at least 12 inches from the ceiling and 6 inches from the floor and walls, throughout the cycling of the heating apparatus, the variations in interior temperatures shall be at most  $\pm 2$  degrees F.
- 5.3 At any given time except during warm-up, between any point approximately 48 inches above the floor and the corresponding point 6 inches above the floor in the vertical plane, the variations in temperatures shall be at most  $\pm 2$  degrees F.
- 5.4 The interior temperature at any given time except during warm-up, at any point from one end of the car to the other, shall be no less than 66 degrees F and no more than 70 degrees F.

Note : Temperature measuring points are indicated on next page.

Test & Inspection

Heating Test (Qualification Test)

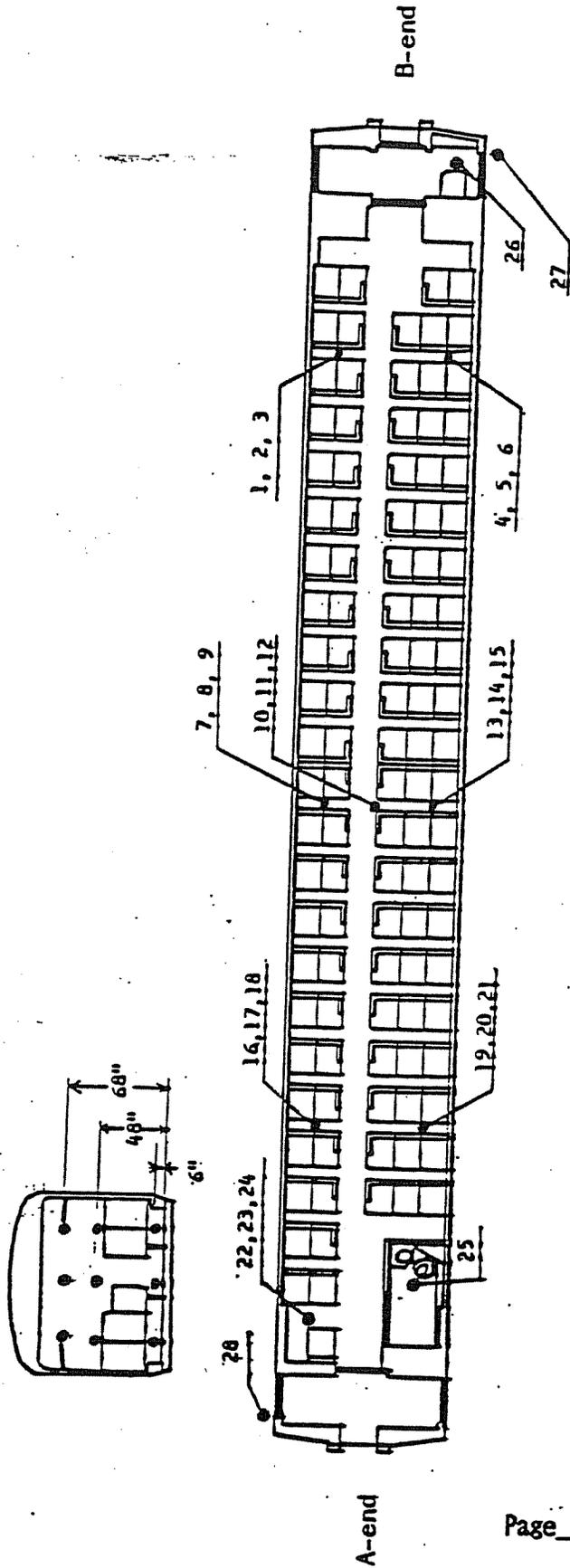


MEASURING POINTS OF HEATING TEST



TP-155  
TEST REPORT for HEATING QUALIFICATION TEST (2/2)

CAR No. \_\_\_\_\_



MEASURING POINTS OF HEATING TEST

## Detailed Test Plan

Date: May 17, '85

<b>Test &amp; Inspection</b>	Defroster Test (Qualification)		
<b>Specification</b>	2.1.9.(h).4.	<b>Frequency</b>	One Time
<b>Test location</b>	MD-DOT Property	<b>Train consist</b>	Not Specified

**1. Purpose of Test**

To confirm the distribution of temperatures at surface of windshield.

**2. Test Prerequisites**

480 volts power supplied.

This test shall be performed on a cold day (at same time as heating test).

**3. Equipment Required**

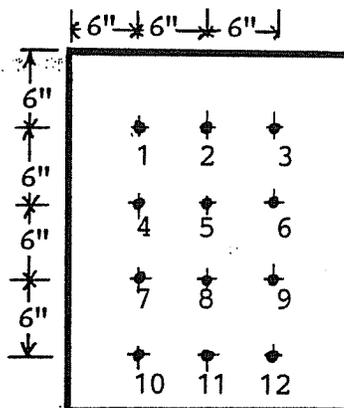
Digital temperature tester -- YOKOGAWA Model 2542

**4. Test Procedure**

- 4.1 Soak windshield in cold ambient temperature.
- 4.2 After temperature at surface of windshield have leveled off, apply power to defroster.
- 4.3 Measure the temperatures at surface of windshield on every 10 minutes, untill the temperatures level off.

**5. Criteria**

The distribution of temperatures shall be uniformly.



Measuring points are as indicated  
left: 12 points.

**Remarks** REV. Jan. 23, 1986

TEST REPORT for DEFROSTER TEST (1/2)

CAR No. \_\_\_\_\_

DATE: \_\_\_\_\_

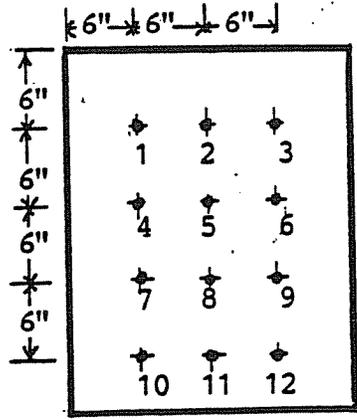
MD-DOT: \_\_\_\_\_

NS: \_\_\_\_\_

No	Description	Criteria	Result	Remarks
1	Temperature stabilized Measuring point #1 #2 #3 #4 #5 #6 #7 #8 #9 #10 #11 #12	Warmed uniformly	 _____ °F _____ °F	

TEST REPORT for DEFROSTER TEST (2/2)

CAR No. \_\_\_\_\_



Measuring points are as indicated  
left: 12 points.

# Detailed Test Plan

TP-156-1/1  
Date: May 14, '85

Test & Inspection	Trainline Voltage Drop Test		
Specification	2.9.8	Frequency	One Time
Test location	MD-DOT Property	Train consist	11 Cars

## 1. Purpose of Test

To confirm voltage drop through 11 cars.

## 2. Test Prerequisite

2.1 11 cars are coupled into one train, and each equipment on each car is in normal operating condition.

2.2 480 volts power is supplied from the end of train.

## 3. Equipment Required

Voltmeter, ; SOAR Type ME-524

## 4. Test Procedure

4.1 Turn 480 volts power on.

4.2 Measure voltage of 480 volts power trainline at the tail end of train.

## 5. Criteria

Voltage drop shall not exceed 20 volts.

Remarks

TEST REPORT for TRAINLINE VOLTAGE DROP TEST (1/1)

CAR No. Listed below

DATE: \_\_\_\_\_

MD-DOT: \_\_\_\_\_ NS: \_\_\_\_\_

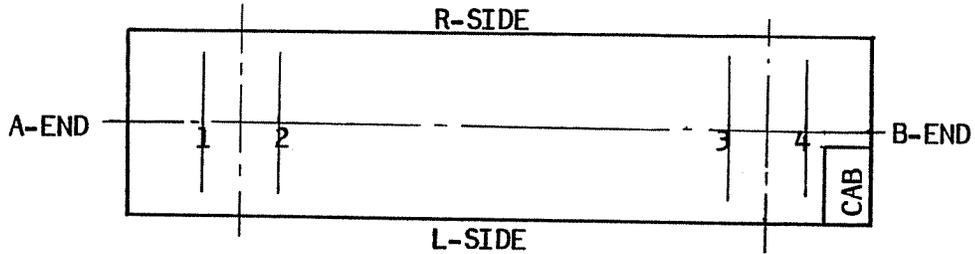
No	Description	Criteria	Result	Remarks
1	Power trainline voltage at the car next to locomotive #TL1 - #TL2 #TL2 - #TL3 #TL3 - #TL1		_____ volts _____ volts _____ volts	The train is consisted of
2	Power trainline voltage at the tail end car #TL1 - #TL2 #TL2 - #TL3 #TL3 - #TL1		_____ volts _____ volts _____ volts	
3	Voltage drop #TL1 - #TL2 #TL2 - #TL3 #TL3 - #TL1	Less than 20 V Do. Do.	_____ volts _____ volts _____ volts	

MAJOR SUBASSEMBLY CONFIGURATION RECORD-(1/3)

Car No. \_\_\_\_\_

Date: \_\_\_\_\_

Checked by: \_\_\_\_\_



Name of Component	Drawing No.	Manufacturer	Position	Serial No.	Car	
					C	T
Mechanical Coupler	B0331B15125	BUCKEYE STEEL CASTING	A		X	X
			B			
Main Reservoir	M0131C300093	WESTINGHOUSE AIR BRAKE DEVISION	A		X	
			B			
Supply Reservoir	M0131C30096	ditto.			X	X
26-C Brake Valve	M0131C30091	ditto.			X	
26-C Control Valve	M0131C30094	ditto.			X	X
FA-4 Magnet Valve	M0131C30111	ditto			X	
XB1 Variable Load Valve	M0131D18755	ditto			X	X
C-3 Decelostat Valve	M0131C30107	ditto	A		X	X
			B			

MAJOR SUBASSEMBLY CONFIGURATION RECORD-(2/3)

Date: \_\_\_\_\_

CAR No. \_\_\_\_\_

Checked by: \_\_\_\_\_

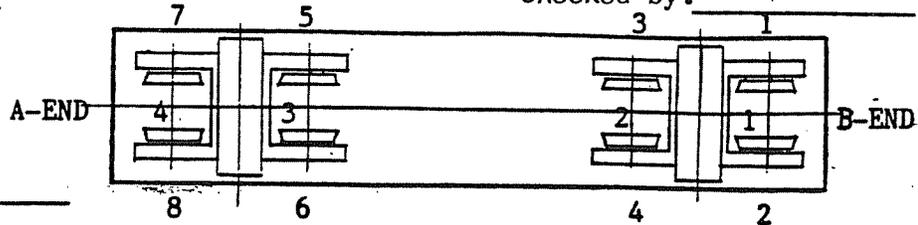
	Drawing No.	Manufacturer	Position	Serial No.	Car	
					C	T
Overhead Evaporator Blower Unit	V0335B11432	STONE SAFETY	A-end		X	X
			B-end			
Decelostat Controller Box	V0535C13617	WABCO			X	X
Door Operator Unit	V0335B10926	VAPOR	A-end	R		X
				L		
	V0335B10927		B-end	R		
				L		
Door Control Relay Panel	V0335C13834	VAPOR	A-end		X	X
	V0335C13835		B-end			
Master Door Controller	V0335C13832	VAPOR	A-end	R		X
				L		
	V0335C13833		B-end	R		
				L		
PA Amplifier	V0435D13994	MIDWEST			X	X
Conductor Control Head	V0435D13995	MIDWEST	A-end		X	X
			B-end		X	
Operator Control Head	V0435C13838	MIDWEST			X	
Train Radio Unit	V0435D12451	MOTOROLA			X	
Cab Signal Equipment	V0335B11435	US&S			X	
Aspect Display Unit	V0335C13830	US&S			X	
Master Controller	V0335C13836	NYAB			X	
Cab Heater	V0635C13848	PRIME	cab side		X	
			opp.side			
Temperature Control Box	V0335B11430	STONE SAFETY			X	X
Compressor Condenser Unit	V0335B11431	STONE SAFETY			X	X
Transformer	V0335E10544	WELCO	1		X	X
			2			
			3			
Battery Charger	V0135B11343	McGRAW-EDISON			X	X
Axle Generator	V0535C13844	US&S			X	
Track Receiver	V0535C13843	US&S	right		X	
			left			

MAJOR SUBASSEMBLY CONFIGURATION RECORD-(3/3)

Date: \_\_\_\_\_

Car No. \_\_\_\_\_

Checked by: \_\_\_\_\_



CAR No. \_\_\_\_\_

NO.	Name of component	Drawing No.	Manufacturer	Serial No.		Remarks
				A - END	B - END	
1	Truck Frame	T1636B11670	NSSK	2	1	
2	Bolster	T1836A10040	NSSK	2	1	
3	Wheel & Axle Ass'y	T1136C12856	NSSK	3	1	
				4	2	
4	Axle	T1136C12704	SMI	3	1	
				4	2	
5	Wheel	T1136C12703	SMI	5	1	
				6	2	
				7	3	
				8	4	
6	Disc & Hub	T1936B11744	WABCO	5	1	
				6	2	
				7	3	
				8	4	
7	Bearing	T1236C12706	NTN	5	1	
				6	2	
				7	3	
				8	4	
8	Tread Brake Unit GB-4 1/2 GB-4 1/2H	T1936B11656 T1936B11657	WABCO	5	1	
				6	2	
				7	3	
				8	4	
9	Disc Brake Cylinder ( 8" )	T1936B11655	WABCO	5	1	
				6	2	
				7	3	
				8	4	
10	Oil Damper(L)	T1836C11544	KAYABA	2	1	
11	Oil Damper(V)	T1836C12858	KAYABA	3	1	
				4	2	

**ATTACHMENT C**  
**Addendum No. 10**  
**MARC 180 Day MAP Form**

**Commuter  
180-Day Inspection (CFR 49 – 238.307)**

Car Number	Location	Date	COT&S Date
MARC/VRE (circle one)			

**Inspect in compliance with CFR Title 49, Rule 238.307**

**\*\*\*\*\* Note: Record All Defects on Map 9 \*\*\*\*\***

Task	Signature of QMP Performing Task
1) a. Inspection of seats and seat attachments. Components must not be loose, broken or worn. b. Inspection of cab seats, seat attachments and mounts must not be loose, broken or worn.	a. _____ b. _____
2) a. Inspection of Luggage Racks. Components must not be broken or loose.	a. _____
3) a. Inspect all side and end doors, door closers for binding, rubbing, and examine weather stripping for proper sealing. b. Inspection of all sliding windows for binding, rubbing, and examine all weather stripping for proper sealing.	a. _____ b. _____
4) a. Inspection of all manual emergency door releases. All door releases must operate as intended on the interior and exterior of car.	a. _____
5) a. Inspect all emergency windows and emergency exit components. Area surrounding emergency exits and windows must be free of any obstructions that would hamper operation or escape during an actual emergency. Pull assigned emergency windows* in the area of the car that is due inspection.  b. <b>Left Side:</b> January February March April May June (Include "A" End Door <u>Emergency</u> Window Inspection)  c. <b>Right-Side:</b> July August September October November December (Include "B" End Door <u>Emergency</u> Window Inspection)  Re-apply and ensure each window is in place and properly labeled. *This includes body side and end door units for each area if applicable.	a. _____ b. _____ c. _____
6) a. Inspect and ensure that first aid kits, fire extinguisher and emergency tools are in place, sealed, wrapped in plastic and in date.  b. Ensure that all emergency signage is in place, visible and not worn (exterior).	a. _____ b. _____

Task	Signature of QMP Performing Task
<p>7) a. Inspect couplers and components for excessive wear (A &amp; B ends)                      Gauges used are:                      Contour Maintenance Gage #31000                      Aligning Wing Limit Gage #32600                      Contour Condemning Gage # 34100-1                      Vertical Height Condemning Limit Aligning Wing Pocket/Guard Arm Gage #44250-5                      Vertical Height Aligning Wing Pocket and Arm Gage #34101-4                      Knuckle Nose Wear and Stretch Limit Gage #34100-2A</p> <p>b. Check operating mechanism for excessive wear and to make sure it operates freely.</p> <p>c. Check clearance between the operating rod eye and the lock-lift lever – 1/8"-1/4" must be maintained.</p> <p>d. Inspect coupler shank wear against carrier. Couplers worn in excess of 1/4" in this location must be condemned.</p> <p>e. Inspect coupler height (34" to 35") on A and B end of car. Measurement to be made from the top of the rail to the center of coupler knuckle. Car to be in ready condition, with Air Bags inflated to their proper P.S.I.</p> <p>f. A-End Coupler Height _____ B-End Coupler Height _____</p>	<p>a. _____</p> <p>b. _____</p> <p>c. _____</p> <p>d. _____</p> <p>e. _____</p> <p>f. _____</p>
<p>8) a. Inspect for excessive slack in draft attachments, 1/2" max.</p> <p>b. Inspect yoke pin (shank pin), retainer, bushing, and cotter key for excessive wear.</p> <p>c. Inspect to the extent possible to make sure Waughmat springs are in alignment. There should be no signs of deterioration or wear, and no bent dividers or Waughmat plates.</p> <p>Measured Free Slack: A-End _____ B-End _____</p>	<p>a. _____</p> <p>b. _____</p> <p>c. _____</p>
<p>9) a. Inspect all trap doors, steps and locking mechanisms for proper operation. (make sure to electrically operate the automatic traps, using door controls on VRE Kawasaki coaches).</p> <p>b. Inspect diaphragm A &amp; B ends to ensure that they are in place and in good condition.</p> <p>c. Ensure that buffer and footplates are in place and aligned properly.</p>	<p>a. _____</p> <p>b. _____</p> <p>c. _____</p>
<p>10) Bolster / Truck Suspension</p> <p>a. Ensure that all binder straps and bolster rod bolts are secure.</p> <p>b. Inspect for tight or excessive bolster and side bearing clearances.</p> <p>c. Inspect for leaking and/or broken shocks.</p> <p>d. Inspect condition of brake rigging, coil springs and air bellows.</p> <p>e. Inspect operation of hand brake, verify that it is properly dated, and record _____. (make sure, visually, that lever is moving freely on Kawasaki fleet).</p> <p>f. Inspect truck frames for cracks, breaks, excessive wear, &amp; structural defects.</p>	<p>a. _____</p> <p>b. _____</p> <p>c. _____</p> <p>d. _____</p> <p>e. _____</p> <p>f. _____</p>

Task	Signature of QMP Performing Task
<p><b>11) Exterior Components</b></p> <p>a. Ensure all mechanical components are free of accumulation of grease &amp; oil.</p> <p>b. Check for secure attachment of handholds and grab irons; also check for proper clearance of the same.</p> <p>c. Check all mechanical components for cracks, breaks, excessive wear, structural defects or weakness.</p>	<p>a. _____</p> <p>b. _____</p> <p>c. _____</p>
<p><b>12) Leveling Valves</b></p> <p>a. Check load leveling valve adjustment.</p> <p>b. Check for leaking or deteriorated piping, bent adjusting rods and loose linkages, bolts and locknuts.</p> <p>c. Check for proper match on leveling valve indication, adjust as necessary, thus ensuring air bags are properly inflated.</p>	<p>a. _____</p> <p>b. _____</p> <p>c. _____</p>

Air Spring Pressures						
<b>Kawasaki</b>						
Load	AS Pressure Cab/EH - Trailer/Snack (psi) (psi)		BC at Full Service Cab/EH - Trailer/Snack +/- 2 psi +/- 2 psi		BC at Emergency Cab/EH - Trailer/Snack +/- 2 psi +/- 2 psi	
0-ASP	0	0	47	45	57	55
AW0	56	51	49	47	59	57
AW3	77	72	62	57	74	69
<b>Sumitomo - MARC II</b>						
0-ASP	All Cars 0		All Cars 31-37		All Cars 36-43	
AW0	37		35-37		41-43	
<b>Mafersa Equipment</b>						
Cab Cars - Air Spring Pressure Empty 50lbs.			+/- 2 lbs.			
Air Spring Pressure Loaded 93 lbs.			+/- 2 lbs.			
Coaches - Air Spring Pressure Empty 47 lbs.			+/- 2 lbs.			
Air Spring Pressure Loaded 80 lbs.			+/- 2 lbs.			
<b>Souder (Bombardier)</b>						
Cab Cars & Coaches - Air Spring Pressure Empty 60 lbs.			+/- 1 lb.			
Air Spring Pressure Loaded 90 lbs.			+/- 1 lb.			

**WHEEL REPORT – Refer to SMP – 28605**

**CONDEMNING LIMITS FOR PASSENGER CAR WHEELS**

Rim Thickness – 1-3/16" or less      Flange Height – 1 1/4" or more      Flange Thickness 1-3/64" or less

Pos.	Flange Height	Flange Thickness	Rim Thickness	Pos.	Flange Height	Flange Thickness	Rim Thickness
1.	_____	_____	_____	2.	_____	_____	_____
3.	_____	_____	_____	4.	_____	_____	_____
5.	_____	_____	_____	6.	_____	_____	_____
7.	_____	_____	_____	8.	_____	_____	_____

**Notes: Wheel Defect Limits**

**Flat Spots – 3/4" or more**

**Shelling or Spalling – 3/4" or more**

**Wheels – No Cracks or Breaks**

**Chip or Gouge – no more than 3/4" in length & 1/2" or more in width**

**Hollow Tread – no more 5/32 in depth**

Task	Signature of QMP Performing Task
<p><b>13) Electrical – Interior</b></p> <p>a. Test and inspect emergency lighting system by turning off main power supply in car. <b>Document how long lights stay on:</b> _____</p> <p>b. Inspect operation of PA's, intercom &amp; communication signal.</p> <p>c. Visually inspect/check operation of electrical locker contents: circuit breakers, fuses, contactors, switches, relays, overloads, equipment guards, signs, lighting fixtures and indicators. All breakers are properly marked.</p>	<p>a. _____</p> <p>b. _____</p> <p>c. _____</p>
<p><b>14) Electrical – Exterior</b></p> <p>a. Visually inspect/check trainline cables, jumpers and receptacles.</p> <p>b. Inspect battery charger and batteries, refill batteries if needed. <b>Refill batteries only to the proper level- Do Not Overfill.</b></p> <p>c. Inspect/check anti-freeze circuits.</p> <p>d. Inspect/check wheelslide controller system with air on car. <b>E-7 directions on unit lid. Below, record sensor location, found gap and adjusted gap (measurements). Clean sensor with "Electro Wash".</b></p> <p>e. Inspect/check protective covers on equipment boxes.</p> <p>f. Inspect/check wiring for defects and make sure all are secure.</p> <p>g. Inspect/check HVAC systems.</p>	<p>a. _____</p> <p>b. _____</p> <p>c. _____</p> <p>d. _____</p> <p>e. _____</p> <p>f. _____</p> <p>g. _____</p>
<p><b>15) Electrical – Switches</b></p> <p>a. Switches operating at more than 150 volts are covered and are operative from outside the cover.</p> <p>b. All switches have a means to display whether the switches are open or closed.</p> <p>c. Any switch not designed to be operated under load must be legibly marked with the voltage carried and marked with the words: <b>"Must Not Be Operated Under Load"</b></p>	<p>a. _____</p> <p>b. _____</p> <p>c. _____</p>
<p><b>16) Air Brake</b></p> <p>a. Visually inspect piping, hoses, and couplings for defects.</p> <p>b. Inspect all reservoir drain cocks, air hose angle cocks for defects and leaks.</p> <p>c. Ensure that reservoir drain cock handles are positioned so as to open and close parallel to the width of the car.</p> <p>d. Drain condensate from air reservoir. (Kawasaki has an added drain fitting on the side of the car.</p> <p>e. Test, set and release of car air brakes and brake indicators.</p> <p>f. Verify air brake date is painted on the car (tank, truck {Kawasaki} and car body center {Gallery}) and record on Map 9.</p>	<p>a. _____</p> <p>b. _____</p> <p>c. _____</p> <p>d. _____</p> <p>e. _____</p> <p>f. _____</p>

**Note: Supervisor needs to review all 4 pages of 180-Day Map Package and Map 9's**

Signature of Supervisor(s) \_\_\_\_\_ Date: \_\_\_\_\_

Signature of General Foreman \_\_\_\_\_ Date: \_\_\_\_\_





**INSTRUCTIONS**

1. **OPERATED BY:** Enter the name and code\* of the railroad primarily responsible for operating the locomotive at the time the report is placed in the locomotive. Operator changes, including dates, shall be noted in "Remarks".
2. **OWNER:** Enter the name and code\* of the owner. Changes in ownership shall be submitted as final reports.
3. **MODEL NO.:** Enter the original builder's model number.
4. **LOCOMOTIVE NO.:** Enter only the locomotive number. Include letters only if they are part of the locomotive markings. If the locomotive number is changed, include the information at the top of the form.
5. **YEAR BUILT:** Enter the year the locomotive was built or rebuilt.
6. **PROPELLED BY:** Enter Diesel-Electric (D-E), Electric (E), Mu, Mu Control Cab (MUC), Non-Mu Control Cab (NMUC), Turbo (T), Torque Converter (TC), Other (O).
7. **HORSEPOWER:** Enter horsepower rating.
8. **TYPE OF SERVICE:** Enter type of service the locomotive is assigned to when the report is placed in the locomotive.
9. Enter steam generator number(s) and safe working pressure(s).
10. Enter maximum piston travel. Enter only "Nominal" travel and do not include Manufacturers Tolerance. Also include type of AIR BRAKE.
11. Enter number of creditable calendar days the locomotive was out-of-use. Less than 30 consecutive calendar days for any out-of-use period may not be counted. Any entry "out-of-use from \_\_\_\_\_ to \_\_\_\_\_" shall be made on an inspection line and certified when a locomotive is not in use when an inspection would otherwise be due. If the locomotive is out-of-use at the end of the reporting period, complete the "To" entry with the last day of the period. The entry on the replacement report should then record the "From" as the beginning of the new period.
12. **LAST PERIODIC INSPECTION AND TESTS:** This report covers annual periods (January 1 to December 31). The report of the preceding annual period shall be retained in the locomotive until the first periodic inspection is made after January 1 of each year or until the form is replaced as required by Section 229.23(e). When a new form 6180.49A is placed in the locomotive, enter the last periodic inspection information onto the new form in item 12 and the test information in item 24. Tests that are not applicable should be noted "NA".

**INSPECTIONS AND TESTS:** Persons making the required tests and periodic inspections shall sign for the items tested or inspected. The employee's supervisor shall certify that the tests and inspections were completed.

**TESTS:** Where the carrier has chosen to fragment air brake cleaning, repairing and testing required by Sections 229.27 & 29, an air record shall be maintained in the cab of the locomotive.

18. **H&H:** Enter test pressure from the hydrostatic test. If reservoirs are drilled; enter word "Drilled".

\* **CODE:** Carriers shall enter only the code assigned by FRA to their railroad.

19. Any waivers of any type from a requirement of 49 CFR Part 229 shall be identified in block No. 19 by its waiver number or by the section number affected. Explanatory information regarding the scope and content of the waiver shall be included under "Remarks".
20. Any waiver from any FRA requirement other than a requirement of 49 CFR Part 229 shall be identified in block No.20 by its waiver number or by the part and section number affected. Explanatory information regarding the scope and content of the waiver shall be included under "Remarks".
21. Under Tests (AIR BRAKE 229.29) Fill in the number of calendar days subject air brake equipment is subjected to cleaning, repairing and testing.

**REPAIRS:** Defects not properly repaired.

**NOISE:** Enter any noise tests or related information in accordance with 49 CFR 210.31.

**REMARKS:** The carriers should enter under "Remarks" any other clarifying or explanatory information.

Public reporting burden for this information collection is estimated to average two minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a currently valid OMB control number. The valid OMB control number for this information collection is 2130-0004.



**MARYLAND TRANSIT ADMINISTRATION**

**MARYLAND DEPARTMENT OF TRANSPORTATION**

Martin O'Malley, Governor • Anthony G. Brown, Lt. Governor  
Beverley K. Swaim-Staley, Secretary • Ralign T. Wells, Administrator

TO: Holders of Contract Documents

FROM: Maryland Transit Administration  
Contract Administration Division  
6 Saint Paul Street  
Baltimore, Maryland 21202-1614

SUBJECT: Addendum No. 9  
RFP No. T-8000-0316  
Procurement of the MARC IIA Fleet Mid-life Overhaul

DATE: December 22, 2010

Issued herewith and effective this date is Addendum No.9 . The Offeror shall include acknowledgement of receipt of this Addendum in the proposal cover letter as detailed in Section II, Proposal Form, Part 8, acknowledge receipt of addenda.

**ITEM ONE**

**Change Section I SOLICITATION INFORMATION AND INSTRUCTIONS, Part A.1 Schedule of Activities, Page SI-4 to read as follows:**

“The MTA has established the following schedule for this RFP. The anticipated dates are only an estimate, and the MTA shall adjust the dates at its sole discretion.”

<u>ITEM</u>	<u>DATE</u>
RFP Issue Date	June 30, 2010
Pre-Proposal Conference and Vehicle Inspection (9:00 a.m.)	July 22, 2010
Proposal Inquiry Deadline	December 3, 2010
Closing Date for Receipt of Proposals (2:00 p.m.)	<del>January 26, 2011</del> February 15, 2011
Discussions (if held)	<del>February 2011</del> TBD
Anticipated Selection Date	TBD
Anticipated Notice to Proceed	TBD

T8000-0316

Addendum No. 9

6 Saint Paul Street • Baltimore, Maryland 21202-1614 • TTY 410-539-3497 • Toll Free 1-866-743-3682

**ITEM TWO**

Change SP Section B.20 Schedule of Activities, Page B-7 as follows:

"The MTA has established the following schedule for this RFP. The anticipated dates are only an estimate, and the MTA shall adjust the dates at its sole discretion.

<u>ITEM</u>	<u>DATE</u>
RFP Issue Date	June 30, 2010
Pre-Proposal Conference and Vehicle Inspection (9:00 a.m.)	July 22, 2010
Proposal Inquiry Deadline	<b>December 3, 2010</b>
Closing Date for Receipt of Proposals (2:00 p.m.)	<del>January 26, 2011</del> <b>February 15, 2011</b>
Discussions (if held)	<del>February 2011</del> <b>TBD</b>
Anticipated Selection Date	<b>TBD</b>
Anticipated Notice to Proceed	<b>TBD</b>

All other conditions of this RFP remain the same. Any questions may be directed to Yvon J. Dupuis, at 410-767-3591 or faxed to 410-333-4810 or by email at [ydupuis@mta.maryland.gov](mailto:ydupuis@mta.maryland.gov).

Sincerely,



Christine A. Romans  
Assistant Deputy Administrator



**MARYLAND TRANSIT ADMINISTRATION**

**MARYLAND DEPARTMENT OF TRANSPORTATION**

Martin O'Malley, Governor • Anthony G. Brown, Lt. Governor  
Beverly K. Swaim-Staley, Secretary • Ralign T. Wells, Administrator

TO: Holders of Contract Documents

FROM: Maryland Transit Administration  
Contract Administration Division  
6 Saint Paul Street  
Baltimore, Maryland 21202-1614

SUBJECT: Addendum No. 8  
RFP No. T-8000-0316  
Procurement of the MARC IIA Fleet Mid-life Overhaul

DATE: November 22, 2010

Issued herewith and effective this date is Addendum No. 8. The Offeror shall include acknowledgement of receipt of this Addendum in the proposal cover letter as detailed in Section II, Proposal Form, Part 8, acknowledge receipt of addenda.

**ITEM ONE**

Change **Section I SOLICITATION INFORMATION AND INSTRUCTIONS, Part A.1 Schedule of Activities, Page SI-4** to read as follows:

"The MTA has established the following schedule for this RFP. The anticipated dates are only an estimate, and the MTA shall adjust the dates at its sole discretion.

<u>ITEM</u>	<u>DATE</u>
RFP Issue Date	June 30, 2010
Pre-Proposal Conference and Vehicle Inspection (9:00 a.m.)	July 22, 2010
Proposal Inquiry Deadline	<del>November 12, 2010</del> <b>December 3, 2010</b>
Closing Date for Receipt of Proposals (2:00 p.m.)	<del>December 10, 2010</del> <b>January 26, 2011</b>
Discussions (if held)	<del>November 2010</del> <b>February 2011</b>
Anticipated Selection Date	<del>January 2010</del> <b>TBD</b>
Anticipated Notice to Proceed	<del>March 2010</del> <b>TBD</b>

T8000-0316

Addendum No. 8

6 Saint Paul Street • Baltimore, Maryland 21202-1614 • TTY 410-539-3497 • Toll Free 1-866-743-3682

## ITEM TWO

Delete SP Section B.11 Minority Business Enterprise, Page B-5 in its entirety and replace with the following:

### **“B.11 MINORITY/DISADVANTAGED BUSINESS ENTERPRISE**

1. It is the goal of MTA that Minority/~~Disadvantaged~~ Business Enterprises (MBE/~~DBE~~) participate in all projects. The MTA hereby notifies all Proposers that in regard to any contract entered into pursuant to this RFP, MBE/~~DBEs~~ will not be subject to discrimination on the basis of race, color, sex, or national origin in consideration for an award.
  - a. An overall DBE subcontract participation of 13 % of the total contract dollar amount has been established for this procurement.
2. A fully executed “Certified ~~MBE~~ DBE Utilization and Fair Solicitation Affidavit” and “~~MBE~~ DBE Participation Schedule” shall be submitted with the Technical Proposal. Failure to submit the required documents with the Offer shall result in the Proposer’s Proposal as being not reasonably susceptible of being selected for award.
3. ALL ~~MBE~~ DBE FIRMS PROPOSED MUST BE CERTIFIED BY MDOT AT THE TIME OF SUBMITTAL OF PROPOSAL. This process takes an average of six months. By submitting a response to this RFP, the Proposer agrees that, as a minimum, this percentage of the contract price will be allocated to ~~MBE~~ DBEs.
4. ~~MBE~~ DBE Participation in work performed under this contract will be monitored by the State and must be in accordance with Exhibit E (Section IV-Proposal Exhibits).
5. Questions or concerns regarding the ~~MBE~~ DBE requirements of this solicitation must be raised before the opening of bids or receipt of initial proposals.
6. A current directory of MBE/~~DBEs~~ is available through the Maryland State Department of Transportation, Office of Minority Business Enterprise, P.O. Box 548, 7201 Corporate Center Drive, Hanover, Maryland 21076. The phone number is 410-865-1269 or 1-800-544-6056.

The directory is also available at <http://www.mdot.state.md.us>. Select the MBE/~~DBE~~ Program label at the left side of the web site, half way down. The most current and up-to-date information on MBE/~~DBE~~ s is available via this web site.”

**ITEM THREE**

Change **SP Section B.20 Schedule of Activities, Page B-7** as follows:

"The MTA has established the following schedule for this RFP. The anticipated dates are only an estimate, and the MTA shall adjust the dates at its sole discretion.

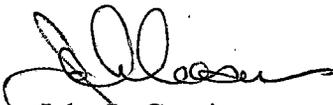
<b><u>ITEM</u></b>	<b><u>DATE</u></b>
RFP Issue Date	June 30, 2010
Pre-Proposal Conference and Vehicle Inspection (9:00 a.m.)	July 22, 2010
Proposal Inquiry Deadline	<del>November 12, 2010</del> December 3, 2010
Closing Date for Receipt of Proposals (2:00 p.m.)	<del>December 10, 2010</del> January 26, 2011
Discussions (if held)	<del>November 2010</del> February 2011
Anticipated Selection Date	<del>January 2010</del> TBD
Anticipated Notice to Proceed	<del>March 2010</del> TBD"

**ITEM FOUR**

Change **SP Section I.14 EXECUTION OF CONTRACT, Page I-6** as follows:

"After Notice of Award has been issued to an Offeror, the Administration will then forward within ten (10) **business** days the formal Contract forms for execution. The Offeror shall then execute the Contract Forms and return them to the Administration within ten (10) **business** days after receipt of same."

All other conditions of this RFP remain the same. Any questions may be directed to Yvon J. Dupuis, at 410-767-3591 or faxed to 410-333-4810 or by email at [ydupuis@mta.maryland.gov](mailto:ydupuis@mta.maryland.gov).

  
John D. Cousins  
Deputy Director  
Procurement Division



MARYLAND TRANSIT ADMINISTRATION

MARYLAND DEPARTMENT OF TRANSPORTATION

Martin O'Malley, Governor • Anthony G. Brown, Lt. Governor  
Beverley K. Swaim-Staley, Secretary • Ralign T. Wells, Administrator

TO: Holders of Contract Documents

FROM: Maryland Transit Administration  
Contract Administration Division  
6 Saint Paul Street  
Baltimore, Maryland 21202-1614

SUBJECT: Addendum No. 7  
RFP No. T-8000-0316  
Procurement of the MARC IIA Fleet Mid-life Overhaul

DATE: November 18, 2010

Issued herewith and effective this date is Addendum No. 7. The Offeror shall include acknowledgement of receipt of this Addendum in the proposal cover letter as detailed in Section II, Proposal Form, Part 8, acknowledge receipt of addenda.

**ITEM ONE**

The closing date for questions or inquiries on this RFP is revised to **December 3, 2010**. All questions must be in writing. **Receipt of proposals to this solicitation will be accepted until, but not after, 2:00 p.m. local time, on the revised date of January 26, 2011**, at the following location:

Maryland Transit Administration  
Procurement Department, 7<sup>th</sup> Floor  
Yvon Dupuis  
6 St. Paul Street  
Baltimore, MD 21202

**ITEM TWO**

"Answers to RFP Questions No. 2" is included as **Addendum No. 7 – Attachment A**. For your information, each questions has been assigned a unique qualifier (# column); however, the document is not sorted in numerical order, but is sorted by Specification section (i.e., first are General Questions that do not reference a specific Specification section, second are Special Provisions questions, and third are Technical Specification questions.

**ITEM THREE**

Delete **TS Section 7 Communications** in its entirety and replace with new **TS Section 7 Communications** included in **Addendum No. 7 – Attachment B**.

T8000-0316  
Addendum No. 7

6 Saint Paul Street • Baltimore, Maryland 21202-1614 • TTY 410-539-3497 • Toll Free 1-866-743-3682

**ITEM FOUR**

The sign-in sheet from the site visit at Frederick on Saturday, November 6, 2010 is included in **Addendum No. 7 – Attachment C.**

**ITEM FIVE**

Change **Section I SOLICITATION INFORMATION AND INSTRUCTIONS, Part A.1 Schedule of Activities, Page SI-4** to read as follows:

“The MTA has established the following schedule for this RFP. The anticipated dates are only an estimate, and the MTA shall adjust the dates at its sole discretion.

<b><u>ITEM</u></b>	<b><u>DATE</u></b>
RFP Issue Date	June 30, 2010
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Discussions (if held)	<del>November 2010</del> February 2011
Anticipated Selection Date	<del>January 2010</del> July 2011
Anticipated Notice to Proceed	<del>March 2010</del> October 2011”

**ITEM SIX**

Change **Section IV Proposal Exhibits, Exhibit Y - Vehicle Information Questionnaire, Items 2 and 3, Page VIQ-1** to read as follows:

- “2. ESTIMATED WEIGHT OF OVERHAULED MARC ~~HB~~ IIA TRAILER COACH pounds): \_\_\_\_
- 3. ESTIMATED WEIGHT OF OVERHAULED MARC ~~HB~~ IIA CAB CAR (pounds): \_\_\_\_\_.”

**ITEM SEVEN**

Change **SP Section A.4.3 Delivery of Vehicles and Other Deliverables, Page A-4**, first and second paragraphs, to read as follows:

“Upon completion of a pre-delivery inspection at the Contractor’s facility by the MTA and approval by the MTA for shipment, each vehicle shall be shipped directly to its operating agency (**CSX**) on a designated delivery track at **CSX’s Brunswick Yard**. The Contractor is responsible for all expenses associated with shipment and delivery of all vehicles. The contact information and address of the delivery track location is:

**MARC TRAIN SERVICE  
ATTN: Willy Minnick, MARC Train Service; 301-834-4412  
CSX Brunswick Yard  
100 S Maple Ave  
Brunswick, MD 21716”**

**ITEM EIGHT**

Insert **SP Section A.8.2 Definitions, Page A-20**, between the definitions for “RENEW” and “REQUIREMENTS” the following new definition:

**“REPLACE - Provide an OEM-approved or Administration-approved substitute for an existing component or material.”**

**ITEM NINE**

Delete **SP Section B.11 Minority Business Enterprise, Page B-5** in its entirety and replace with the following:

**“B.11 MINORITY/DISADVANTAGED BUSINESS ENTERPRISE**

1. It is the goal of MTA that Minority/~~Disadvantaged~~ Business Enterprises (MBE/~~DBE~~) participate in all projects. The MTA hereby notifies all Proposers that in regard to any contract entered into pursuant to this RFP, MBE/~~DBE~~s will not be subject to discrimination on the basis of race, color, sex, or national origin in consideration for an award.
  - a. An overall DBE subcontract participation of 13 % of the total contract dollar amount has been established for this procurement.
2. A fully executed “Certified ~~MBE~~ DBE Utilization and Fair Solicitation Affidavit” and “~~MBE~~ DBE Participation Schedule” shall be submitted with the Technical Proposal. Failure to submit the required documents with the Offer shall result in the Proposer’s Proposal as being not reasonably susceptible of being selected for award.
3. ALL ~~MBE~~ DBE FIRMS PROPOSED MUST BE CERTIFIED BY MDOT AT THE TIME OF SUBMITTAL OF PROPOSAL. This process takes an average of six months. By submitting a response to this RFP, the Proposer agrees that, as a minimum, this percentage of the contract price will be allocated to ~~MBE~~ DBEs.

**ITEM FOUR**

The sign-in sheet from the site visit at Frederick on Saturday, November 6, 2010 is included in **Addendum No. 7 – Attachment C.**

**ITEM FIVE**

Change **Section I SOLICITATION INFORMATION AND INSTRUCTIONS, Part A.1 Schedule of Activities, Page SI-4** to read as follows:

“The MTA has established the following schedule for this RFP. The anticipated dates are only an estimate, and the MTA shall adjust the dates at its sole discretion.

<b><u>ITEM</u></b>	<b><u>DATE</u></b>
RFP Issue Date	June 30, 2010
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Discussions (if held)	<del>November 2010</del> February 2011
Anticipated Selection Date	<del>January 2010</del> TBD
Anticipated Notice to Proceed	<del>March 2010</del> TBD

**ITEM SIX**

Change **Section IV Proposal Exhibits, Exhibit Y - Vehicle Information Questionnaire, Items 2 and 3, Page VIQ-1** to read as follows:

- “2. ESTIMATED WEIGHT OF OVERHAULED MARC ~~HB~~ IIA TRAILER COACH (pounds): \_\_\_\_
3. ESTIMATED WEIGHT OF OVERHAULED MARC ~~HB~~ IIA CAB CAR (pounds): \_\_\_\_\_.”

#### **ITEM TWELVE**

Change TS Section 1.2, PHYSICAL CHARACTERISTICS, Page TS 1-1 reference dimension entry for Maximum revenue operating speed as follows:

- o Maximum revenue operating speed ~~125 mph~~ 110 mph

#### **ITEM THIRTEEN**

Insert new section TS Section 2.4.2.20, End Diaphragms, Page TS 2-8 as follows:

##### **"2.4.2.20 End Diaphragms**

**The end diaphragms shall be renewed. All mounting hardware shall be renewed."**

#### **ITEM FOURTEEN**

Insert TS 2.4.3.2 Section Moldings and Trim, Page TS 2-9, first paragraph, new first and second sentences as follows:

**"All of the interior moldings and trim shall be replaced. The finish shall be similar to the trim on the MARC III cars."**

#### **ITEM FIFTEEN**

Insert new section TS Section 2.4.3.9, Luggage Racks, Page TS 2-13, as follows:

##### **"2.4.3.9 Luggage Racks**

**The luggage racks shall be removed from the car. The luggage racks shall be cleaned and inspected for damage. Safety stops shall be added to comply with 49CFR Part 238.233(b). The luggage racks shall be re-installed in the car with new hardware."**

#### **ITEM SIXTEEN**

Change TS Section 3.4.6.1 Tread and Disc Brake Units, Page TS 3-4, first sentence as follows:

**"Tread brake units, ~~and~~ disc brake actuators, and disc brake calipers shall be removed and overhauled per Section 3.4.13 to OEM instructions."**

#### **ITEM SEVENTEEN**

Delete TS Section 12.4.1 Interior Lighting, Page TS 12-2, first and second paragraphs in their entirety and replace with the following:

**"The Contractor shall renew all interior fluorescent T-12 lamps with new T-8 lamps, and shall be subject to the Administration's approval. The existing ballast, sockets and lamp clamps shall be renewed. All lenses shall be replaced with OEM lenses similar to those installed on the MARC IIB cars. All other incandescent lights shall be overhauled and tested for functionality. Dust seals and anti-rattle material shall be renewed. The Contractor is responsible for documenting the new configuration by revising the relevant existing drawings/documentation, and generating new drawings/documentation, as appropriate."**

**ITEM EIGHTEEN**

Delete TS Section 12.4.2.2 Side Indicator Lights and Platform Lights, Page TS 12-3, in its entirety and replace with the following:

"On all cars, and on both sides of the car, the Contractor shall upgrade all side indicator lights including the "Door Open," "Handbrake On," and "Bypass" (Cab cars only) indicator lights. The upgraded lights shall match the overhauled MARC IIB cars. The upgraded lights shall be within the confines of the existing indicator lights. The upgrade shall conform to all applicable FRA and APTA requirements. The system shall be weather-proof, and shall include adequate electrical safety features including surge current and over-voltage protection.

The platform lights and fixtures shall be upgraded to LED lights and shall be within the confines of the existing platform light enclosure. The upgrade shall conform to all applicable FRA and APTA requirements. The system shall be weather-proof, and shall include adequate electrical safety features including surge current and over-voltage protection.

The design and configuration of the LED indicator and platform light upgrades shall be subject to the Administration's approval. (CDRL 1207)."

**ITEM NINETEEN**

Change TS Section 15.24.4 Dip and Bake, Page TS 15-43, first sentence as follows:

"Unless otherwise specified, small electrical devices shall have their insulating properties restored by the "Dip and Bake" process. The following small motors are in this category, other devices are specified in their respective sections:

Exhaust Fan Motors

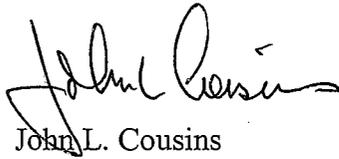
Door Operator Motors

Evaporator Blower Motors

Cab Heater Motors

Condenser Fan Motors"

All other conditions of this RFP remain the same. Any questions may be directed to Yvon J. Dupuis, at 410-767-3591 or faxed to 410-333-4810 or by email at [ydupuis@mta.maryland.gov](mailto:ydupuis@mta.maryland.gov).



John L. Cousins  
Deputy Director  
Procurement Division

Enclosures:

Attachment A – Answers to RFP Questions No. 2

Attachment B – TS Section 7 Communications

Attachment C – Frederick Site Visit Sign-in Sheet

**ADDENDUM NO. 7**  
**ATTACHMENT A**  
**Answers to RFP Questions No. 2**

## T8000-0316 MARC II FLEET MID-LIFE OVERHAUL – RESPONSES RFP QUESTIONS

#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
51	<b>General</b>	Drawings	Will the awarded contractor be provided drawings in DWG format.	The awarded contractor will not be provided with drawings in DWG format.
78	<b>General</b>	Drawings	Will the MTA provide any missing OEM drawings for the successful contractor after award to the extent they are available?	Yes, MTA will provide information after award of the contract.
86	<b>General</b>	Drawings	Request CDs with MARC IIA documents and drawings	Technical Documents and Drawing Package CDs sent on 10/4/2010
87	<b>General</b>	Drawings	Request CDs with MARC IIA documents and drawings	Technical Documents and Drawing Package CDs sent on 10/4/2010
88	<b>General</b>	Drawings	Request CDs with MARC IIA documents and drawings	Technical Documents and Drawing Package CDs sent on 10/4/2010
89	<b>General</b>	Drawings	Request CDs with MARC IIA documents and drawings	Technical Documents and Drawing Package CDs sent on 10/4/2010
91	<b>General</b>	Drawings	Request CDs with MARC IIA documents and drawings	Technical Documents and Drawing Package CDs sent on 10/4/2010
101	<b>General</b>	Drawings	Request CDs with MARC IIA documents and drawings	Technical Documents and Drawing Package CDs sent on 10/12/2010
90	<b>General</b>	Drawing Package	<p>The vendor is requesting the following drawings for the Wheel and Axle Assembly components:</p> <ol style="list-style-type: none"> <li>1. Wheel Drawing No. T1136C15038</li> <li>2. Axle Drawing No. T1136C12704</li> </ol> <p>The CDs containing the MARC IIA Technical Documents and Drawings were reviewed and the requested necessary drawings were not contained on the CDs</p>	MTA has provided all necessary drawings.
74	<b>General</b>	Drawing Package	<p>The vendor received the OEM drawings and parts catalogs which are missing many drawings and documents. Can the MTA provide the following drawings listed in the attached excel spreadsheet? [the drawings list is attached as a separate document.</p>	MTA has provided all necessary drawings.

**T8000-0316 MARC II FLEET MID-LIFE OVERHAUL – RESPONSES RFP QUESTIONS**

#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
92	<b>General</b>	Drawing Package	<p>Vendor is a subcontractor...</p> <ol style="list-style-type: none"> <li>1. Regarding the ceiling and because assembly drawing are not available, can you provide detail about the assembly behind?</li> <li>2. Can we reuse original frame and only supply new plymetal panel?</li> <li>3. Detailed pictures can be used along with BOM. Otherwise, vendor will supply the plymetal panel without assembled part on it.</li> </ol>	MTA will address these issues during design reviews.
93	<b>General</b>	Drawing Package	<p>Vendor saw on Drawing # B0131B16244 Section B-B that the plymetal edges of the ceiling are sealed using aluminum strip (included small section of drawing)</p> <ol style="list-style-type: none"> <li>1. Can you confirm that all plymetal are sealed that way? the Technical Specification 15.10.3 allows the use of aluminum strip or varnish</li> <li>2. Furthermore, how are those strips fixed to the panel? Are they glued?</li> <li>3. Finally, how the strip joint (at panel corner) are sealed?</li> </ol>	MTA will address these issues during design reviews.
94	<b>General</b>	Drawing Package	<p>The vendor needs more information on the HVAC Panel regarding potentially purchased parts:</p> <ol style="list-style-type: none"> <li>1. Is it possible to reuse original parts and only supply new plymetal panel?</li> <li>2. Can we have access to all sub drawings mentioned in both drawings?</li> <li>3. Do you have a supplier name and part number for the latch? (Item 15)</li> <li>4. Do you have a supplier name and part number for the return air grill (item 24)?</li> <li>5. What are the material used for the clip (Item 14)?</li> </ol>	<p>MTA will address these issues during design reviews. The cars will be available for inspection as scheduled in <b>Addendum No. 6, Item One.</b></p>

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#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
			<p>6. Can we use an equivalent anodize process to AMS9 (Ref item 9 and 10)</p> <p>7. How the frame is fixed to the plymetal panel in the center of it? The contour is screwed as shown below....small section of drawing</p> <p>8. Detailed pictures of the panel will be appreciated (passenger and HVAC side)</p>	
105	<b>General</b>	Drawing Package	<p>After reviewing this CD and printed drawings associated with the HVAC, we have the following questions:</p> <p>1. Two Compressor Condenser Unit drawings were found. Which represents the HVAC? Or are there 2 types on the 26-car fleet:  a. V0335B13001 – Faiveley OEM condenser  b. V0335V11431 – Stone Safety condenser</p> <p>2. Two Evaporator Blower Unit drawings were found. Which represents the HVAC? Or are there 2 types on the 26-car fleet.  a. V0335B13000 – Faiveley Evaporator Blower  b. V0335B11432 – Stone Safety Evaporator Blower</p>	<p>1. V0335V11431 – Stone Safety condenser represents the current HVAC configuration.</p> <p>2. V0335B11432 – Stone Safety Evaporator Blower represents the current HVAC configuration.</p>
162	<b>General</b>	Drawing Package	<p>The vendor cannot find anywhere in the specification where the MTA defines what they are looking to have done to the end Diaphragms (Drawing E0131D18339). Can MTA clarify this point.</p>	<b>See Addendum No. 7, Item Thirteen</b>

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#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
163	<b>General</b>	Drawing Package	<p>In the Specification there are approximately 25 occurrences where MTA requires a component to be similar to or the same as MARC IIB.</p> <ol style="list-style-type: none"> <li>1. Will the MTA be providing these details (via drawings) or does the Contactor have to reverse-engineer the details from the MARC IIB cars?</li> <li>2. And if so, when will the MTA make the MARC IIB cars available?</li> </ol>	<ol style="list-style-type: none"> <li>1. MTA will provide the information after award of the contract.</li> <li>2. <b>See Addendum No. 6, Item One.</b></li> </ol>
79	<b>General</b>	Wire List	Does the MTA have a complete wire list they can provide for both the cab and trailer cars?	MTA does not have the information.
75	<b>General</b>	Engineer's Estimate	Can the MTA provide an engineer's estimate for the overhaul workscope described in the RFP (second request)?	An Engineer's estimate cannot be provided at this time.
77	<b>General</b>	Request for Inspection (over pit)	Would it be possible to review a Marc IIA Cab and Trailer Car over a pit? The Bidder would be willing to visit Marc on a weekend if required.	<b>See Addendum No. 6, Item One.</b>
85	<b>General</b>	Request for Inspection	Request for MTA to hold another site inspection	<b>See Addendum No. 6, Item One.</b>
138	<b>Part II Proposal Form with UPS</b>	Unit Price Schedule	If the program requires hidden damage resolution greater than \$250,000, how will this be resolved?	Based on prior overhauls, the MTA does not expect to incur expenses in excess of the allotted funds.
139	<b>Part II Proposal Form with UPS</b>	Unit Price Schedule	If the program requires miscellaneous work allowance resolution greater than \$2,000,000, how will this be resolved?	Based on prior overhauls, the MTA does not expect to incur expenses in excess of the allotted funds.
140	<b>Part II Proposal Form with UPS</b>	Unit Price Schedule	<p>For Item No. 2, the "Avg. cost based on Item 2 Total Price" is requested for the UNIT PRICE.</p> <p>Please indicate how Bidder should calculate the average. For example, is it an average based on 26 units or an average based on the 13 line items?</p>	The average should be based on 26 units.
157	<b>Part IV Contract Exhibits</b>	Exhibit T FTA Clauses Section 21 Termination Pg 4 of 9	Will MTA please clarify which termination provision will apply to this procurement?	Section 21 of the FTA clauses defines what constitutes a termination. Section IV, Exhibit AA General Provisions defines the conditions, parameters, and methodology to be utilized in order to terminate a contract.

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#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
158	<b>Part IV Contract Exhibits</b>	Exhibit T FTA Clauses Section 21 Termination Pg 4 of 9	Force Majeure events should not penalize the Bidder, please consider these revisions: b. Termination for Default [Breach or Cause] (General Provision) If the Contractor does not deliver supplies in accordance with the contract delivery schedule, or, if the contract is for services, the Contractor fails to perform in the manner called for in the contract, or if the Contractor fails to comply with any other provisions of the contract, the (Recipient) may terminate this contract for default. Termination shall be effected by serving a notice of termination on the contractor setting forth the manner in which the Contractor is in default. The contractor will only be paid the contract price for supplies delivered and accepted, or services performed in accordance with the manner of performance set forth in the contract. If it is later determined by the (Recipient) that the Contractor had an excusable reason for not performing, such as a strike, fire, or flood, events which are not the fault of or are beyond the control of the Contractor, the (Recipient), after setting up a new delivery of performance schedule, may allow the Contractor to continue work, <del>or treat the termination as a termination for convenience.</del>	There will be no changes to the Specification at this time.
159	<b>Part IV Contract Exhibits</b>	Exhibit X Truth-in-Negotiation Certificate	Please clarify whether or not Bidder is required to submit Exhibit X with its proposal.	Exhibit X, Truth-in-Negotiation Certificate shall be submitted with the Price Proposal.
160	<b>Part IV Contract Exhibits</b>	Exhibit Y Vehicle Information Questionnaire	On page V1Q-1 of Exhibit Y, please confirm the MTA intended for Item 2. and 3. to be weights for the overhauled MARC IIA coach/car (not MARC IIB).	<b>See Addendum No. 7, Item Six</b>

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#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
141	<b>Part IV Contract Exhibits</b>	Exhibit AA General Provisions Section 21(1)c Termination for Default Pg 8 of 25	To clarify the Force Majeure exceptions, will MTA please consider the following revisions: c. Except with respect to defaults of subcontractors, the Contractor shall not be liable for any excess costs, <u>including liquidated damages</u> , if the failure to perform the contract arises out of cause beyond the <u>reasonable</u> control and without the fault or negligence of the contractor. Such causes may include, but are not restricted to, acts of God or the public enemy, acts of the State in either its sovereign or contractual capacity, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and unusually severe weather; <del>be and</del> in every case the failure to perform shall be beyond the <u>reasonable</u> control and without the fault or negligence of the Contractor. If the failure to perform is caused by the default of a subcontractor, and if the default arises out of causes beyond the <u>reasonable</u> control of both the Contractor and subcontractor, and without the fault of negligence of either of them, the Contractor shall not be liable for any excess costs of failure to perform, unless the supplies or services to be furnished by the subcontractor were obtainable from other sources in sufficient time to permit the contractor to meet the required delivery schedule	There will be no changes to the General Provisions at this time.
142	<b>Part IV Contract Exhibits</b>	Exhibit AA General Provisions Section 21(1)f Termination for Default Pg 8 of 25	Will MTA consider the following revisions?  f. The rights of the State as provided in this Article shall <del>not</del> be exclusive and are in <u>addition to lieu of</u> any other rights and remedies. <del>provided by law or under this contract.</del>	There will be no changes to the General Provisions at this time.

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#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
143	<b>Part IV Contract Exhibits</b>	Exhibit AA General Provisions Section 54 Suspension of Work Pg 21 of 25	Will MTA please add the following clarifications? 54. <u>Suspension of Work:</u> The procurement officer unilaterally may order the Contractor in writing to suspend, delay, or interrupt all or any part of the work for such period of time as he may determine to be appropriate for the convenience of the State. <u>The Contractor shall be reasonably compensated for any actual demobilization/mobilization costs related to such suspension.</u>	There will be no changes to the General Provisions at this time.
144	<b>Part IV Contract Exhibits</b>	Exhibit AA General Provisions Section 57 Scope of Contract Pg 22 of 25	Please add the following language: 57. <u>Scope of Contract:</u> The procurement officer has the unilateral right of the State to order in writing changes in the work within the scope of the contract, <u>subject to Section 43.</u>	There will be no changes to the General Provisions at this time.
56	<b>SP Section A Summary of Work</b>	A.4.3 Delivery of Vehicles and Other Deliverables Pg A-4	Subsection A.4.3 states the overhauled cars are to be shipped to “Amtrak on a designated delivery track at Union Station in Washington, D.C.”  1. Will the Contractor be able to access the “designated pickup & delivery track” by both rail and road? Will there be room to maneuver with equipment (trailer and ramp) to load and unload the cars from a trailer?  2. Will the Contractor be able to place the trucks on the cars at Union Station (if the cars are shipped without the trucks installed)?	<b>See Addendum No. 7, Item Seven</b>  1. Yes, at the designated pick-up area (Brunswick, MD) the Contractor will be able to gain access by rail and road and there should be room to maneuver.  2. MARC has designated Brunswick, MD as the pick-up area and yes the Contractor will be able to place the trucks on cars at Brunswick.

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#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
57	<b>SP Section A Summary of Work</b>	A.4.4 Release of Vehicles to Contractor Pg A-4	Subsection A.4.4 states “The MTA may release each vehicle from any of its maintenance shop locations.”  1. What is the name of the freight railroad that serves each shop?  2. Will the Contactor be able to access each of the maintenance shops by road to load the cars? Will there be room to maneuver with equipment (trailer & equipment) to load the cars to a trailer?  3. Will the Contractor be able to remove the trucks from the cars at each of the maintenance shops (if the cars are shipped without the trucks installed)?	See Question 56.  1. The freight railroad is CSX Transportation  2. Yes, at the designated pick-up area (Brunswick, MD) the Contractor will be able to gain access by rail and road and there should be room to maneuver.  3. Yes
49	<b>SP Section A Summary of Work</b>	A.4.4 Release of Vehicles to Contractor Pg A-4	Can the vehicles be de-trucked at the pick-up/drop-off location for shipping purposes.	Yes, the Contractor can de-truck at the pick-up/drop off location.
52	<b>SP Section A Summary of Work</b>	A.4.4 Release of Vehicles to Contractor Pg A-4	Has the location for pick-up/drop-off been determined? The locations of Brunswick, Farley [ <i>sic</i> ] and Riverside were mentioned.	<b>See Addendum No. 7, Item Seven</b>
50	<b>SP Section A Summary of Work</b>	A.4.4.1 Vehicles Out of Service Pg A-5	Can the allowance of vehicles to be out of MARC’s possession be increased to a not-to-exceed ten (10) vehicles	There will be no changes to the Special Provisions at this time.
58	<b>SP Section A Summary of Work</b>	A.8.2 Definitions Pg A-20	Throughout the Specification, the word “replace” is used. There is no definition of “Replace” within Subsection A.8.2. Please provide the definition for “replace”.	<b>See Addendum No. 7, Item Eight</b>
71	<b>Section I Solicitation Instructions</b>	B.4 Inquiries Pg SI-2	Bidder respectfully requests to extend the closing date for submitting inquiries to October 8, 2010.	<b>See Addendum No. 7, Item One</b>

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#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
76	<b>Section I Solicitation Instructions</b>	B.6 Closing Date Pg SI-2	Would the MTA extend the bid due date by and addition 30 days until November 24, 2010? This request is due in part to the late arrival of the MTA OEM documentation that must be reviewed for completeness to make our bid as responsive and competitive as possible.	<b>See Addendum No. 7, Item One</b>
72	<b>Section I Solicitation Instructions</b>	B.6 Closing Date Pg SI-2	Bidder respectfully requests to extend the closing date for proposal submittal to December 6, 2010.	<b>See Addendum No. 7, Item One</b>
84	<b>Section I Solicitation Instructions</b>	B.6 Closing Date Pg SI-2	The Bidder requests an extension of 90 days from the current procurement due date of October 22, 2010.	<b>See Addendum No. 7, Item One</b>
2	<b>SP Section B Proposal Requirements</b>	B.11.1.A Minority Business Enterprise Pg B-5	<p>“DBE” is only referred to in this sentence as the balance of this section of the Special Provisions, Exhibit E and the Solicitation Information and Instructions (Section H) refer exclusively to an MBE requirement.</p> <p>Please confirm whether or not the requirement for this overhaul project is MBE or DBE.</p>	<b>See Addendum No. 7, Item Nine</b>
3	<b>SP Section B Proposal Requirements</b>	B.11.3 Minority Business Enterprise Pg B-5	<p>This section of the Special Provisions states that “all MBE firms proposed must be certified by MDOT at the time of submittal of proposal”. This is contrary to the Solicitation Information and Instructions (Section H, page SI-5) where it states that “all MBE firms proposed must be certified by MDOT prior to contract award”.</p> <p>Please clarify.</p>	<b>See Addendum No. 7, Item Nine</b>
147	<b>SP Section F Legal Requirements</b>	F.4.1 General Warranty Pg F-3	<p>Will MTA please consider the following revisions?</p> <p>The Contractor warrants that the title conveyed under the terms of this Contract shall be good and its transfer rightful and that all goods, supplies, systems, and equipment shall be delivered free from all security interests or other liens or encumbrances whatsoever. The Contractor also hereby agrees to warrant and defend the title against all persons claiming the whole or any part thereof.</p>	There will be no changes to the Special Provisions at this time.

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#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
			<p>The Contractor warrants that all goods, supplies, systems, equipment, design, and all work covered by this Contract, including subcontractors and suppliers (except Administration-furnished equipment), shall be satisfactory for their intended purpose, shall conform to, and perform as called for in, the Contract requirements and specifications, and shall be free from all defects and faulty materials and workmanship. Any goods, supplies, systems, equipment, design, and Work <del>found</del> <u>confirmed by the Contractor</u> to be defective within the warranty period <u>set forth below</u> shall be repaired, remedied, or replaced by the Contractor, free of all charges including transportation. <del>Any latent defects discovered, including but not limited to goods, supplies, systems, equipment, design, and work shall be repaired, remedied, or replaced by the Contractor free of all charges, including transportation.</del></p> <p><u>The Contractor's duty to provide "corrective work" shall serve as the Contractor's sole obligation and the MTA's sole and exclusive remedy for defective goods, supplies, systems, equipment, design and work covered by this Contract. The foregoing warranties are provided in lieu of all other warranties, express or implied, and such other warranties are disclaimed. The Contractor's warranty obligations shall not apply to goods, supplies, systems, equipment, designs or work that are modified, misused, improperly maintained, or otherwise altered by MTA or others.</u></p>	

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#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
11	<b>SP Section F Legal Requirements</b>	F.4.1.1 Warranty Period Pg F-3	<p>The Contractor does not clearly understand what the Administration’s intent was with the following sentence: “The guarantee on parts replaced or repaired under warranty shall extend from the time of replacement or repair”.</p> <p>The Contractor interprets the above sentence to mean that any parts repaired during the warranty period will still be covered under the original warranty period of 2 years (or 1 year for overhauled parts) for the replaced part.</p> <p>Please confirm if the Contractor’s interpretation is correct.</p>	<p>There will be no changes to the Special Provisions at this time.</p> <p>The vendor’s interpretation is not correct.</p>
148	<b>SP Section F Legal Requirements</b>	F.4.9 Performance Bond Pg F-7	<p>Bidder requests clarification for the duration of the Warranty Bond. Typically, the Warranty Bond is only required during the General Warranty period, which is two-years from Final Acceptance of the last car in this case. Is this acceptable to the MTA? If not, please clarify.</p>	<p>There will be no changes to the Special Provisions at this time.</p> <p>The warranty period is as specified under Special Provisions sections F.4.1.1, F4.1.2, F.4.2, and F.4.2.1. MTA does not consider a 2-year after completion of work suitable for the warranty bond to expire and will use the warranty period specified under the references made.</p>
149	<b>SP Section F Legal Requirements</b>	F.7.4 Certificate of Insurance Pg F-8	<p>Insurance companies do not generally provide (30) days of notice for changes, therefore Bidder recommends the following revisions:</p> <p><b><u>F.7.4 Certificate of Insurance</u></b></p> <p>At all times during the period specified above, the Contractor shall maintain with the Administration a current Certificate of Insurance showing the minimum insurance as required in Section F.7.1, F.7.2, and F.7.3 and <u>shall endeavor to provide</u> 30 days written notice to the Administration by the insurance company prior to cancellation or material change in the policy coverage. The Contractor shall submit the Certificate of Insurance to the Administration at least 30 days before the planned performance of any work at the installation site.</p>	<p>There will be no changes to the Special Provisions at this time.</p>

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#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
150	<b>SP Section F Legal Requirements</b>	F.8 Rights in Technical Data Pg F-9	<p>To protect Bidder’s rights in its IP and proprietary information, please revise this paragraph as follows:</p> <p>Technical data means any and all information of a scientific or technical nature, regardless of form or characteristics, to be furnished by the Contractor pursuant to this Contract. It includes, but is not limited to, development or engineering work plus the information used to define a design or process or to procure, produce, support, maintain, or operate the goods, supplies, systems, and equipment furnished hereunder. Examples of technical data include research and engineering data, proprietary software, production drawings, engineering drawings and associated lists, specifications, standards, process sheets, manuals, technical reports, catalog item identifications, and related information.</p> <p><u>The Contractor shall retain exclusive ownership of all technical data.</u> The Administration, <u>and its employees and consultants,</u> shall have the unlimited right to use, duplicate and disclose, in whole or in part and without charge, all technical data, in any manner and for any purpose <u>only</u> when, in the opinion of the Administration, such use is required <u>by the Administration in for</u> the installation, operation, modification, maintenance, repair, replacement, overhaul, or training involved with the MARC IIA car and its system, subsystem, equipment, or LLRU. <u>The Administration shall not disclose any of Contractor’s confidential or proprietary information to any third party without Contractor’s express written consent in each instance.</u></p>	There will be no changes to the Special Provisions at this time.

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#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
151	<b>SP Section F Legal Requirements</b>	F.10 Indemnity Pg F-11	<p>To provide reasonable limits to Bidder’s liability, will MTA please consider the following revisions?</p> <p><b>F.10 INDEMNITY</b> In lieu of General Provision 13, General Indemnity, the Contractor shall indemnify and save harmless the Administration, and its officers, agents and employees, from any and all claims, demands, suits, loss, damage, injury and liability, including costs and expenses incurred in connection therewith, <del>resulting from, to the extent arising out of, or in any way connected with</del> the Contractor’s performance of the Contract, including delivery and any loading of supplies and equipment. Such indemnification shall not be construed to include damages or injuries arising or occurring from the <del>sole</del> negligent acts of the Administration, its officers, agents and employees.</p> <p><b><u>F. 11 Disclaimer of Damages</u></b> <u>Under no circumstances shall the Contractor be liable to the MTA for indirect, consequential, incidental, punitive or other special damages, regardless of the likelihood or foreseeability of the same.</u></p>	There will be no changes to the Special Provisions at this time.
155	<b>SP Section H Measurement and Payment</b>	H.5.4 Release Claims Pg H-7	<p>Please delete this section as it forces a Bidder to waive legitimate claims simply to get paid. In the alternative, lengthen the time to one-year, or use half the applicable period of statute of limitations, or such other reasonable amount of time.</p> <p><b><u>Section H.5.4 Release Claims</u></b> <del>As a condition precedent to final payment the Contractor shall execute a general release of all claims against the Administration arising out of or in any way connected with the Contract.</del></p>	There will be no changes to the Special Provisions at this time.
156	<b>SP Section H Measurement and Payment</b>	H.5.5 Fixed Price Pg H-7	<p>The language below is a commonly used escalation provision for the locomotive industry. Bidder requests inserting an escalation provision as set forth below.</p> <p><b>H.5.5 Fixed Price</b> The price quoted by the Offeror and accepted by</p>	There will be no changes to the Special Provisions at this time.

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#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
			<p>the Administration shall be fixed for <u>one year the duration of the contract, after which deliverables will be and not subject to adjustment the following escalation:</u></p> <p><u>Pricing shall be subject to escalation due to changes in indices from the NTP date for the base order to the latest published indices on the date Equipment is scheduled to be delivered. For purposes of escalation, prices shall be adjusted based on changes between; (a) the final data for the indices described in A, B, and C for the contractually agreed base month (NTP date for the base contract) and (b) the final data for such indices in the month with respect to which a price adjustment is calculated. The indices cited are those reported by the U.S. Bureau of Labor Statistics.</u></p> <p><u>(A) 25% of the Price will be adjusted based on the percentage increase (but not adjusted by any decrease) in the AAR Cost index Table C West for labor.</u></p> <p><u>(B) 65% of the Price will be adjusted based on the percentage increase (but not adjusted by any decrease) in the US Producer Price Index Table 8 “Industrial Commodities Excluding Fuels and Electrical Power” (Series I.D. wpu03t15m05 at <a href="http://www.bls.gov">www.bls.gov</a>).</u></p> <p><u>(C) 10% of the Price will be adjusted based on the percentage increase (but not adjusted by any decrease) in the US Producer Price Index “Commodities Group Metals and Metal Products” (Series I.D. wpu101 at <a href="http://www.bls.gov">www.bls.gov</a>).</u></p>	

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			<p><u>The labor index mentioned in paragraph A, the material index mentioned in paragraph B and the metal commodity index mentioned in paragraph C shall be the latest published in final indices available at the time of any new option order.</u></p> <p><u>If the Government discontinues publishing or revises its method of determining and selecting indicators listed above, including a change of the base period or the classification of labor or commodities contained in such indices, the parties shall agree on a substitute indicator or an appropriate method of adjusting the Base Value (or, if the Base Value has, at that time already been adjusted, the adjusted value (the “Revised Pricing Value”) to provide a comparable index.</u></p> <p><u>In determining any adjustment of the price, the percentage of the increase shall be calculated and rounded off to the nearest tenth of one percent (1/10%).</u></p>	

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#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
19	<b>SP Section I Contract Award and Evaluation</b>	I.14 Execution of Contract Pg I-6	<p>Would the Administration consider extending the length of time allotted to the Contractor to provide all documents to ten (10) business days, as ten days is a short period of time to obtain some of these documents, such as the bonding and insurance documents, which documents are issued by Surety or Insurance companies, hence obtaining them is not under Contractor’s sole control.</p> <p>“I.14 Execution of Contract After Notice of Award has been issued to an Offeror, the Administration will then forward within ten (10) days the formal Contract forms for execution. The Offeror shall then execute the Contractor Forms and return them to the Administration within ten (10) <u>business</u> days after receipt of same.”</p>	<b>See Addendum No. 7, Item Eleven</b>
106	<b>TS Section 1 System Requirements</b>	1.2 Physical Characteristics Pg TS 1-1	Weight: Will scale weight tickets confirming the AWO weights for the Cab Car and Trailer Car be available for review for the bidders?	No. The average as-built cab and trailer car weights are provided in TS Section 1.2 Physical Characteristics. The requirements pertaining to weight are stated in TS Section 18.6 Weight Control Program.
107	<b>TS Section 1 System Requirements</b>	1.2 Physical Characteristics Pg TS 1-1	Maximum (Revenue) Operating Speed: As indicated, 125 mph is the maximum operating speed. Can the specified speed for the cars be confirmed to meet current FRA requirements at 125 mph + 10 mph, with supporting test reports?	<b>See Addendum No. 7, Item Twelve</b> The cars are not required to be re-qualified.
108	<b>TS Section 1 System Requirements</b>	1.2 Physical Characteristics Pg TS 1-1	Maximum (Revenue) Operating Speed: As indicated, 125 mph is the maximum operating speed. If the cars have not previously been tested to meet current FRA requirements at 125 mph + 10mph, with supporting test reports, does this overhaul program require bidders include instrumented wheel sets and a 125 mph +10 mph test program on the North East Corridor (NEC)?	No. Instrumented wheel sets are not required.

**T8000-0316 MARC II FLEET MID-LIFE OVERHAUL – RESPONSES RFP QUESTIONS**

#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
109	<b>TS Section 1 System Requirements</b>	1.2 Physical Characteristics Pg TS 1-1	Trucks (wheelbase): As indicated, 125 is the maximum operating speed. Can the specified speed for the trucks be confirmed to meet current FRA requirements at 125 mph +10 mph, with supporting test reports.	<b>See Addendum No. 7, Item Twelve</b> The cars are not required to be re-qualified.
110	<b>TS Section 1 System Requirements</b>	1.8.1 Interior Noise Levels (Passenger Areas) Pg TS 1-5	1. Were these cars originally built to meet specified requirements? 2. If so, will test data be available for bidders?	1. The cars were originally built to the specification requirements at that time. 2. Any information MTA has will be provided after award of the contract.
111	<b>TS Section 1 System Requirements</b>	1.8.1 Interior Noise Levels (Passenger Areas) Pg TS 1-5	Will recent test data be available for bidders to confirm that the cars can currently meet these requirements?	Recent test data is not available.
112	<b>TS Section 1 System Requirements</b>	1.8.2 Exterior Noise Levels Pg TS 1-5	1. Were these cars originally built to meet specified requirements? 2. If so, will test data be available for bidders?	1. The cars were originally built to the specification requirements at that time. 2. Any information MTA has will be provided after award of the contract.
113	<b>TS Section 1 System Requirements</b>	1.8.2 Exterior Noise Levels Pg TS 1-5	Will recent test data be available for bidders to confirm that the cars can currently meet these requirements?	Recent test data is not available.
114	<b>TS Section 1 System Requirements</b>	1.10 Interference and Compatibility Pg TS 1-5	1. Were these cars originally built to meet specified requirements? 2. If so, will test data be available for bidders?	1. The cars were originally built to the specification requirements at that time. 2. Any information MTA has will be provided after award of the contract.
115	<b>TS Section 1 System Requirements</b>	1.10.1 Electromagnetic Interference Pg TS 1-6	Will recent test data be available for bidders to confirm that the cars can currently meet these requirements?	Recent test data is not available.
116	<b>TS Section 1 System Requirements</b>	1.10.2 Interference Compatibility Pg TS 1-6	Will recent test data be available for bidders to confirm that the cars can currently meet these requirements?	Recent test data is not available.

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#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
168	<b>TS Section 2 Carbody</b>	2.1 General	TS Section 2, Carbody, seems to be silent on what to do with the luggage racks. The vendor can find no reference to overhaul or renew of these items. Can the MTA provide some language for the overhaul of these items with language that missing or damaged items will be considered extra work from the extra work allowance.	<b>See Addendum No. 7, Item Fifteen</b>
73	<b>TS Section 2 Carbody</b>	2.4.2.1 Carbody Structure Pg TS 2-3	<ol style="list-style-type: none"> <li>1. Bidder respectfully requests MTA MARC Train Service provide a way to inspect the car roofs, based on the requirements in section 2.4.2.1 as shown below <i>[included entire section from the specification]</i></li> <li>2. In addition Bidder requests that the cars be positioned over a pit such that the interior surfaces of the truck frames can be inspected for cracks and other structural deformations.</li> </ol>	<b>See Addendum No. 7, Item One</b>
117	<b>TS Section 2 Carbody</b>	2.4.2.11 Windshields Pg TS 2-6	<ol style="list-style-type: none"> <li>1. Please indicate if cab cars are currently equipped with spall shields for the windshields?</li> <li>2. Does MARC have a recommended supplier for the new spall shield windshields?</li> </ol>	The MARC IIA cars do not have spall shields.
118	<b>TS Section 2 Carbody</b>	2.4.2.11 Windshields Pg TS 2-6	Please identify the supplier of the existing windshields	MARC's current supplier is Ellcon National.
119	<b>TS Section 2 Carbody</b>	2.4.2.13 Passenger Side Windows Pg TS 2-7	Please identify the supplier of the existing passenger side windows.	MARC's current supplier is Ellcon National.

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#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
59	<b>TS Section 2 Carbody</b>	2.4.2.13 Passenger Side Windows Pg TS 2-7	<p>The Technical Specification states: “As an Option, all passenger window retaining tires, glazing rubbers, inner seals and filler strips shall be replaced with new.”</p> <p>Should this be indicated as an option as this is the same work scope as the base work stated in the 1<sup>st</sup> Subsection in Subsection TS 2.4.2.13?</p> <p>The Contractor suggests Remove wording “As an Option, all passenger window retaining tires, glazing rubbers, inner seals and filler strips shall be replaced with new.”</p>	<p>TS Section 2.4.2.13 Passenger Side Windows, first paragraph requires window replacement only if the windows are scratched cracked or discolored.</p> <p>The Option is for all new windows.</p>
120	<b>TS Section 2 Carbody</b>	2.4.2.14 Cab Sliding Sash Pg TS 2-7	Please identify the supplier for the existing cab sliding sashes.	MARC’s current supplier is Ellcon National.
60	<b>TS Section 2 Carbody</b>	2.4.3.1 General (Interior) Pg TS 2-8	<p>The Technical Specification states: “The color scheme and pattern of the panels shall be consistent throughout the car and shall be similar to the MARC III Cars.”</p> <p>Please provide the color scheme for the MARC III Cars.</p>	The information will be provided after contract award.
121	<b>TS Section 2 Carbody</b>	2.4.3.1 General (Interior) Pg TS 2-9	Do all the current materials used in the construction of the interior currently meet the flammability, smoke emission, and toxicity requirements as specified in TS Section 15- Materials, Workmanship, and Standards of this Specification?	The cars were originally built to the specification requirements at that time.
61	<b>TS Section 2 Carbody</b>	2.4.3.2 Moldings and Trim Pg TS 2-9	Since the molding and trims do not need to be renewed or replaced, do the molding and trims or trim inserts need to match the MARC III color scheme required in Subsection 2.4.3.1? Please clarify.	<b>See Addendum No. 7, Item Fourteen</b>
62	<b>TS Section 2 Carbody</b>	2.4.3.2 Moldings and Trim Pg TS 2-9	Is it the intention of the MTA to have all of the molding and trim renewed or replaced with the MARC III style? If so, can you please provide detail for this molding and trim?	<b>See Addendum No. 7, Item Fourteen</b>

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#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
122	<b>TS Section 2 Carbody</b>	2.4.3.2 Moldings and Trim Pg TS 2-9	Do the cars, as equipped today, reflect this requirements?	The MTA does not understand the question.
63	<b>TS Section 2 Carbody</b>	2.4.3.4 Interior Lockers and Partitions Pg TS 2-9	Can the MTA provide more information on the carpet which is needed for the transverse partitions; possibly manufacturer and style?	The information will be provided after contract award.
123	<b>TS Section 2 Carbody</b>	2.4.3.4 Interior Lockers and Partitions Pg TS 2-9	If the materials specified do not comply with 49 CFR 238 for fire and smoke, how will other materials be approved?	See TS Section 15.23.1 General, fourth paragraph.
95	<b>TS Section 2 Carbody</b>	2.4.3.7 Toilet Room Pg TS 2-12	<p>TS 2.4.3.7 requires, <i>"The door closing device shall be cleaned and inspected for smooth operation."</i></p> <p>However, Specification TS 6.4.14 Addendum No. 4 requires, <i>"The Contractor shall remove all vestibule and toilet door check assemblies and overhaul per OEM requirements. All adjustments shall be performed to ensure OEM intended operation. Completed assemblies shall be tested after reinstallation on carbody end and toilet doors."</i></p> <p>Please confirm that TS 6.4.14 supersedes TS 2.4.3.7.</p>	TS Section 6.4.14 Door Check Assembly supersedes TS Section 2.4.3.7 Toilet Room, unless the Option for the new toilet room module is exercised - in which case the Specification requirement for the Option in Section 2.3.7 takes precedence.
64	<b>TS Section 2 Carbody</b>	2.4.3.8 Emergency Exit Signage Pg TS 2-12	<p>The Technical Specification states: "The Contractor shall upgrade all existing Emergency Exit Signage with components similar in configuration to the MARC III Cars..."</p> <p>Please provide any detailed information available including, drawings, bills of materials, etc. for the signage used on the MARC III Cars.</p>	<b>See Addendum No. 4, Item Six</b>

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#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
124	<b>TS Section 3 Trucks</b>	3.1 General Pg TS 3-1	As indicated, 125 mph is the maximum operating speed. If the trucks have not previously been tested to meet current FRA requirements at 125 mph + 10 mph, with supporting test reports, does this overhaul program require bidders to include instrumented wheel sets and a 125 mph +10 mph test program on the North East Corridor (NEC)?	<b>See Addendum No. 7, Item Twelve</b> The cars are not required to be re-qualified.
125	<b>TS Section 3 Trucks</b>	3.1 General Pg TS 3-1	If overhaul program requires instrumented wheel sets, will the Contractor retain ownership of the instrumented wheel sets after the Contract is complete?	Instrumented wheel sets are not required.
165	<b>TS Section 3 Trucks</b>	3.4.3.1 Primary Suspension Pg TS 3-3	This section of the Technical Specification requires the primary suspension to be renewed. The vendor learned that on the MARC IIB program the primary suspension was requalified.  1. Does the MTA want renewed primary suspension components or some re-qualified with a percentage of new primary suspension components? (this is currently a cost driver for the truck overhaul work)	There will be no change to the Technical Specification at this time.
167	<b>TS Section 3 Trucks</b>	3.4.5 Load Leveling Valves Pg TS 3-3	This section of the Technical Specification requires load leveling valves (LV4, LV4-2B) be replaced in kind or with a new design (CDRL 303). The vendor understands from talking to a supplier that the MTA is currently overhauling these leveling valves. Will the MTA accept an overhauled leveling valve?	There will be no change to the Technical Specification at this time.
65	<b>TS Section 3 Trucks</b>	3.4.6.1 Tread and Disc Brake Units Pg TS 3-4	The Technical Specification states: “Tread brake units and disk brake actuators shall be removed and overhauled per Section 3.4.13 to OEM Instructions.”  Do the disc brake calipers need to be overhauled? These are different parts from the actuators.	Yes. See TS Section 4.4 Scope of Work, page TS 4-3, first paragraph, Item L.
66	<b>TS Section 3 Trucks</b>	3.4.6.5 Brake Shoes and Pads Pg TS 3-4	As the brake shoes are being renewed, do the brake shoe keys need to be renewed also?	<b>See Addendum No. 4, Item Eleven</b>

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#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
102	<b>TS Section 5 Air Comfort System (HVAC)</b>	5.4.1.1 Design Criteria Pg TS 5-2	The Technical Specification states: <i>“The Contractor shall submit the new HVAC system design to the administration for review and approval (CDRL 502)”</i> Does this mean the system will be new or submit our proposed overhaul?	See TS Section 5.4.1.1 (HVAC Equipment) Design Criteria, page TS 5-2, first paragraph, first sentence.
67	<b>TS Section 5 Air Comfort System (HVAC)</b>	5.4.1.4 Evaporator/Blower Assembly Pg TS 5-4	The first sentence on page TS 5-4 states <i>“The compressor / condenser equipment and the stainless steel frames shall be overhauled, cleaned, and repaired as needed.”</i>  This appears to be contradictory to Subsection 5.4.1.3 where all of the components need to be replaced. Please clarify.	<b>See Addendum No. 4, Item Twenty-one</b>
103	<b>TS Section 5 Air Comfort System (HVAC)</b>	5.4.1.4 Evaporator/Blower Assembly Pg TS 5-4	In the Technical Specification, the last sentence of the first paragraph states: <i>“The new assemblies shall have frames fabricated from stainless steel.”</i>  1. Does this mean the new fresh air and return air thermostats? (This does not make sense as the vendor does not think thermostats are stainless steel.)  2. Or are you referring to the evaporator blower? (If this is the case then the units are not like the MARC IIB as the vendor was told.)	The evaporator blower assembly frame shall be stainless steel.
104	<b>TS Section 5 Air Comfort System (HVAC)</b>	5.4.1.4 Evaporator/Blower Assembly Pg TS 5-4	In the Technical Specification the third paragraph states: <i>“The compressor/condenser equipment and the stainless steel frames shall be overhauled, cleaned, inspected and repaired as needed.”</i>  The MARC IIB system was not made from stainless steel. Is this system different than what the vendor was told.	<b>See Addendum No. 4, Item Twenty-two</b>

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#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
96	<b>TS Section 6 Door System</b>	6.4.20 Override Relay Pg TS 6-6	<p>TS 6.4.20 Addendum 4 requires, <i>"The Contractor shall verify the proper operation of the Override Relay (OR) to prevent the door operation by cutting off power to the trainlines and door control switches on the MDCs when the pushbutton is activated on the Engineer's console in the cab car."</i></p> <p>The OR relay is located on the A-End Door Control Relay Panel and in accordance with Specification 6.4.13, <i>"The Contractor shall overhaul the relay panels per OEM requirements. All relays and suppression devices shall be renewed. The Contractor shall ensure proper functionality of the relay panel, and shall verify all interfaces."</i></p> <p>Please confirm the OR relay must be renewed as a part of the A-end relay panel, with its operation to be verified after the relay panel is reinstalled on the car.</p>	Yes, the OR relay shall be renewed. The renewed OR relay shall then be verified to operate per TS Section 6.4.20 Override Relay.
161	<b>TS Section 8 Coupler</b>	8.4.4 Coupler Carrier Assembly Pg TS 8-4	<p>Section 8.4.4 of the Technical Specification states: <i>"The entire coupler carrier assembly shall be renewed."</i></p> <p>The vendor believes the intent of the spec is to overhaul the yoke carrier (B0331D16647), replacing the wear plate.</p> <p>Also, the vendor believes that the MTA wants to overhaul the shank guide (B0331C18420) which is part of the shank carrier assembly (B0331C18419), replacing the springs, stoppers and hardware.</p> <p>Please clarify whether these components (yoke carrier and shank guide) are to be overhauled or replaced with new.</p>	All components shall be renewed.
82	<b>TS Section 9 Electrical System</b>	9.4.1 Battery Box Pg TS 9-2	Spec. section 9.4.1 requires the same batteries as currently used on the MARC IIB. Please provide the supplier being used for the batteries on the MARC IIB cars.	MARC's supplier is currently Sab/NIFE.

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#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
126	<b>TS Section 9 Electrical System</b>	9.4.7 Vehicle Wiring Pg TS 9-5	<ol style="list-style-type: none"> <li>1. As paragraph 2 of this section indicates that some wiring will not be replaced, can Interference and Compatibility be confirmed for the current configuration?</li> <li>2. Will recent test data be available for bidders to confirm that the cars can currently meet these requirements?</li> </ol>	<ol style="list-style-type: none"> <li>1. The cars were originally built to the specification requirements at that time.</li> <li>2. Any information MTA has will be provided after award of the contract.</li> </ol>
53	<b>TS Section 9 Electrical System</b>	9.4.7.3 120V Passenger Convenience Outlets Pg TS 9-6	What amperage of 120 VAC is to be made available to each seat?	<b>See Addendum No. 4, Item Forty-four</b>
54	<b>TS Section 9 Electrical System</b>	9.4.7.3 120V Passenger Convenience Outlets Pg TS 9-6	Does the authority have a receptacle style and arrangement in mind?	This will be determined at Design Review.
55	<b>TS Section 9 Electrical System</b>	9.4.7.3 120V Passenger Convenience Outlets Pg TS 9-6	Would the authority prefer the 120V outlets to be integrated into the interior walls? If so, at what height from the floor does the authority prefer the receptacles to be mounted to the cab interior wall?	This will be determined at Design Review.
83	<b>TS Section 9 Electrical System</b>	9.4.7.3 120V Passenger Convenience Outlets Pg TS 9-6	<p>Per Section 9.4.7.3 of the spec there is to be one outlet per each passenger seat.</p> <ol style="list-style-type: none"> <li>1. Did the MARC II B cars get updated to this configuration and if so, can the MTA provide the installation drawing and schematic for this section.</li> <li>2. Does the MTA have a requirement for the power requirements per outlet and the usage factor? This greatly impacts the circuit design and size of the new transformer.</li> </ol>	<ol style="list-style-type: none"> <li>1. No.</li> <li>2. <b>See Addendum 4 Item Forty-four.</b></li> </ol>

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#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
68	<b>TS Section 12 Lighting</b>	12.4.1 Interior Lighting Pg TS 12-2 and TS 12-4	<p>There appears to be a contradiction between Subsection 12.4.1 and 12.4.4.1. Subsection 12.4.1 states <i>"The electrical locker fixture shall be cleaned and the incandescent bulb replaced."</i></p> <p>Subsection 12.4.4.1 states <i>"All compartments and electrical lockers shall be equipped with a new ceiling-mounted LED light assembly that shall be controlled by a wall-mounted switch and capable of operation under normal and emergency conditions."</i></p> <p>The Contractor recommends Subsection 12.4.1 be changed to read as follows: <i>"The electrical locker fixture shall be upgraded to LED per 12.4.4.1."</i></p>	TS Section 12.4.4.1 Interior Locker Lighting, page TS 12-4 is part of the "Option" that begins in TS Section 12.4.1 Interior Lighting, page TS12-3, paragraph 6.
166	<b>TS Section 12 Lighting</b>	12.4.1 Interior Lighting Pg TS 12-2	<p>The Technical Specification requires the fluorescent fixtures to have the ballast renewed and the lamp replaced. A supplier has indicated that on the MARC IIB overhaul the ballast were upgraded to a new design ballast and re-lamped with T-8 bulbs. Can the MTA review and reconfirm the scope of work in this area required for the MARC IIA cars?</p>	<p><b>See Addendum No. 7, Item Seventeen</b></p> <p>The MARC IIB cars were re-ballasted and re-lamped with T-8 fixtures and bulbs.</p> <p>If the Option is not exercised, the ballasts and bulbs shall be re-ballasted and re-lamped with T-8 fixtures and bulbs.</p>
69	<b>TS Section 12 Lighting</b>	12.4.2.2 Side Indicator Lights and Platform Lights Pg TS 12-3	<p>Need clarification on the workscope for the platform lights. Section 12.4.2 requests these lights to be upgraded to LED. However in Section 12.4.2.2 it does not detail the workscope.</p> <p>Does MTA only want new LEDs, or do they expect the entire platform light fixture and bulb to be upgraded? Please clarify.</p>	<p><b>See Addendum No. 7, Item Eighteen</b></p>
70	<b>TS Section 14 Testing</b>	14.3 Qualification Testing of New and Upgraded Components/ Subsystems Pg TS 14-4	<p>Subsection 14.3 appears to have information missing (there is no text or subsections under 14.3). Please clarify intent of this section heading.</p>	<p>There is no information that is missing from TS Section 14.3 Qualification Testing of New and Upgraded Components/Subsystems. It is a formatting error only.</p>

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#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
97	<b>TS Section 14 Testing</b>	14.4.3.I Door Operation Test Pg TS 14-5	<p>TS 14.4.3.I requires, "<i>Crew key switch functions and door unlatch solenoid functions shall also be confirmed.</i>"</p> <p>Neither the existing door system, the specified door system nor the proposed overhauled door equipment utilize an unlock solenoid.</p> <p>The vendor recommends deleting reference to the door unlatch solenoid.</p>	There will be no change to the Technical Specification at this time.
130	<b>TS Section 15 Materials, Workmanship, and Standards</b>	15.23.2 Flammability and Smoke Emissions Pg TS 15-40	Will the Contractor be required to document compliance for only the items that will be new to the cars?	See TS Section 15.23.1 General, page TS 15-39, second paragraph, first sentence.
131	<b>TS Section 15 Materials, Workmanship, and Standards</b>	15.23.2 Flammability and Smoke Emissions Pg TS 15-40	As the cars currently exist, does a fire and smoke analysis exist for the entire car?	The information will be provided after contract award.
98	<b>TS Section 15 Materials, Workmanship, and Standards</b>	15.24.4 Dip and Bake Pg TS 15-43	<p>TS 15.24.4 requires, "<i>Small electrical devices shall have their insulating properties restored by the "Dip and Bake" process. The following small motors are in this category, other devices are specified in their respective sections:... Door Operator Motors.</i>"</p> <p>However, Specification 6.4.2 requires, "<i>The Contractor shall renew the motors.</i>"</p> <p>The vendor recommends removing the reference to door operator motors reference in Specification 15.24.4 if they are to be renewed.</p>	<b>See Addendum No. 7, Item Nineteen</b>

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#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
99	<b>TS Section 17 System Safety Program</b>	All subsections	<p>Section 17 requires the implementation of a System Safety Program Plan, including hazards identification, FMECA, O&amp;SHA, FTA, etc. The original MARC IIA program did not include these analyses.</p> <p>Specification Section 6 defines explicit overhaul, renewal and changes to the door system but does not address potential modifications that might be identified as a part of the Section 17 System Safety Program. Such changes cannot be identified or quoted until the analyses have been performed.</p> <ol style="list-style-type: none"> <li>1. Was a system safety program implemented as a part of the MARC IIB overhaul program?</li> <li>2. Please identify how MTA intends to implement any changes recommended as a result of the safety analyses, since these will have to be quoted separately from the specified overhaul program.</li> </ol>	<p>For new and upgraded designs, the Contractor shall meet all safety requirements in TS Section 17 System Safety Program.</p> <p>For existing designs that require upgraded parts, the MTA will review the requirements on a case-by-case basis.</p>
133	<b>TS Section 17 System Safety Program</b>	17.1 General Pg TS 17-1	Will the Contractor be required to document compliance for only the items that will be new to the cars?	See response to Question #99.
80	<b>TS Section 18 Management and Support Systems</b>	18.5.2 Drawing Revisions, Scanning, and Conversion Pg TS 18-15	<p>Per Section 18.5.2 of the spec, the MTA's Marc II as built drawings consist of 750 engineering drawings and 50 microfiche cards.</p> <ol style="list-style-type: none"> <li>1. Is this the extent of the information the MTA wants updated on the contract in addition to any new installation drawings required for new equipment?</li> </ol>	Yes.

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#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
81	<b>TS Section 18 Management and Support Systems</b>	18.5.2 Drawing Revisions, Scanning, and Conversion Pg TS 18-15	<p>Section 18.5.2 of the spec seems a bit onerous in suggesting that 20+ year old drawings can be made to function as well as drawings produced in CAD for a new design. This requirement conceivably could mean that every original OEM drawing would need to be redrawn to ensure compliance.</p> <ol style="list-style-type: none"> <li>Can the MTA elaborate on this requirement we are unclear what benefit the vectorized file requirement to 99% accuracy gives to the MTA. Wouldn't electronic PDF files suffice except where there were some critical drawings requiring detailed scale of parts.</li> <li>Can the MTA provide a sample format of an updated drawing for the Marc II B project? Without having all 750 OEM drawings it makes it very difficult to ascertain the quality of documents which need to be converted.</li> </ol>	<ol style="list-style-type: none"> <li>There will be no change to the Technical Specification at this time.</li> <li>Sample drawings are currently unavailable.</li> </ol>
135	<b>TS Section 18 Management and Support Systems</b>	18.5.2 Drawing Revisions, Scanning, and Conversion Pg TS 18-15	Bidder requests clarification for conversion of electronic media is limited to only the 750 engineering drawings (hard copy) and 50 microfiche aperture cards and quantities above that would be a Change Order.	See response to Question 81. Please refer to SP Section C.5.3 Miscellaneous Work Allowance, page C-19..
136	<b>TS Section 18 Management and Support Systems</b>	18.5.2 Drawing Revisions, Scanning, and Conversion Pg TS 18-15	Please confirm that conversion of the drawings specified in this section will require complete redrawing of each document in AUTOCAD format, to create a fully functional "live" (.dwg) technical drawing.	The Contractor shall meet the requirement of TS Section 18.5.2 Drawing Revisions, Scanning and Conversion, page TS 18-15, third paragraph, last sentence.
137	<b>TS Section 18 Management and Support Systems</b>	18.12 Training Pg TS 18-21	Please provide some samples to show bidders what level/detail of training would be expected.	It is up to the Contractor to determine how to meet the requirements of TS Section 18.12.1 (Training) General, page TS 18-21 in reference to the 200 hours of classroom training, lesson plans, and number of sessions.

**ADDENDUM NO. 7**  
**ATTACHMENT B**  
**New Section 7-Communications System**

**SECTION 7  
COMMUNICATION SYSTEM**

## 7.0 COMMUNICATION SYSTEM

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## 7.0 COMMUNICATION SYSTEM

### 7.1 GENERAL

The Contractor shall upgrade the Communication System on the Nippon-Sharyo-built MARC IIA railcars.

### 7.2 SYSTEM FUNCTIONS

The Contractor shall provide a complete and functional communication package for each car. Each communication package shall be comprised of the following:

- A. Public Address System (PA)
- B. Crew Intercommunication System (IC)
- C. Train Radio System (TR) – Cab Cars Only
- D. Antennae
- E. Control Panels
- F. Passenger Emergency Intercom System (PEI)
- G. Destination Signs with Automated Announcement System
- H. Train Announcement
- I. Train-to-Wayside Communication
- J. Crew-to-Wayside Cellular Equipment

Details of the design, equipment, arrangement, and installation of the complete communication package shall be submitted to the Administration for approval during the design review process (*CDRL 701*)

### 7.3 SYSTEM REQUIREMENTS

- A. The Communication System shall permit the train crew to make announcements and to page the passengers and other train crew members by use of the speakers in the passenger areas of the cars.
- B. It shall permit two-way radio communication between the train crew/Engineer and other trains and wayside installations.
- C. It shall permit private, two-way intercommunication between any two communication control panels within the train; e.g., between train crew and Engineer.
- D. It shall also accommodate recorded or digitized human speech messages for announcements or other passenger information in accordance with the requirements of 49 CFR 38, and enable announcements to be interfaced with the interior destination sign for visual broadcasting. In addition, the system shall be capable of receiving and displaying on the interior signs arbitrary text messages addressed to the passengers and/or crew (paging system).
- E. Passengers shall have the capability to communicate with the train crewmembers via the PEI system.

- F. Each Cab car shall include cellular communication capabilities incorporated with the radio communications and capabilities to record PA announcements.
- G. The Communication System shall be designed so that provisions are made for future transfer of data between the train and wayside installations using a modem and/or via wireless LAN.
- H. All trainline communication shall be compatible with the existing MARC cars.
- I. An Active Noise Cancellation shall be provided to cancel out noise from HVAC System. An acceptable noise level will be determined by the Administration.
- J. Communication apparatus described hereinafter shall be powered from the low voltage power supply directly through the Communications System circuit breakers. The PA and radio shall be provided with separate circuit breakers.
- K. Suppliers of the Communication System shall have proven experience in the successful design and manufacture of apparatus of this type for similar railcar applications, and the Contractor shall follow the manufacturer's recommendations for installation.

## **7.4 PUBLIC ADDRESS SYSTEM (PA)**

### **7.4.1 General**

The PA system shall allow one-way communication from the train crew or the automatic passenger information system to the passengers. The PA system shall provide clear, intelligible audio with a constant audio level regardless of position of the audio source within the train. It shall incorporate an automatic volume adjustment feature to compensate for ambient noise conditions.

The PA system shall include microphones, amplifiers, speakers, associated wiring, and other circuits, and, when operating, shall have the following performance characteristics:

- A. Frequency Response:  $\pm 3$  dB minimum from 80 Hz to 8,000 Hz
- B. Total Harmonic Distortion (THD): less than 1% over entire frequency range
- C. Signal to Noise Ratio < 100: 1

### **7.4.2 Recording Announcements**

- A. Each PA announcement made by a crewmember shall be recorded and stored digitally in the cab car and/or locomotive. The announcements shall be digitally recorded, vox controlled, and stored in non-volatile memory.

- B. The storage memory shall have sufficient capacity to store not less than 24 hours of PA announcements with memory organized on a “first in first out” basis. The system shall permit the downloading of announcement information to PC and removable PC memory card (PCMCIA).
- C. The system shall maintain the following information for each PA announcement:
  - 1. Announcement
  - 2. Time of Announcement
  - 3. Car Number where Announcement was Initiated
- D. The system shall also have the capability to provide the following data to a future trainline data system:
  - 1. Train Number
  - 2. Train Consist including Road Numbers for All Cars and Locomotives
  - 3. Location of Train

Details of the design, arrangement, and installation of the PA System shall be submitted to the Administration for review and approval. (*CDRL 702*)

### **7.4.3 Amplifier**

- A. The public address amplifier and spike suppression filters shall be mounted in an approved location in each car. The unit shall be completely solid state, with modular construction, housed in a steel enclosure, and mounted on a standard AAR mounting rack, or approved equal. Provision shall be made for securing the unit with a cylinder lock. The amplifier shall be mounted in such a manner that it can be readily removed from the front of the enclosure.
- B. The unit shall have sufficient capacity to drive all specified speakers at the specified sound level. The gain controls shall be adjustable and installed in a well-defined location with restricted access in the amplifier enclosure.
- C. The amplifier unit shall be complete with transient filtering capable of withstanding 2.5 kV peak pulse with total energy of 50-watt seconds.
- D. The amplifier shall produce a minimum compression range in the microphone and circuits of 18 dB with a maximum output level variation of 2 dB and a maximum total harmonic distortion of 3% at the compressor output.
- E. The amplifiers shall be designed such that the audio output to the trainlines and speakers shall have a consistent level when the Operator’s mouth is between 2 and 12 inches from the microphone. The line amplifier shall be capable of delivering a minimum of +20 dBm into an impedance of from 200 to 600 ohms with less than 1% total harmonic distortion.
- F. The PA amplifier shall incorporate an automatic output level adjustment to ensure that the messages are heard by the passengers over the ambient noise level within the car. The automatic output level adjustment shall be capable of maintaining an audio output 10 dB higher than the ambient noise level for all car-operating conditions, but

shall never exceed a level of 90 dB. The automatic output level adjustment shall make use of sensing microphones located within the passenger compartments.

- G. Use of the interior speakers as ambient noise sensors shall be prohibited. At a minimum, the system shall include two sensing microphones. The ambient noise level shall be sampled immediately before each PA announcement is initiated. The sampling method and location of sensing microphones shall be included in the design review packages.
- H. The design, material, and workmanship of the amplifier and its application shall be subject to approval of the Administration. All terminals and wires shall be properly identified. With speech input, the amplifier shall operate continuously with full output, at rated input voltage, and without damage to components. *(CDRL 703)*

#### **7.4.4 Speakers**

##### **7.4.4.1 Interior Speakers**

- A. The current location of the speakers shall be used.
- B. Each speaker shall be mounted behind a flush baffle in the car ceiling by means of screws and hinge fittings or screws only. The speaker installation shall be arranged such that speakers can be removed and replaced by removing the baffle without disturbing ceiling panels. The baffle shall be integrally colored to match the decorative treatment of the car. Speakers shall be secured with tamper-proof screws.
- C. The speakers shall be of the direct radiating, permanent magnet field type capable of handling up to 10 watts of audio power. The nominal axial sensitivity shall be at least 92 dB at 4-feet with 1-watt input. The speaker shall have a wide dispersion characteristic.

##### **7.4.4.2 Crew Intercommunication System (IC)**

The Crew Intercommunication System shall provide two-way communication between the control stations as required in Section 7.6.

#### **7.5 ANTENNA**

A low profile type antenna, including coaxial cable running from antenna to electric locker, shall replace the existing antenna. No angle connectors shall be used. A voltage standing wave ratio (VSWR) of 1.5 or better shall be required after installation.

The antenna shall be mechanically grounded to the carbody through a copper or similar conductive metal between the antenna and its mounting.

The antenna lead shall be mounted utilizing the existing mounting surface. No air or moisture shall enter or escape through the antennae lead roof penetration or mountings.

## 7.6 CONTROL PANELS

### 7.6.1 Communication Control Panel - Trailer Car

Each vehicle shall have a communication control panel (CCP). In Cab cars, there shall be a CCP or equivalent located in the cab for the Operator's use. The communications control panel shall be located at an approved height above the floor. Each communication control panel shall include:

- A. A microphone and intercom speaker mounted behind a vandal-proof, perforated grille.
- B. A flush-mounted, coach key operated selector switch with four positions: "PUBLIC ADDRESS," "INTERCOM," "PASSENGER EMERGENCY," and "OFF." The key shall be removable in the "OFF" position only.
- C. A "PEI Activated" light.
- D. Operating instructions in photo luminescent material per section 4.1.1.6 of APTA Standard SS-PS-001-98.

The key switches shall be activated by a standard coach key. The key switch shall be an electric, non-mechanical-type switch. Insertion and rotation of the standard key shall activate the communication system control without physically moving a switch contact. Alternative mechanical designs that are functionally equivalent may be submitted for approval by the Administration. *(CDRL 704)*

The CCP will have Push-to-Talk "leaf" type switches, capable of 1,000,000 operations. The output shall be -15 dBm with 600 ohm output impedance and sound pressure of 30 microbars, 300 Hz. Frequency response shall be 300 Hz to 1 KHz using 3 dB/Octave with 2% maximum THD.

The Administration shall approve the installation and protection of the wiring to the control panel. *(CDRL 705)*

### 7.6.2 Cab Communication Control Panel

The Cab car shall have a communication control panel in the cab located on the Operator's left vertical indicator and switch panel. It shall be within easy reach of the seated Operator. The cab communication panel shall include:

- A. A microphone for radio/PA/intercom cellular communications, with a speaker mounted behind a vandal-proof perforated grille.
- B. A 12-channel control head, conforming to AAR Part 12-10, Figure 1210-5, with LED display corresponding to selected channel and channel bank.
- C. Radio speaker volume control (25% to 100% of full volume).
- D. LED Indicator showing system activated and mode in use.

- E. Press-to-Talk microphone switch.
- F. Radio/PA/Intercom/PEI/Cellular Selector Switch, spring-loaded to center position for radio reception. (When held in PA, PEI, or Intercom position, it shall allow the Operator to talk over the PA, PEI, or Intercom system, respectively.)
- G. A “PEI Activated” light.

Components, which do not require the attention of the Operator, shall be mounted in the equipment locker adjacent to the cab and shall be accessible for maintenance and servicing. It shall be energized when the make-up key is inserted into the make-up key switch and be energized in the On and By-Pass positions. The train radio communication mode shall be the highest priority in the event of a communication system failure. The Cab communication control panel shall directly connect to the microphone, PTT button, speaker, and any other required components directly to the radio in such event.

## **7.7 DESTINATION SIGN SYSTEM WITH AUTOMATED ANNOUNCEMENT SYSTEM**

### **7.7.1 Equipment Description**

An Electronic Destination Sign System shall be installed on each car. It shall comply with all requirements of 49 CFR 238 and IEEE Std 1477. The character height shall be 3-inches to 4-inches.

- A. Each car shall have one Operator’s Display Keyboard unit (ODK) and one Sign Control Unit (SCU).
- B. All cars shall have two (2), 15-character, LCD signs with 3-inch character height, for viewing from the interior of the cars. The signs shall be installed at the car ends and shall be visible from the passenger area. The installation and location of the signs shall be submitted to the Administration for review and approval.
- C. All cars shall have two (2) LED signs fitted to the exterior of the B-end of the car above the side doors. Design and information to be displayed will be approved by the Administration.

### **7.7.2 System Operation**

The system shall be operated from any ODK of any car in a train. It shall be possible for only one (1) ODK unit on the train to be in use at any given time to select messages.

It shall be possible to program all signs with different messages from any operator’s ODK.

Route selection, Train Number, and Station message sequence for signage system and PA announcements shall be manually initiated at the origin station by the train crew.

Interior signs (and PA announcements) shall provide the following messages:

- A. Announce the next station, when departing a station
- B. Announce the station when approaching a station
- C. Announce the station when stopped at the station
- D. Control of the announcements shall be derived from a distance sensing method to be approved by the Administration.

Exterior signs shall display the Train Number and Terminating Destination.

The sign system shall be operational whenever battery voltage is energized. The design of the Destination Sign System, including equipment location and system operation, shall be submitted to the Administration for review and approval during design review process.  
(CDRL 706)

All software including source code and compilers shall become the property of the Administration without a monetary license.

#### **7.7.3 Memory Transfer Unit**

A standard IBM compatible PC shall be used to update the message listing and all memory devices in the sign control units in each car using a method approved by the Administration.  
(CDRL 707)

Software programs shall be provided that shall enable authorized personnel to change the message and voice databases using a standard PC. The software shall be capable of creating special graphics characters. The message listing created in the computer shall be transferred directly to each sign control unit using the method approved by the Administration as described above.

#### **7.7.4 System Components and Wiring**

All components and wiring shall meet the requirements of TS Section 15-Materials, Workmanship, and Standards. Where required to prevent interference, shielded, twisted pairs of wires shall be used. The power supply shall be capable of operating within the voltage range specified in TS Section 9-Electrical.

#### **7.7.5 General**

The Contractor shall make provisions in the communication system that will allow adding a feature to permit wayside personnel to transmit arbitrary text messages to the train for display to the passengers or crew. The paging system shall use the Train-to-Wayside Communication (TWC) equipment to receive the page messages. Page messages shall be transmitted to all cars via a data network.

Programmed station announcements shall be executed as described in Section 7.7.2.

### 7.7.6 Train-to-Wayside Communications (TWC)

Provisions shall be made to allow adding TWC equipment on all cab cars. The TWC equipment shall provide the following functions, as a minimum:

- A. Transfer of consist monitoring and diagnostic data from the train to the wayside
- B. Transfer of train status information from the train to the wayside
- C. Transfer of passenger load data for all cars in the train from train to the wayside
- D. Remote trouble-shooting of locomotive and car systems
- E. Transfer of sign database updates from the wayside to the train
- F. Transfer of software updates from the wayside to the train
- G. Transfer of paging system messages from the wayside to the train
- H. Transfer of en-route transit information from the wayside to the train.

Communications among locomotives and cars and the TWC equipment shall be by means of a cellular communications or wireless LAN, depending on service availability. Wireless LAN shall be the preferred communication medium. Cellular shall be used in areas where wireless LAN communications are not available. It shall be possible to send and receive all data on either of the two TWC channels.

### 7.8 TRAIN-TO-WAYSIDE CELLULAR EQUIPMENT

The communications control system shall include an integrated cellular telephone semi-permanently programmed for fixed dialing. The cellular telephone shall permit two-way communications between the train Operator and specific wayside telephone numbers (to be provided by the Administration). The wireless technology selected for the Operator-to-Wayside cellular telephone shall be subject to approval by the Administration. *(CDRL 708)*  
The Operator-to-Wayside cellular telephone shall either share an antenna with one or more other subsystems or shall have a dedicated antenna.

The cellular telephone and its associated equipment shall be provided only on the Cab cars.

### 7.9 CONDUCTOR'S SIGNAL SYSTEM AND ENGINEER'S BELL

A trainlined electric signal system is provided in all cars. Pushbuttons and buzzers are located as follows (approximately):

- A. There is a Conductor's buzzer pushbuttons located in the ceiling panel in each vestibule and Operator's cab.
- B. Two (2) Conductor's buzzer pushbuttons are located on the exterior of the car next to the stepwell at the A-end of the Cab car.
- C. Four (4) Conductor's buzzer pushbuttons are located on the exterior of the car next to the stepwell at both the A-end and B-end of the car.

The Contractor shall renew the Conductor's Buzzer and Engineer's signal bell. All pushbutton assemblies located in their present positions shall be renewed. The pushbutton located on the interior sidewall shall be removed.

## 7.10 RADIO AND COMMUNICATIONS

The Contractor shall submit a Communications System Design plan that describes the communication systems and the criteria used for each system to mitigate potential interference problems during:

- A. Concept development
- B. Design development
- C. System qualification testing
- D. Systems integration into the vehicle
- E. Integration of the vehicle into the MARC system.

The Contractor shall ensure that the communications equipment including, but not limited to, train radios, hand-held radios, public address, and intercommunications systems are free from onboard and externally caused interference. The application of control components, such as filtering, shielding, and bonding, shall conform to sound engineering practices and industry standards and shall be an integral part of the car system. Potential interference sources, such as electric buzzers and other trainline signals, shall be considered and adequately suppressed.

The Contractor shall develop the Communications System Design plan in conjunction with the EMC Plan and submit it to the Administration for review and approval. **(CDRL 709)**

## 7.11 MATERIAL

**The Administration is only responsible for replacement components and/or equipment where specifically noted.**

Unless noted otherwise, all components, parts, or materials removed from the MARC II A cars are to remain the property of the Administration in accordance with the salvage material requirements specified in TP Section 18, Management and Support Systems.

All new materials used in the communication system shall meet the flammability, smoke emission, and toxicity requirements as specified in TP Section 16, Materials, Workmanship, and Standards of this specification.

Float components and parts shall become Administration property at the end of the contract. When noted in the specification, and to the extent possible, the Administration shall cooperate by making available float equipment in specified quantities. At the end of the project, the Contractor shall return to the Administration a like quantity of float equipment, completely overhauled and configured to match equipment as installed on the overhauled MARC IIA fleet.

## 7.12 TESTING

The PA and communications systems shall be tested to verify compliance with the Specification and the functionality in both single car and multiple car configurations, as required in TS Section 14-Testing. The Administration shall witness the test. During initial tests, the Contractor, in conjunction with the Administration, shall determine the output settings for the power amplifier. These approved settings shall become a standard for the remaining cars.

### 7.13 REQUIRED CDRLS

The following CDRL items are referenced in this section:

- CDRL 701 Design, Arrangement, Installation of Communication Package (7.2)
- CDRL 702 Design, Arrangement and Installation of PA System (7.4.2)
- CDRL 703 PA Amplifier Design (7.4.3)
- CDRL 704 Alternate Key Switch (7.6.1)
- CDRL 705 CCP Design (7.6.1)
- CDRL 706 Destination Sign System (7.7.2)
- CDRL 707 Memory Transfers Units (7.7.3)
- CDRL 708 Cellular Telephone (7.8)
- CDRL 709 Interference Mitigation Plan (7.11)

**ADDENDUM NO. 7**  
**ATTACHMENT C**  
**Sign-In Sheet-November 6, 2010 Site Visit**

SITE VISIT ATTENDANCE  
 CONTRACT NO. T-8000-0316  
 MARC IIA Vehicle Overhaul  
 November 6, 2010 @ 9:00AM-12:00PM

CONTACT PERSON	NAME OF FIRM	TELEPHONE/ E.MAIL
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DON PITTS	VOMELA	650 773-6559 dpitts@CORPORATEIDENTITY.NET.
AL ZUBOR	MTA/MARC	410-549-6762 ALAN4891@AOL.COM

Arban quipres:

SITE VISIT ATTENDANCE  
 CONTRACT NO. T-8000-0316  
 MARC IIA Vehicle Overhaul  
 November 6, 2010 @ 9:00AM-12:00PM

CONTACT PERSON	NAME OF FIRM	TELEPHONE/ E.MAIL
Tom KSH	IBEG	(330) <sup>Cell</sup> 289-4591
YVES J. Dupuis	BOZANES HAMILTON (MTA PROCUREMENT)	YDUPUIS@MTA-MARYLAND.DOV



MARYLAND TRANSIT ADMINISTRATION

MARYLAND DEPARTMENT OF TRANSPORTATION

Martin O'Malley, Governor • Anthony G. Brown, Lt. Governor  
Beverly K. Swaim-Staley, Secretary • Ralign T. Wells, Administrator

TO: Holders of Contract Documents

FROM: Maryland Transit Administration  
Contract Administration Division  
6 Saint Paul Street  
Baltimore, Maryland 21202-1614

SUBJECT: Addendum No. 6  
RFP No. T-8000-0316  
Procurement of the MARC IIA Fleet Mid-life Overhaul

DATE: October 21, 2010

Issued herewith and effective this date is Addendum No. 6. The Offeror shall include acknowledgement of receipt of this Addendum in the proposal cover letter as detailed in Section II, Proposal Form, Part 8, acknowledge receipt of addenda.

**ITEM ONE**

An additional MARC IIA car inspection has been scheduled at the Frederick Maintenance Facility on **Saturday, November 6, 2010, from 9:00 a.m. to 12:00 p.m (noon)**. Offerors will be given access to all sides of the vehicle but will not be permitted on the vehicle roof.

The address for the Frederick Maintenance Facility is:

7900 Reichs Ford Rd.  
Frederick, Md.

Attendance should be limited to no more than four (4) representatives per proposing team.

**Please ensure that attendees have safety shoes, hard hats and safety glasses.**

All other conditions of this RFP remain the same. Any questions may be directed to Yvon J. Dupuis at 410-767-3591 or faxed to 410-333-4810 or by email at [ydupuis@mta.maryland.gov](mailto:ydupuis@mta.maryland.gov).

  
John L. Cousins  
Deputy Director  
Procurement Division



MARYLAND TRANSIT ADMINISTRATION

MARYLAND DEPARTMENT OF TRANSPORTATION

Martin O'Malley, Governor • Anthony G. Brown, Lt. Governor  
Beverly K. Swaim-Staley, Secretary • Ralign T. Wells, Administrator

TO: Holders of Contract Documents

FROM: Maryland Transit Administration  
Contract Administration Division  
6 Saint Paul Street  
Baltimore, Maryland 21202-1614

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RFP No. T-8000-0316  
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All other conditions of this RFP remain the same. Any questions may be directed to Yvon J. Dupuis at 410-767-3591 or faxed to 410-333-4810 or by email at [ydupuis@mta.maryland.gov](mailto:ydupuis@mta.maryland.gov).

  
John L. Cousins  
Deputy Director  
Procurement Division



**MARYLAND TRANSIT ADMINISTRATION**

**MARYLAND DEPARTMENT OF TRANSPORTATION**

Martin O'Malley, Governor • Anthony G. Brown, Lt. Governor  
Beverly K. Swaim-Staley, Secretary • Ralign T. Wells, Administrator

TO: Holders of Contract Documents

FROM: Maryland Transit Administration  
Contract Administration Division  
6 Saint Paul Street  
Baltimore, Maryland 21202-1614

SUBJECT: Addendum No. 5  
RFP No. T-8000-0316  
Procurement of the MARC IIA Fleet Mid-life Overhaul

DATE: September 29, 2010

Issued herewith and effective this date is Addendum No. 5. The Offeror shall include acknowledgement of receipt of this Addendum in the proposal cover letter as detailed in Section II, Proposal Form, Part 8, acknowledge receipt of addenda.

**ITEM ONE**

The closing date for questions or inquiries on this RFP is revised to **November 12, 2010**. All questions must be in writing. **Receipt of proposals to this solicitation will be accepted until, but not after 2:00 p.m. local time, on the revised date of December 10, 2010**, at the following location:

Maryland Transit Administration  
Procurement Department, 7<sup>th</sup> Floor  
Yvon Dupuis  
6 Saint Paul Street  
Baltimore, MD 21202

All other conditions of this RFP remain the same. Any questions may be directed to Yvon J. Dupuis, at 410-767-3591 or faxed to 410-333-4810 or by email at [ydupuis@mta.maryland.gov](mailto:ydupuis@mta.maryland.gov).

John L. Cousins  
Deputy Director  
Procurement Division

T8000-0316  
Addendum No. 5



MARYLAND TRANSIT ADMINISTRATION

MARYLAND DEPARTMENT OF TRANSPORTATION

Martin O'Malley, Governor • Anthony G. Brown, Lt. Governor  
Beverley K. Swaim-Staley, Secretary • Ralign T. Wells, Administrator

TO: Holders of Contract Documents

FROM: Maryland Transit Administration  
Contract Administration Division  
6 Saint Paul Street  
Baltimore, Maryland 21202-1614

SUBJECT: Addendum No. 4  
RFP No. T-8000-0316  
Procurement of the MARC IIA Fleet Mid-life Overhaul

DATE: September 22, 2010

Issued herewith and effective this date is Addendum No. 4. The Offeror shall include acknowledgement of receipt of this Addendum in the proposal cover letter as detailed in Section II, Proposal Form, Part 8, acknowledge receipt of addenda.

**ITEM ONE**

"Answers to RFP Questions No. 1" is included as **Addendum No. 4 – Attachment A**. For your information, each questions has been assigned a unique qualifier (# column); however, the document is not sorted in numerical order, but is sorted by Specification section (i.e., first are General Questions that do not reference a specific Specification section, second are Technical Specification questions, and third are Special Provisions questions.

**ITEM TWO**

For information purposes, please note that CDs containing the MARC IIA Technical Documents and Drawings are available at no cost upon request to Yvon J. Dupuis, at 410-767-3591 or faxed to 410-333-4810 or by email at [ydupuis@mta.maryland.gov](mailto:ydupuis@mta.maryland.gov). The documents on these CDs are for reference purposes only and are provided with no warranty or guarantee as to accuracy, readability, suitability, or fitness of purpose.

**ITEM THREE**

The closing date for questions or inquiries on this RFP is revised to **October 1, 2010**. All questions must be in writing.

T8000-0316

Addendum No. 4

6 Saint Paul Street • Baltimore, Maryland 21202-1614 • TTY 410-539-3497 • Toll Free 1-866-743-3682

**ITEM FOUR**

Change TS 2.4.6.2, Exterior Signage, Page TS 2-4, second paragraph, second sentence to read as follows:

"The Contractor shall renew with new graphics similar to that of the ~~MARC III~~ MARC IIB end graphics."

**ITEM FIVE**

Change TS 2.4.9.2, End Door, Page TS 2-9, fourth paragraph, third sentence to read as follows:

"The configuration shall ~~not~~ have a mechanical linkage between the ~~dog handles~~ upper and lower latches and the center latch."

**ITEM SIX**

Change TS 2.4.3.8, Emergency Exit Signage, Page TS 2-13, first sentence to read as follows:

"The Contractor shall upgrade all existing Emergency Exit signage with components similar to the ~~MARC III~~ MARC IIB cars."

**ITEM SEVEN**

Insert new section TS 2.4.7, Low Level Exit Path Marking, Page TS 2-14 as follows:

**"2.4.7 Low Level Exit Path Marking**

**The Contractor shall install Low Level Exit Path Marking (LLEPM) to match the LLEPM installed on the MARC IIB cars."**

**ITEM EIGHT**

Insert TS Section 3.4.1, Truck Frame and Bolster, Page TS 3-3, new paragraph as follows:

**"The interior of the bolster shall be inspected for rust with the use of a bore scope or similar device. If rust is found, it shall be treated with Harris International Laboratories "EVAPO-RUST®" neutralizing solution, following the manufacturer's guidelines."**

**ITEM NINE**

Delete TS 3.4.2, Wheel and Axle Assembly, Page TS 3-3, first paragraph in its entirety and replace with the following:

**"The wheel and axle assembly shall be renewed. All wheel and axle assembly assemblies shall be renewed per approved MTA specifications/drawings. Rotors shall be Alp Rail Industries 4M-2057."**

**ITEM TEN**

Change TS 3.4.4, **Vertical and Lateral Shock Absorbers (Oil Dampers)**, Page TS 3-3, first sentence to read as follows:

The secondary suspension system components including all associated hardware shall be replaced with ~~OEM~~ or Administration-approved equivalents.

**ITEM ELEVEN**

Delete TS 3.4.6.5, **Brake Shoes and Pads**, Page TS 3-4, in its entirety and replace with the following:

"All brake shoes shall be renewed with WABCO/COBRA V-175 material. All brake pads shall be renewed with BREMSKERL 20500070 and 20500071 pads or Administration-approved equivalent."

**ITEM TWELVE**

Change TS 3.4.8.2, **Anchor Rods**, Page TS 3-5, third paragraph, third sentence to read as follows:

"The Contractor shall ~~build up~~ adjust the anchors if necessary to restore the tram.

**ITEM THIRTEEN**

Delete TS 3.4.10, **Ground Brushes**, Page TS 3-5, in its entirety and replace with the following:

"All ground brush assemblies and hardware shall be renewed with Schunk Graphite Technology 10236555 assemblies."

**ITEM FOURTEEN**

Change TS 4.4, **Scope of Work**, Page TS 4-3, third paragraph, Item A, D-1 Foot Valve to read as follows:

"A. D-1 Foot Valve - All air lines connected and electrical connections to the foot valve shall be removed by an MTA approved method. ~~A block-off plate shall be installed on the cab floor.~~"

**ITEM FIFTEEN**

Add TS 4.4, **Scope of Work**, Page TS 4-4, seventh paragraph, last sentence to read as follows:

"The configuration shall be submitted to the Administration for review and approval. (CDRL 408)"

**ITEM SIXTEEN**

Delete TS 4.4.3, Pipes and Hoses, Page TS 4-4, in its entirety and replace with the following:

"The Contractor shall flush, pressure test, and renew or replace as required, all piping in accordance with OEM requirements. If renewal or replacement of piping is required, the Contractor shall not utilize salvage material for meeting this requirement. Splicing or patching of pipes between connections shall not be permitted. For the purposes of this specification, the Contractor shall estimate that 10% of existing pipes shall be renewed.

All hoses, pipe/conduit/hose clamps, clamp linings, and all associated hardware shall be renewed. The Contractor shall clean, inspect and repair or renew all brackets. All pipe clamps shall be lined with new anti-squeak tape."

**ITEM SEVENTEEN**

Add TS 4.6, Required CDRLS, Page TS 4-6 as follows:

"CDRL 408 Complete Equivalent Air Brake System Proposal (4.4)"

**ITEM EIGHTEEN**

Change TS 5.4.1.1, Design Criteria, Page TS 5-3, third paragraph, second sentence to read as follows:

"Each evaporator/blower unit shall include a blower assembly, flexible plenum, evaporator coil, evaporator coil stainless steel support frame, evaporator feed piping and auxiliaries, electric heat assembly, and stainless steel drain pan."

**ITEM NINETEEN**

Change TS 5.4.1.1, Design Criteria, Page TS 5-3, fourth paragraph, first sentence to read as follows:

"Solid state and microprocessor controls shall be ~~utilized~~ as specified in Section 5.4.1.5."

**ITEM TWENTY**

Change TS 5.4.1.3, Compressor/Condenser Assembly, Page TS 5-3, third paragraph to read as follows:

"The ground straps and ~~insulators~~ isolators shall be renewed."

**ITEM TWENTY-ONE**

Change TS 5.4.1.4, Evaporator/Blower Assembly, Page TS 5-3, second paragraph, second sentence to read as follows:

"The Contractor shall apply lubricants, sealant, and painting, using OEM-specified materials and instructions and shall be subject to MTA approval."

**ITEM TWENTY-TWO**

Delete TS 5.4.1.4, Evaporator/Blower Assembly, Page TS 5-4, third paragraph in its entirety.

**ITEM TWENTY-THREE**

Change TS 5.4.1.5, HVAC Control Box, Page TS 5-4, first paragraph, second and third sentences to read as follows:

"The ~~existing control box assembly~~ **underfloor boxes** contains the HVAC temperature control panel, the annunciator and logic panel assembly, and a **separate** high voltage circuit breaker panels. The control panels includes the contactors, electronic circuit boards and other circuitry required to control the refrigeration compressors, blower motors and heaters in response to signals from the temperature sensors."

**ITEM TWENTY-FOUR**

Change TS 5.4.1.5, HVAC Control Box, Page TS 5-4, second paragraph, first sentence to read as follows:

"The Contractor shall ~~renew~~/upgrade the existing control logic to a design that will, in form, fit and function, be interchangeable with the MARC IIB vehicles."

**ITEM TWENTY-FIVE**

Insert TS 5.4.1.5, HVAC Control Box, Page TS 5-4, second paragraph, new third and fourth sentences as follows:

"The panel shall be the latest revision Vapor Stone Rail Systems P/N 20074052201 for the cab car and P/N 20074052202 for the trailer car, and be VSRS TCU 12 based logic control. PTE software shall be compatible with the existing MARC HVAC equipment."

**ITEM TWENTY-SIX**

Delete TS 5.4.1.5, HVAC Control Box, Page TS 5-4, third paragraph in its entirety and replace with the following:

"The Contractor shall renew all relays and lamps. The Contractor shall renew all contactors with railroad-proven contactors subject to the Administration's approval. (CDRL 506) The Contractor shall renew all wiring and terminal boards to OEM requirements."

**ITEM TWENTY-SEVEN**

Delete TS 5.4.3, Floor Heating, Page TS 5-4, first paragraph, last sentence in its entirety.

**ITEM TWENTY-EIGHT**

Change TS 5.4.6, HVAC Testing, Page TS 5-6, first paragraph, last sentence to read as follows:

"The Contractor shall also inject a refrigerant compatible HVAC-R Dye into the refrigerant charge to permit leak detection with the use of UV light, or shall propose an MTA acceptable test procedure."

**ITEM TWENTY-NINE**

Change TS 5.4.6.1, System Performance Test, Page TS 5-6, first sentence to read as follows:

"The Contractor shall perform testing on the first overhauled MARC IIA ~~vehicle cab car~~ at the Contractor's facility, or an Administration-approved location."

**ITEM THIRTY**

Add TS 5.6, Required CDRLS, Page TS 5-7, as follows:

"CDRL 506 Railroad Proven Contactors (5.4.1.5)

**ITEM THIRTY-ONE**

Change TS 6.4.4, Engineer's Door Controller, Page TS 6-3 to read as follows:

"The Contractor shall ~~overhaul~~ renew the Engineer's door controller and ensure its proper local door control functionality."

**ITEM THIRTY-TWO**

Insert TS 6.4.8, Emergency Door Release Assemblies, Page TS 6-4 new second sentence as follows:

"The existing inside and outside cables shall be renewed."

**ITEM THIRTY-THREE**

Change TS 6.4.14, Door Check Assembly, Page TS 6-5, first sentence to read as follows:

"The Contractor shall remove all ear-end vestibule and toilet door check assemblies and overhaul per OEM requirements.

**ITEM THIRTY-FOUR**

Change TS 6.4.15, Door Closing Warnings, Page TS 6-5, first sentence to read as follows:

"The Contractor shall ~~overhaul~~ renew the door closing warning circuits and ensure proper functionality of all door-closing warning circuits."

**ITEM THIRTY-FIVE**

Change TS 6.4.16, Crew Switch Assemblies, Page TS 6-5, first sentence to read as follows:

"The Contractor shall renew all outside ~~and inside crew~~ switch assemblies and associated hardware."

**ITEM THIRTY-SIX**

Change TS 6.4.20, **Override Relay**, Page TS 6-6, to read as follows:

"The Contractor shall verify ~~that the proper operation of the~~ Override Relay (OR) to prevents the door operation by cutting off power to the trainlines and door control switches on the MDCs when the pushbutton "~~Door Open~~" Push Button(s) is activated on the Engineer's console in the cab car."

**ITEM THIRTY-SEVEN**

Change TS 6.4.22, **Side Doors**, Page TS 6-6, fourth sentence to read as follows:

"Door hangers and bottom door guides shall be ~~overhauled~~ renewed."

**ITEM THIRTY-EIGHT**

Change TS 6.4.23, **Passenger Space/Vestibule Doors**, Page TS 6-6, first paragraph, third sentence to read as follows:

"Door hangers shall be ~~overhauled~~ renewed, and adjusted per OEM requirements."

**ITEM THIRTY-NINE**

Change TS 9.4.3, **High Voltage Circuit Breaker Panels**, Page TS 9-4, second paragraph, second sentence to read as follows:

"High voltage circuit breakers shall be ~~overhauled~~ renewed and functionally tested."

**ITEM FORTY**

Delete TS 9.4.3, **High Voltage Circuit Breaker Panels**, Page TS 9-4, fourth paragraph in its entirety.

**ITEM FORTY-ONE**

Change TS 9.4.4, **Low Voltage and Auxiliary Power Circuit Breaker Panels**, Page TS 9-4, second paragraph, last sentence to read as follows:

"Low voltage and auxiliary power circuit breakers shall be ~~overhauled~~ renewed and functionally tested."

**ITEM FORTY-TWO**

Delete TS 9.4.7, **Vehicle Wiring**, Page TS 9-5, fourth paragraph in its entirety and replace with the following:

"All exposed undercar 480 VAC wiring shall be replaced. All other non-repairable conductors shall be renewed."

**ITEM FORTY-THREE**

Change TS 9.4.7.2, Ride Quality Monitoring System (RQMS), Page 9-6, first sentence to read as follows:

"The Administration, under a separate program, has installed RQMS equipment on all MARC IIA cab cars, which includes accelerometers (one on the carbody and one on each truck); a data box in the crew locker (underneath the cab signal locker); an antenna in the roof; hardwiring; and miscellaneous hardware."

**ITEM FORTY-FOUR**

Insert TS 9.4.7.3, 120V Passenger Convenience Outlets, Page TS 9-6, new third sentence as follows:

"The circuits shall be broken out to at least 3 circuits per side of the vehicle and be protected by a GFCI circuit breaker located in the electric locker. Each outlet shall be rated at 15 amps, and each circuit breaker rated at 10 amps."

**ITEM FORTY-FIVE**

Delete TS 9.4.8, Transformers, Page TS 9-6, in its entirety and replace with the following:

"The vehicle's transformers are located beneath the car adjacent to the battery charger. There are three 3 kW transformers in each trailer car and three 5 kW transformers in each cab car. The Contractor shall renew the transformers and associated components."

**ITEM FORTY-SIX**

Insert new section TS 9.4.9, CPBR Relay Modification, Page TS 9-6, as follows:

"The CPBR relay modification shall be configured to match the MARC IIB cars, and shall be submitted to the Administration for review and approval. (CDRL 907)"

**ITEM FORTY-SEVEN**

Add TS 9.6, Required CDRLS, Page TS 9-7 as follows:

"CDRL 907 CPBR Relay Modification Design (9.4.9)"

**ITEM FORTY-EIGHT**

Change TS 12.4.1, Interior Lighting, Page TS 12-2, second paragraph to read as follows:

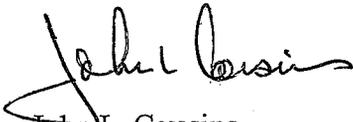
"In the passenger area the fluorescent fixtures and troughs shall be disassembled and cleaned. Ballasts shall be renewed. ~~Missing or broken sockets shall be replaced. All sockets shall be replaced. Cracked or discolored lenses shall be replaced with OEM lenses. All lenses shall be replaced with lenses similar to those installed on the MARC IIB cars.~~ The incandescent fixtures shall be cleaned and the bulbs replaced.

**ITEM FORTY-NINE**

Change **TS Section 18.2.3.5, Monthly Project Schedule Updates, Page TS 18-8**, last paragraph to read as follows:

**'The monthly ~~payment estimate~~ invoice will not be processed ~~prior to~~ before the Administration's ~~approval of~~ approves the monthly progress schedule update in accordance with the requirements of this Section.'**

All other conditions of this RFP remain the same. Any questions may be directed to Yvon J. Dupuis, at 410-767-3591 or faxed to 410-333-4810 or by email at [ydupuis@mta.maryland.gov](mailto:ydupuis@mta.maryland.gov).



John L. Cousins  
Deputy Director  
Procurement Division

Enclosures:  
Attachment A – Answers to RFP Questions No. 1

**T8000-0316 MARC IIA FLEET MID-LIFE OVERHAUL – RESPONSES TO RFP QUESTIONS**

#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
45	General	Pre-Bid Follow-up Request for Second Inspection	Bidder requests an additional inspection of at least one trailer coach car and one cab car to be overhauled. Is this possible? If so, who should the Bidder work with to schedule the inspection?	See Addendum No. 3, Item Three
43	Section I Solicitation Instructions	B.4 Inquiries Pg SI-2	Bidder respectfully requests to extend the closing date for submitting inquiries to September 30, 2010.	See Addendum No. 3, Item One See Addendum No. 4, Item Three
44	Section I Solicitation Instructions	B.6 Closing Date Pg SI-2	Bidder respectfully requests to extend the closing date for proposal submittal to October 29, 2010.	See Addendum No. 3, Item Two
34	Section IV Proposal Exhibits	Exhibit K Insurance Requirements I.A. Commercial General and Umbrella Liability Insurance Pg IR 1 of 2	In order to offer the best price possible to its customers, the Contractor generally provides its insurance coverage under its global policy. As such, the Contractor avoids additional costs related to a separate policy being issued for each project. Would the Administration agree to remove the request to have a general aggregate limit apply separately to this project? A. Commercial General and Umbrella Liability Insurance Contractor shall maintain commercial General Liability (CGL) insurance and, if necessary, commercial umbrella insurance with a limit of not less than \$5,000,000 each occurrence. # such CGL insurance contains a general aggregate limit, it shall apply separately to this project. (...)	There will be no change to Contract Exhibit K, Insurance Requirements, at this time.
35	Section IV Proposal Exhibits	Exhibit K Insurance Requirements I.A.2 and I.B.2 Pg IR 1 of 2	As explained in the Contractor's previous question, in order to reduce its costs, the Contractor provides its insurance coverage under its global policy. Under its policy, the Contractor cannot generate endorsements; however it is entitled to issue insurance certificates which generally contain the information requested by its various customers. As such, would the Administration please consider removing the requirements for endorsements from sections I.A.2 and I.B.2 of Exhibit K?	There will be no change to Contract Exhibit K, Insurance Requirements, at this time.

**T8000-0316 MARC IIA FLEET MID-LIFE OVERHAUL – RESPONSES TO RFP QUESTIONS**

#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
36	Section IV Proposal Exhibits	Exhibit K Insurance Requirements I.A General Insurance Requirements Pg IR-2	Please confirm that an insurance certificate issued by the Contractor's Insurance Brokers will be acceptable to the Administration, as this is the Contractor's regular process contained in its insurance policies?	There will be no change to Contract Exhibit K, Insurance Requirements, at this time.
37	Section IV Proposal Exhibits	Exhibit K Insurance Requirements I.A General Insurance Requirements Pg IR-2	As the insurance policies of the Contractor are considered strictly confidential, the Contractor requests that the obligation to provide a copy of its insurance policies be removed from the Contract.	There will be no change to Contract Exhibit K, Insurance Requirements, at this time.
40	Section IV Proposal Exhibits	Exhibit AA General Provisions Subsection 21, Termination for Default Pg 10 of 25	<p>GP 21 provides a very broad termination right for the Administration throughout the performance of the work by the Contractor. As written, the Administration could terminate the Contract in the event a minor default occurs during the project. Such minor default which would allow the Administration to terminate, based on the contract terms, include a one day delay or the failure of the Contractor to respect a minor technical requirement.</p> <p>The Contractor believes that the Administration does not have the intention of terminating the contract for such a minor technicality or delay, and thus, would suggest a modification to the Contract terms to be more in line with the intent of the parties.</p> <p>The Contractor proposes that the termination for default of the Administration be limited to a material breach of the Contract. Furthermore, in the event such event occurs, Contractor should be given the opportunity to cure the default. Time to cure such default should be at least thirty (30) days and, if not curable within said delay, reasonable steps taken by the Contractor to cure such default during such time period should be acceptable to the Administration. Moreover, any termination right associated with the delay in the performance of the Work by the Contractor should be</p>	There will be no change to Contract Exhibit AA, General Provisions, at this time.

**T8000-0316 MARC IIA FLEET MID-LIFE OVERHAUL – RESPONSES TO RFP QUESTIONS**

#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
			<p>limited to a delay which exceeds the scheduled contract date by least one year.</p> <p>The Contractor proposes to replace the current Sections 21 of the General Provisions with the following wording.</p> <p><u>21. Termination for Default:</u></p> <p>a. The MTA may, subject to the provisions of paragraph c below, by written notice of default to the Contractor, terminate the whole or any part of this contract in any one of the following circumstances:</p> <p>(1) If the Contractor fails to make delivery of the supplies or to perform the services within the time specified herein or any extension thereof, it being understood that the right to terminate included herein shall only be applicable if the delay to perform the services is delayed for a period in excess of twelve (12) months from the contractually scheduled delivery date or (2) if the Contractor fails to perform any of the other material provisions of this contract in accordance with its terms, and in either of these two circumstances does not cure such failure within a period of <del>1030</del> <u>90</u> days (or such longer period as the Procurement Officer may authorize in writing), <u>or in the event such default cannot be remedied within such time, then start to proceed with reasonable steps to cure such default within the above mentioned period after receipt of notice from the Procurement Officer specifying such failure.</u></p> <p>The rest of the provision remains unchanged.</p>	
1	SP Section A Summary of Work	A.5.1 MTA/MARC Facilities Pg A-6	<p>In order to limit its exposure to liquidated damages for delay during the performance of the Contract, in the event any MTA-furnished facility or equipment (including access to the mainline track for acceptance testing) is not available to the Contractor, the Contractor kindly requests that an automatic extension of time be given to the Contractor for a period of time corresponding to the delay caused by the non-availability of the MTA-furnished facility or equipment.</p> <p>Contractor requests that the following wording be added at the end of the current Section A.5.1:</p> <p><i>"In the event any MTA-furnished facility or equipment is not available to the Contractor, and that such non-availability</i></p>	<p>There will be no change to the Specification Special Provisions at this time.</p>

**T8000-0316 MARC IIA FLEET MID-LIFE OVERHAUL – RESPONSES TO RFP QUESTIONS**

#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
4	SP Section D Prosecution and Progress	D.4 Authority of the Administration Pg D-1	<p><i>causes a delay in the performance of the Work to the Contractor, an automatic time extension to the Work Schedule shall be given to the Contractor for a period of time corresponding to the non-availability of the MTA-furnished facility or equipment.</i></p> <p>Please confirm that the proposed language is agreeable.</p> <p>As you may know from previous overhaul projects that the MTA has performed, overhaul projects often require that additional work be performed by the Contractor due to the pre-existing condition of the vehicles that could not be identified during the bid phase. Examples of such pre-existing defects include corrosion or out of scope material which is defective.</p> <p>Although we realize that the Administration has provided for a \$2M USD work allowance to cover such extra costs, the Contractor would like to inform the Administration that in addition to the additional costs that may be necessary to execute such additional work, a timely notice from the Administration is essential to allow the Contractor to perform such tasks in a minimal amount of time.</p> <p>For instance, in the event the Contractor informs the Administration that additional work is required due to a pre-existing defect on an MARC IIA car, the Contractor kindly suggests that the Administration provide its confirmation to proceed on such work as soon as possible, as any delay to provide such confirmation may delay the contract schedule and also cause a lack of productivity for the Contractor.</p> <p>In line with the above mentioned comment, would the Administration agree to modify this Section of the Special Provisions to incorporate a faster response time in the event that an existing pre-condition of an MARC IIA car necessitates additional work for the Contractor.</p>	<p>There will be change to the Specification Special Provisions at this time.</p>

**T8000-0316 MARC IIA FLEET MID-LIFE OVERHAUL – RESPONSES TO RFP QUESTIONS**

#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
			<p>The Contractor suggests the following new language:</p> <p>D.4 Authority of the Administration</p> <p>In exercising the specific authority granted it under other provisions of the Contract and in any case not covered by such specific authority, the Administration shall have authority to decide all questions as to interpretation and fulfillment of Contract requirements, including all questions as to the prosecution, progress, quality, and acceptability of the work. The Administration shall provide a written response to submittals received from the Contractor within twenty (20) working days of receipt, <u>except in the event where the Contractor informs the Administration that additional work is required due to the pre-existing condition of the MARC IIA cars, in which case the Administration shall authorize the Contractor to proceed within 2 working days of receipt of notice.</u> The Administration may implement and enforce its decisions by orders, instructions, notices, and other appropriate means. The Contractor shall provide a written response to submittals received from the Administration within twenty (20) working days of receipt. [The rest of the provision remains unchanged.]</p>	
5	SP Section D Prosecution and Progress	D.5.1 Hierarchy of Documents Page D-2	<p>The Contractor respectfully requests that the hierarchy of documents include, at its highest level, all Amendments to the Executed Contract which have been signed and agreed upon the parties, including those amendments which are pursuant to Change Orders.</p> <p>In view of this, please note suggested change in the suggested wording column of this document.</p> <p>D.5.1 Hierarchy of the Documents Any inconsistency in requirements of the Contract documents shall be resolved by giving precedence in the following order:</p> <ul style="list-style-type: none"> <li>A. <u>Amendments to the Executed Contract, including Amendments pursuant to Change Orders</u></li> <li>B. Executed Contract</li> <li>C. General Provisions</li> </ul>	There will be no change to the Specification Special Provisions at the time.

**T8000-0316 MARC IIA FLEET MID-LIFE OVERHAUL – RESPONSES TO RFP QUESTIONS**

#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
6	Section D Prosecution and Progress	D.10 Liquidated Damages for Times of Completion Pg D-3	<p>D. Special Provisions E. Technical Specification F. Cited Codes and Standards G. Contractor's Proposal</p> <p>Any letters of agreement incorporated by contract or addenda.</p> <p>In order to allow the Contractor to evaluate its internal risk associated with a late delivery of the Project, the Contractor suggests capping all liquidated damages at an amount which is equal to five percent (5%) of the total contract price.</p> <p>As the objective of liquidated damages is to compensate the Administration for any damage they sustain due to the delay of the Contractor to complete the Contract, and that during such period of time, the need to terminate the Contract by the Administration should be limited as they obtain a monetary compensation for the delays, the Contractor suggests capping the liquidated damages, following which a termination for delay will be possible.</p> <p>This cap allows the Contractor to better establish its exposure to a termination for delay, which is important for the Contractor as any termination is the most severe consequence that the Contractor may face. In addition, as the Administration obtains monetary compensation during such time, they are well protected against any such delay until the cap is reached.</p> <p>The Contractor respectfully requests that the Administration accept the additional language proposed by the Contractor.</p> <p>D.10 Liquidated Damages for Times of Completion If all or any designated portion of the Work called for under the Contract is not completed and delivery is not made within the number of days set forth in Section A.4.5 or any subsequent revisions thereto by Change Order, damage will be sustained by the Administration. In such an event, the Contractor shall pay to the Administration the amount set forth in the following as liquidated damages per calendar day for every day's delay prescribed. The Administration may</p>	<p>There will be no change to the Specification Special Provisions at this time.</p>

**T8000-0316 MARC IIA FLEET MID-LIFE OVERHAUL – RESPONSES TO RFP QUESTIONS**

#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
7	Section D Prosecution and Progress	D.11 Suspension of Work Pg D-4	<p>deduct the sum of liquidated damages from any monies due, or if such monies are insufficient, the Contractor or his Surety(ies) shall pay to the Administration any deficiency in monies within 30 days of demand therefore by the Administration.</p> <p><u>The aggregate amount of liquidated damages will be capped to a maximum of five percent (5%) of the total contract value. Liquidated damages shall be the sole remedy available to the Administration for any delay in completion of the work by the Contractor, unless the above mentioned cap is reached, in which case, the Administration shall have the right to terminate this Contract for default. This cap shall not be construed as limiting the Administration's damages for any other claims beyond the late delivery of the overhauled vehicles.</u></p> <p>[The rest of the provision remains unchanged.]</p> <p>Although the Contractor understands that the Administration requires the right to suspend the work during the contract, as unforeseen events may occur for which a suspension to the work is adequate, the Contractor believes that allowing the Administration to suspend the work for an indefinite period may cause financial hardship not only to the Contractor itself, but also to its employees and subcontractors.</p> <p>In order to reduce the risks and costs associated with the uncertainty of an indefinite suspension (such as not being able to bid new work, deeply affecting the production line and more importantly, furloughing employees for an indefinite amount of time), the Contractor requests that in the event a suspension goes beyond 90 days, either party would have the right to terminate the contract in accordance with the termination for convenience provision (General Provisions, Section 20).</p> <p>The Contractor suggests the following change: D.11 Suspension of Work The Procurement Officer unilaterally may order the Contractor in writing to suspend, delay, or interrupt all or any part of the work for a period of time as the officer may determine to be appropriate for the convenience of the State.</p>	There will be no change to the Specification Special Provisions at this time.

**T8000-0316 MARC IIA FLEET MID-LIFE OVERHAUL – RESPONSES TO RFP QUESTIONS**

#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
8	SP Section F Legal Requirements	F.2 Laws to be Observed Pg F-1	<p><i>In the event the contract is suspended, delayed or interrupted for a period of time in aggregate which exceeds ninety (90) calendar days, either party may, by giving written notice to the other, terminate this contract. In such an event, the termination shall be deemed a termination for convenience in accordance with Section 20 of the General Provisions.</i></p> <p>If the performance of all... [the rest of the provision to remain unchanged.]</p> <p>The Contractor agrees that it shall perform the work in accordance with all applicable laws and regulations. However, in the event a change in law or regulation occurs following the submittal of the Contractor's bid and that such change impacts the price and/or the delivery schedule of the project, the Contractor proposes that such modification be subject to the Changes clause of the contract, and that an equitable adjustment be made accordingly.</p> <p>1. Please confirm if the proposed change is acceptable: F.2 Laws to be observed</p> <p>The Contractor shall keep fully informed of all Federal, State, and local laws, ordinances, and regulations of all authorities that in any manner affect those engaged or employed on the Work or in any way affect the conduct of the Work. The Contractor shall at all times observe and comply with all such laws, ordinances, regulations, orders, and decrees. The Contractor shall protect and indemnify the Administration and its representatives against any claim or liability arising from or based on the violation of any law, ordinance, regulations, order or decree, whether by itself, its employees, or its subcontractors. Particular note should be made of all contractual requirements and General Conditions of this contract. The provisions of this Contract will be governed by the law of the State of Maryland in accordance with COMAR regulations and Section 41, General Conditions. <u>In the event a change in the laws, regulations or norms following the bid deposit date impacts the scope of work to be performed or the delivery schedule of this contract, an equitable adjustment to the price and/or delivery schedule shall be made according to the Changes clause of this contract.</u></p>	There will be no change to the Specification Special Provisions at this time.

**T8000-0316 MARC IIA FLEET MID-LIFE OVERHAUL – RESPONSES TO RFP QUESTIONS**

#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
9	SP Section F Legal Requirements	F.2.3 Hazardous Materials Pg F-1	<p>The provisions states:  <i>"potential Proposers should note that other hazardous materials may be present in the vehicle(s) to be overhauled. It is the Contractor's responsibility to lawfully remove and dispose of all other hazardous materials, as needed to accomplish the overhaul work; and the work is considered to be part of its Price Proposal. The Administration will not accept change orders for removal and disposal of any other hazardous material from the as-built vehicle(s)."</i></p> <p>1. Can the Administration clarify what other hazardous materials may be present?</p> <p>2. Please define what hazardous material was used when the vehicles were built, and if applicable, when the Administration maintained or made modifications to the vehicles.</p> <p>The provision states the Administration will not accept change orders, and the remediation effort must be part of our Price Proposal, but there is no indication what hazardous material may be present, or the location of it. This present situation will cause the Contractor to guess at the risk associated, and will result in additional cost that may be excessive if the scope of work cannot be defined or limited.</p>	<p>1. At this time the Administration cannot clarify what other hazardous materials may be present.</p> <p>2. It is unknown what hazardous material was used when the vehicles were built.</p> <p>There will be no change to the Specification Special Provisions at this time.</p>
10	SP Section F Legal Requirements	F.4.1 General Warranty Pg F-3	<p>As we believe that the Administration is best placed to determine the intended purpose of the material provided, the Contractor believes that the warranty provision should be limited to the purpose described in the specification.</p> <p>Would the Administration please consider the modified language proposed?</p> <p>F.4.1 General Warranty  The Contractor warrants the title [...] or any part thereof.  The Contractor warrants that all goods, supplies, systems, equipment, design, and all work covered by this Contract, including subcontractors and suppliers (except Administration-furnished equipment), shall be <i>satisfactory for their intended purpose contained herein</i>, shall conform to, and perform as called for in, the Contract requirements and specifications, and</p>	<p>There will be no change to the Specification Special Provisions at this time.</p>

**T8000-0316 MARC IIA FLEET MID-LIFE OVERHAUL – RESPONSES TO RFP QUESTIONS**

#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
31	SP Section F Legal Requirements	F.4.1.3 Engineering Support Pg F-3 F.4.1.4 Safety Defects Pg F-4	<p>shall be free from all defects and faulty materials and workmanship. Any goods, supplies, systems, equipment, design and Work found to be defective within the warranty period shall be repaired, remedied or replaced by the Contractor, free of all charges including transportation. Any latent defects discovered, including but not limited to goods, supplies, systems, equipment, design, and work shall be repaired, remedied, or replaced by the Contractor free of all charges, including transportation.</p> <p>The warranties included in Sections F.4.1.3 and F.4.1.4 far exceed the warranties usually provided in the industry and could add significant costs to the project.</p> <p>The Contractor would gladly support an Administration initiative by providing a separate proposal to perform such tasks. If the need arises that an event related to Sections F.4.1.3 and F.4.1.4 occurs between the end of the general warranty period and the 5 years requested in the above Sections, it is difficult for the Contractor to evaluate the cost that could be associated with such obligations. Adding these costs to a fixed price proposal at the bid phase will add significant costs to the entire project. We believe the chance the Administration will need such support is very small for the overhaul of MARC cab cars and coaches.</p> <p>As a result, and in order to significantly reduce the price of the project for the Administration, the Contractor respectfully requests that these warranty obligations be removed from the Contract.</p>	<p>There will be no change to the Specification Special Provisions at this time.</p>

**T8000-0316 MARC IIA FLEET MID-LIFE OVERHAUL – RESPONSES TO RFP QUESTIONS**

#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
38	SP Section F Legal Requirements	F.4.3 High Failure Rate Pg F-4 F.4.5 Reliability Requirements for Overhauled MARC IIA Cars Pg F-6	<p>The intent of a reliability program is to make sure that reliability is built-in to the design of the rail car. Considering that the major scope of this contract is to overhaul or replace without changing the design of the existing equipment, the Contractor cannot take responsibility for the existing design reliability performances. Moreover, items requiring new design represent a small portion of items listed in Exhibit 18-2.</p> <p>Consequently, the Contractor requests that sections F.4.3 and F.4.5 of the Special Provisions and section 18.7 of the Technical Specification be removed.</p>	<p>There will be no change to the Specification Special Provisions at this time.</p>
12	SP Section F Legal Requirements	F.4.6 Costs Pg F-6 And F.4.8 Timeliness G F-8	<p>By setting out and defining explicitly the contractual warranties that are applicable to the contract and excluding implied warranties from the contract, you allow the Contractor to better establish its obligations which results in the most advantageous price for the Administration.</p> <p>As the Contractor believes that the Administration is looking for the most advantageous offer and that the express warranties contained in the contract are quite defined and exhaustive, the Contractor would like to confirm its assumption that implied warranties are excluded from the Contract.</p> <p>1. Should the above assumption of the Contractor be correct, would the Administration consider specifying this in the Special Provisions and eliminating the reference to implied warranties contained in Section F.4.6 and F.4.8.</p>	<p>There will be no change to the Specification Special Provisions at this time.</p>

**T8000-0316 MARC IIA FLEET MID-LIFE OVERHAUL – RESPONSES TO RFP QUESTIONS**

#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
13	SP Section F Legal Requirements	F.4.9 Performance Bond Pg F-7	<p>1. Please clarify the length of time that a Warranty Bond will be required. Typically, the Warranty Bond is only required during the General Warranty period of the Contract, and it would therefore expire two years after the conditional acceptance of the last MARC IIA car overhauled by the Contractor.</p> <p>2. Kindly confirm that the above interpretation of the Contractor is correct. Additionally, please note that as the exposure of the Administration decreases as each MARC IIA car goes out of its general warranty period, it is customary to have the value of the Warranty Bond reduced proportionately when each MARC IIA car has completed its general warranty period. This will reduce the cost for the bond for the Contractor, and hence reduce the overall cost for the project for the Administration. The Contractor suggest the following language: "F.4.9 Performance Bond The Contractor's Performance Bond shall continue in full force and effect during the general warranty period <del>period of the</del> warranties herein specified; however, after Final Acceptance of the last MARC IIA car, a new Bond equal to 10 percent of the contract value will be acceptable, <u>which value shall be reduced proportionally upon completion of the general warranty period for each MARC IIA car</u>"</p>	<p>There will be no change to the Specification Special Provisions at this time.</p>

**T8000-0316 MARC IIA FLEET MID-LIFE OVERHAUL – RESPONSES TO RFP QUESTIONS**

#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
14	SP Section F Legal Requirements	F.5 Risk of Loss Pg F-7	<p>The risk of loss generally lies with the person in possession or control of the property, since they are in the best position to prevent such loss. Since the Contractor does not have control of the cars once they are delivered to the Administration and that the Contractor can only insure the cars when they are under its care, custody and control, the Contractor believes it would be more equitable to transfer the risk of loss to the Administration at such time.</p> <p>The Contractor kindly requests that the Administration modify this section of the Special Provisions to the language proposed by the Contractor.</p> <p>"F.5 Risk of Loss Risk of loss will pass to the Contractor upon release of the MARC IIA cars to the Contractor. Risk of loss will pass to the Administration upon delivery conditional acceptance of each MARC IIA car at the Administration's designated location, as defined in Special Provision Section A.8.2, except that loss or damage to equipment resulting from acts of the Contractor shall be the responsibility of the Contractor."</p>	<p>There will be no change to Specification Special Provisions at this time. Please note that the suggested language is already included.</p>
41	SP Section F Legal Requirements	F.8 Rights in Technical Data Pg F-9	<p>The technical knowledge and intellectual property of the Contractor and its subcontractors is deemed to be extremely confidential by the owners of such rights.</p> <p>The technical know-how and knowledge that the Contractor and its subcontractors have developed over the many decades of work in the rail industry is what allows us to excel and keep a competitive edge against our competitors.</p> <p>Should any disclosure, duplication or copy of such technical know-how and knowledge occur during the contract, this would hinder the Contractor and its subcontractors' ability to do business in the industry, as such disclosure could reduce any competitive advantage the Contractor or its subcontractors possess.</p> <p>Additionally, the Contractor believes that it is not necessary for the Administration to possess such technical data, but rather, that it's important for the Administration to be able to use all</p>	<p>There will be no change to Specification Special Provisions at this time.</p>

**T8000-0316 MARC IIA FLEET MID-LIFE OVERHAUL – RESPONSES TO RFP QUESTIONS**

#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
			<p>technical data which is transferred to the Administration pursuant to the Agreement, so that it may use, operate, maintain and repair the rail equipment overhauled as part of this Contract.</p> <p>The additional rights which are currently requested by the Administration would in fact allow the Administration to produce the material itself, which the Contractor believes is not the intent of the Administration, and would also allow the Administration to disclose such rights to third parties which in turn could manufacture the products, which the Contractor wants to avoid.</p> <p>Moreover, in many cases, the Contractor does not possess the right to disclose the technical data of its subcontractors, which means that it could not fulfill the contractual terms imposed by the Administration as its subcontractors refuse to disclose this information.</p> <p>As a result, keeping the contractual terms "as requested by the Administration" would either put the Contractor in a position where it cannot bid the project, significantly decrease the number of subcontractors interested in providing services or cause a significant cost increase to perform the Contract.</p> <p>The Contractor therefore strongly suggests that the Administration modify section F.8 of the Special Provisions so that the rights in technical data of the Administration be limited in a way where the Administration can use, operate, maintain and repair its fleet, but not disclose or use the technical data for other means.</p> <p>The Contractor kindly requests that the Administration adopt the following proposed language.</p> <p><i>F.8 Rights in Technical Data</i>  <i>Technical data means any and all information of a scientific or technical nature, regardless of form or characteristics, to be furnished by the Contractor pursuant to this Contract. It</i></p>	

**T8000-0316 MARC IIA FLEET MID-LIFE OVERHAUL – RESPONSES TO RFP QUESTIONS**

#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
15	SP Section F Legal Requirements	F.10 Indemnity Pg F-11	<p><i>includes, but is not limited to, development or engineering work plus the information used to define a design or process or to procure, produce, support, maintain, or operate the goods, suppliers, systems, and equipment furnished hereunder. Examples of technical data include research and engineering data, proprietary software, production drawings, engineering drawings and associated lists, specifications, standards, process sheets, manuals, technical reports, catalog item identifications, and related information.</i></p> <p><i>The Contractor shall retain the ownership of all Technical Data relating to this Contract, however the Contractor hereby grants the Administration, on the Contractor's behalf, and on behalf of all Subcontractors and Suppliers, a non-exclusive, non-transferable, perpetual and royalty free license to use the Technical Data, and other patented, copyrighted or otherwise protected technology and processes that the Contractor incorporates into the overhauled equipment, solely for the purposes of use, operation, maintenance and repair of the rail equipment overhauled pursuant to this Contract.</i></p>	There will be no change to the Specification Special Provisions or General Provisions at this time.
			<p>As drafted, the General Provisions are currently silent with regards to the Contractor's liability cap, and also expose the Contractor to indirect and consequential damages. As an industry standard, and in order to allow the Contractor to evaluate its risk and offer a better price to the Administration, we suggest that the Section F.10 of the Special Provisions be modified to eliminate any confusion and that the Contractor's suggested wording be used in such provision.</p> <p>Please note that the intent of the proposed language is in no way to limit the Contractor's liability in the event of third party claims, but rather is to limit the Contractor's exposure should the Administration decide to cancel this Contract and either complete the work itself, or have the work performed by another contractor. While maintaining sufficient protection for the Administration, as the completion of the work either through the Administration's employees or by another Contractor's should not exceed the Total Value of the Contract, this limitation of liability allows the Contractor to</p>	

**T8000-0316 MARC IIA FLEET MID-LIFE OVERHAUL – RESPONSES TO RFP QUESTIONS**

#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
			<p>fully evaluate its exposure and as a result, offer a better price.</p> <p>The Contractor requests consideration of the following:                      "F.10 Indemnity                      In lieu of General Provision 13, General Indemnity, the Contractor shall indemnify and save harmless the Administration, and its officers, agents and employees, from any and all claims, demands, suits, loss, damage, injury and liability, including costs and expenses incurred in connection therewith, resulting from, arising out of, or in any way connected with the performance of the Contract, including delivery and any loading of supplies and equipment.                      In no event shall the Contractor be liable to the Administration in a breach of contract action for any indirect, consequential, incidental, or special damages of any kind relating to the Work, and notwithstanding anything to the contrary contained in the Contract, the aggregate liability of Contractor to the Administration for all direct damages arising in connection with the Work and/or Termination of the Work, in whole or in part, for any reason, shall not exceed the Total Contract Price.                      The limitations of liability set forth in this paragraph shall not apply to any third-party claims nor shall this language operate in any way to limit the Contractor's obligation to fully perform all of the contractual obligations, performance requirements and warranty provisions regardless of the Contractor's cost or liability stemming from those obligations.                      Such indemnification shall not be construed to include damages or injuries arising or occurring from the sole negligent acts of the Administration, its officers, agents and employees."</p>	

**T8000-0316 MARC IIA FLEET MID-LIFE OVERHAUL – RESPONSES TO RFP QUESTIONS**

#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
17	SP Section H Measurement and Payment	H.4.5 Payment Provisions Pg H-6	<p>The final sentence of this provision reads as follows: <i>"The Contractor shall certify on each invoice that the total costs invoiced do not exceed the total costs incurred"</i>.</p> <p>The Contractor kindly requests the deletion of this sentence, as if this was the case, it would be impossible for the Contractor to make any profit on the project.</p> <p>"H.4.5 Payment Provisions Progress payments may be submitted on a monthly basis for items contained in Section H.4.1.3 (2) through (11). The Administration will pay the Contractor for the Contract value of the Work, as defined in the approved progress payment request, less retention. Unless otherwise specified, progress payments may be withheld if the Contractor has not complied with the contract documents. <del>The Contractor shall certify on each invoice that the total costs invoiced do not exceed the total costs incurred.</del>"</p>	There will be no change to the Specification Special Provisions at this time.
18	SP Section H Measurement and Payment	H.4.6 Retention Provisions Pg H-6	<p>The Contractor would like to clarify the meaning of the term <i>"substantially complete"</i> used in the second sentence of this provision.</p> <p>The Contractor interprets the words "substantially complete" to mean that retention will be paid to the Contractor upon Conditional Acceptance of the last overhauled MARC IIA car by the Administration.</p> <p>Please note that the performance bond will still be applicable at such time, and that such instrument should offer sufficient security for the Administration to release the amounts withheld at such time.</p>	There will be no changes to the Specification Special Provisions at this time.

**T8000-0316 MARC IIA FLEET MID-LIFE OVERHAUL – RESPONSES TO RFP QUESTIONS**

#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
20	SP Section I Contract Award and Evaluation	I.18.1 Base Contract Pg I-7 And I.18.2 Option Scope of Work Pg I-7	<p>In order to allow more options to the Contractor due to the difficulties currently observed on the Surety market, would the Administration also consider a Letter of Credit in lieu of a Surety Bond for this project.</p> <p>Please note that this also allows greater flexibility for the Contractor to select the least expensive surety for the project which will in turn decrease the price for the Administration. Proposed language as follows:</p> <p><b>"I.18 PERFORMANCE GUARANTEE</b>  <b>I.18.1 Base Contract</b>                      The successful Proposer shall, at the time of execution of the Contract, furnish a Performance Guarantee, either in the form of i) a Surety Bond or Bonds or ii) in the form of a Irrevocable Letter of Credit, in a sum equal to 25% (twenty-five percent) of the amount shown as the Base Scope of Work Total Price [Unit Price Schedule, Line Item (A)], on the forms furnished by the Administration or acceptable to the Administration in the event the Performance Guarantee is furnished via an Irrevocable Letter of Credit. The Bond shall be of a form furnished by the Administration, underwritten by a surety authorized to do business in the State of Maryland, and in the amount specified by this solicitation. Upon receiving notification of contract award, the Contractor shall deliver the Performance Guarantee to the Administration no later than the time the Contractor executes the contract.</p> <p>I.18.2 Primary Option                      Same Modifications as proposed above for this section."</p>	<p>There will be no change to the Specification Special Provisions at this time.</p>

**T8000-0316 MARC IIA FLEET MID-LIFE OVERHAUL – RESPONSES TO RFP QUESTIONS**

#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
21	SP Section I Contract Award and Evaluation	I.18.1 Base Contract Pg I-7 And I.18.2 Option Scope of Work Pg I-7	<p>The Contractor respectfully requests that the Administration consider reducing the value of the Bond proportionately when the MARC IIA cars are conditionally accepted, as the risk for the Administration is reduced upon receipt of each of the overhauled MARC IIA cars.</p> <p>Please note that it is standard in the industry to reduce the value of bonding upon deliveries, as this reduces the costs related for the bonding on the project.</p> <p>Kindly confirm if the proposed additions to Section I.18.1 are acceptable.</p> <p>"I.18.1 Base Contract The successful Proposer [...] executes the Contract. <u>The value of the Bond shall be reduced proportionately, from 25% to 10% of the amount shown as the Base Scope of Work Total Price, upon the Conditional Acceptance of each overhauled MARC IIA car.</u>"</p>	<p>There will be no change to the Specification Special Provisions at this time.</p>
39	TS Section 18 Management and Support Systems	18.2.3.5 Monthly Project Schedule Updates Pg TS 18-8	<p>At the end of section 18.2.3.3, the Technical Specification states that: <i>"The monthly invoice will not be processed before the Administration approves the progress status update"</i>.</p> <p>Although the Contractor understands the importance of the schedule for the Administration and delivering the contract according to such schedule, the above mentioned provision allows the Administration to withhold payment to the Contractor, despite the achievement of payment milestones, because the Administration disagrees with the monthly progress status update.</p> <p>As being paid in a timely manner is one of the most important elements for the Contractor, due to the fact that delayed payments significantly affect the profitability of the project, the Contractor believes that objective payment milestones are essential when working towards a successful project. Having objective payment milestones delayed because of the non-approval of a monthly progress update seems to be an unnecessary and unfair right taken by the Administration.</p>	<p>See Addendum No. 4, Item Forty-Nine</p>

**T8000-0316 MARC IIA FLEET MID-LIFE OVERHAUL – RESPONSES TO RFP QUESTIONS**

#	RFP REFERENCE	RFP SUBSECTION	PROPOSER COMMENT	MTA RESPONSE
			<p>Please remember that these payments, linked to objective payment milestones, will be delayed, regardless of the progress status update, in the event the project is late. As a result, the Contractor requests that the Administration remove the above sentence from the technical specifications.</p> <p>Please note that not doing so will add risk to the project for the Contractor, which will inevitably increase the Contractor's price.</p>	



**MARYLAND TRANSIT ADMINISTRATION**

**MARYLAND DEPARTMENT OF TRANSPORTATION**

Martin O'Malley, Governor • Anthony G. Brown, Lt. Governor  
Beverley K. Swaim-Staley, Secretary • Ralign T. Wells, Administrator

TO: Holders of Contract Documents

FROM: Maryland Transit Administration  
Contract Administration Division  
6 Saint Paul Street  
Baltimore, Maryland 21202-1614

SUBJECT: Addendum No. 3  
RFP No. T-8000-0316  
Procurement of the MARC IIA Fleet Mid-life Overhaul

DATE: August 20, 2010

Issued herewith and effective this date is Addendum No. 3. The Offeror shall include acknowledgement of receipt of this Addendum in the proposal cover letter as detailed in Section II, Proposal Form, Part 8, acknowledge receipt of addenda.

**ITEM ONE**

The closing date for questions or inquiries on this RFP is revised to **September 24, 2010**. All questions must be in writing. **Receipt of proposals to this solicitation will be accepted until, but not after 2:00 p.m. local time, on the revised date of October 22, 2010**, at the following location:

Maryland Transit Administration  
Procurement Department, 7<sup>th</sup> Floor  
Yvon Dupuis  
6 Saint Paul Street  
Baltimore, MD 21202

T8000-0316  
Addendum No. 3

6 Saint Paul Street • Baltimore, Maryland 21202-1614 • TTY 410-539-3497 • Toll Free 1-866-743-3682

**ITEM TWO**

Section I. SOLICITATION INFORMATION AND INSTRUCTIONS, Part A.1 Schedule of Activities is **modified to reflect a revised PROPOSAL DUE DATE of October 22, 2010**, at 2:00 p.m. local time.

**A.1 Schedule of Activities**

The MTA has established the following schedule for this RFP. The anticipated dates are only an estimate, and the MTA shall adjust the dates at its sole discretion.

<b><u>ITEM</u></b>	<b><u>DATE</u></b>
RFP Issue Date	June 30, 2010
Pre-Proposal Conference and Vehicle Inspection (10:00 a.m.)	August 5, 2010
Proposal Inquiry Deadline	September 24, 2010
Closing Date for Receipt of Proposals (2:00 p.m.)	October 22, 2010
Discussions (if held)	November 2010
Anticipated Selection Date	January 2010
Anticipated Notice to Proceed	March 2010

**ITEM THREE**

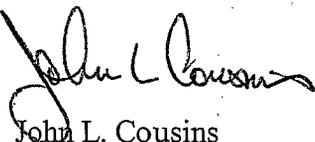
An additional MARC IIA car inspection has been scheduled at MARC's **Frederick Yard on Saturday, August 28, 2010**, from 9:00 a.m. to 2:00 p.m. Offerors will be given access to all sides of the vehicle. The address for the Frederick Yard is:

7900 Reichs Ford Road  
Frederick, MD 21704

**ITEM FOUR**

The Pre-Proposal Conference Attendance Sign-in Sheets are included in Attachment A. For information purposes, the Pre-Proposal Conference Transcript is included in Attachment B.

All other conditions of this RFP remain the same. Any questions may be directed to Yvon J. Dupuis, at 410-767-3591 or faxed to 410-333-4810 or by email at [ydupuis@mta.maryland.gov](mailto:ydupuis@mta.maryland.gov).



John L. Cousins  
Deputy Director  
Procurement Division

Enclosures:

- Attachment A – Pre-Proposal Conference Attendance Sign-in Sheets
- Attachment B – Pre-Proposal Conference Transcript

**ATTACHMENT A  
PRE-BID CONFERENCE ATTENDANCE  
SIGN-IN SHEETS**

PRE-BID MEETING ATTENDANCE  
 CONTRACT NO. T-8000-0316  
 MARC IIA Vehicle Overhaul  
 August 5, 2010 @ 10:00 AM

CONTACT PERSON	NAME OF FIRM	TELEPHONE/ E.MAIL
DAVID CARON	ARB	514-420-3100 David.b.Caron@CA-abb.com
Robert DeSAIUD	ZCA/TA	607-324-0216 rdesaiud@tca1k.com
RANDY HARKENRIEDER	ATM	607-698-4606 Ex 310 Sandy.harkenrieder@atmrrail.com
BOB ARCHIBALD	WABTEC	215-736-1144 arch1144@nni.com
Bill Slater	wabtec	302-324-5390 wslater@wabtec.com
Craig Berger	RTR	413-298-0025 c.berger@rtstechnologies.com
JACK STRAUB	RTR	413-429-1935 j.straub@rtrtechnologies.com
Nelson Rivas	MATRIX Railway	631-643-1483 NRIVAS@MATRIXRAILWAY.COM
Sue Mason	Booz Allen	410-986-3414 mason-sue@bah.com
Balaji Krishnamurthy	Booz Allen	Krishnamurthy_balaji@bah.com
Frich Kolig	Booz Allen	Kolig_frich@bah.com
CLINT WICKENS	BOMBARDIER	CLINT.WICKENS@US.TRANSPORT.BOM.S
HAL LINDSEY	BOMBARDIER	HAL.LINDSEY@US.TRANSPORT.BOMBARDIER.COM
Meredith Carter	Knorr Brake	Meredith.Carter @knorrbrakecorp.com

PRE-BID MEETING ATTENDANCE  
 CONTRACT NO. T-8000-0316  
 MARC IIA Vehicle Overhaul  
 August 5, 2010 @ 10:00 AM

CONTACT PERSON	NAME OF FIRM	TELEPHONE/ E.MAIL
Allan Bosley	KNORR BRAKE	943-992-3458 allan.bosley@knorrbrake.com 914-376-4700 ext 1559
MAURICE ANDEIANI	KAWASAKI RAILCAR	ANDEIANI@KAWASAKIRAILCAR.COM 914-376-4700 Ext 2440
NEHRA SATHOD	KAWASAKI RAILCAR	SATHOD@KAWASAKIRAILCAR.COM 814-849-2000
Joel McNeil	Brookville Equipment	j-mcneil@brookvilleequipment.com 814-849-2065
Oliver Kerr	Brookville Equip.	OKerr@Brookvilleequipment.com 610-738-1200
Spencer Lin	Westcode Inc	slin@westcodeus.com 610-738-1200 x120
Aleks Lapinski	Westcode Inc.	alapinski@westcodeus.com 302-655-6665
Stephen Rozanski	Delaware Car Co.	srozanski@delawarecar.net 302-455-6665
Thomas Crowley	Delaware Car Co.	tcrowley@delawarecar.net 215-939-7534
Rob MAGDULE	HOPPECKE BATTERIES	RMAGDULE@HOPPECKE-US.COM 410-549-6762
ALAN Zubon	MTA/MARC	ALAN4891@AOL.COM 301-481-3400
EARL BLACK	MTA/MARC	EBlack@MTA.MARYLAND.GOV. 814-406-4274
Gary Widell	Nippon Sharyo	gwidell@atlanticbb.net rolando.martin@sepsa.es 518 698 5955.
Rolando Martin	SEPSA SCT	

PRE-BID MEETING ATTENDANCE  
 CONTRACT NO. T-8000-0316  
 MARC IIA Vehicle Overhaul  
 August 5, 2010 @ 10:00 AM

CONTACT PERSON	NAME OF FIRM	TELEPHONE/ E.MAIL
Eric Schook	Amsaldo STS USA	412-688-3037 eric.schook@amsaldo-sts.us
Mike von Lange	WESTCODE	610 738-1200 ext 103 M.vonlange@westcodeus.com
Keith Rice	Sepsa W.A.	518-698-5949 Keith.Rice@sepsa.us elisa.vlange@aol.com
Elisa von Lange	Globe-Connect LLC	717-799-5475
Rex Springston	MARC	410 454 7297
Yvon Dupuis	EAH / MTA	410-767-3591 YDUPUIS@MTA.MARYLAND.COM
Paula Cullings	OFP / MTA	410-767-3934 PCullings@MTA.Maryland.gov
LUIGI SAIN	PHW	412 825 7511 LSAIN@PHWINC.COM
JOHN HARRISON	PHW	JRHARRISON@PHWINC.COM
Anthony Berouty	AQUAS Inc.	aberouty@aquasinc.com
Jeff Batchen	A/STEM	Jeff.Batchen@Target-A/STEM.com

SITE VISIT ATTENDANCE  
 CONTRACT NO. T-8000-0316  
 MARC IIA Vehicle Overhaul  
 August 5, 2010 @ 10:00AM-12:00PM

CONTACT PERSON	NAME OF FIRM	TELEPHONE/ E.MAIL
Rich Hean	GMI	607-281-1325
DAVID COLGAN	GMI	607-281-1325
Stephen Colgan	AQUAS	scolgan@aquasinc.com 301-654-4000
William Ellerman	BAA/MTA	410-767-3363 WELERMAN@MTA-MARYLAND.GOV
Lena Walsh	RL Controls, LLC	LENA@RLCONTROLS.COM 617 6998255
Bill Hennigan	RL Controls LLC	BILL@RLCONTROLS.COM 617 6998255
CHARLIE HANU	SKODA ELECTRA	410 208 4736 CHARLIE.HANU@SKODA.CZ
TOMOAKI MORIKAWA	BBA Project, Inc	914 3458709 BBA.NY@BBAPROJECT.COM

**ATTACHMENT B  
PRE-BID CONFERENCE TRANSCRIPT**

OFFICIAL TRANSCRIPT OF THE  
MARYLAND DEPARTMENT OF TRANSPORTATION  
MARYLAND TRANSIT ADMINISTRATION

PRE-BID MEETING

FOR

MARC IIA FLEET MID-LIFE OVERHAUL

BID NO.: T-8000-0316

August 5, 2010

10:00 A.M.

Maryland Transit Administration  
MTA Riverside Locomotive Facility  
1600 Ludlow Street  
Baltimore, Maryland 21230

Appearances:

William C. Ellerman, Booz Allen Hamilton  
Alan R. Zubor, AECOM  
Balaji Krishnamurthy, Booz Allen Hamilton  
Jack Straub, RTR Technologies, Inc.  
Craig Berger, RTR Technologies, Inc.  
(continued on attached attendance list)

Agency:

Yvon Dupuis, BAH, Procurement Office  
Rex A. Springston, MTA, Chief Mechanical Engineer  
Paula Cullings, MTA Office of Fair Practices  
Al Zubor, MTA, Rail Vehicle and Systems Equipment  
Earl Black, MTA Inspector

Court Reporter:  
Lisa Campbell  
One Stop Legal  
Hyattsville, MD 20784  
(301) 379-6607

1 MR. DUPUIS: Good morning. My name is Yvon Dupuis, and I am from the  
2 MTA's Procurement Office, sole point of contact for this Solicitation. I welcome you to the Pre-  
3 proposal Conference for the MARC IIA Vehicle Overhaul Solicitation. I'd like to turn the  
4 meeting over to Mr. Bill Ellerman who will now conduct the remainder of this meeting.

5 MR. ELLERMAN: Thank you. Welcome, everyone. First I want to ask if  
6 everyone signed in? Perhaps the most important thing I'm going to say today and that is, nothing  
7 that is said here today supersedes anything that you find in the RFP or the addendums. While  
8 we're going to ask for questions today, only written questions with written responses from the  
9 MTA issued in addendum are official and become part of the RFP. With that, I'd like to let  
10 everyone know this conference is being recorded. And, so if you speak, identify yourself first  
11 and your firm, and try to speak loudly so that they can pick it up on the recorder. At this time, I  
12 would like the MTA staff to introduce themselves. We'll start with Paula over here.

13 MS. CULLINGS: Good morning. I'm Paula Cullings. I'm the Director of the  
14 Office of Fair Practices.

15 MR. ZUBOR: Al Zubor, Rail Vehicle and Systems Equipment.

16 MR. SPRINGSTON: Rex Springston, Chief Mechanical Office.

17 MR. BLACK: Earl Black, Inspector.

18 MR. ELLERMAN: Okay, that's the team that's going to be working on this  
19 proposal. We're going to go over some key information in the RFP, the most significant is the  
20 procurement. If there's something that you want to question me during the course of my little  
21 discussion here, just stop me. I'll also have time for questions at the end. If you haven't found  
22 the RFP, it's located at the MTA website; [mta.maryland.gov](http://mta.maryland.gov) and it's under "Doing business  
23 with the MTA and Procurement" in the "Procurement Operations Section."

1 Does everybody have a copy of the agenda?

2 And, at the bottom, the most important thing on there is that Yvon Dupuis is the  
3 sole source of contact and his contact information is there as well as in the front of the RFP.

4 Okay, with that, the RFP itself, beginning in Exhibit A, if you decide not to bid  
5 this and you're the prime contractor, the MTA requests that you fill out the No-Bid Form, submit  
6 that to Yvon and let us know why you're not going to bid it so that we can include that in our  
7 future procurements.

8 Section 1 is the Solicitation Information and Instructions. We're using a  
9 competitive sealed proposal procurement method under COMAR, the Code of Maryland  
10 Regulations. The State reserves the right to make the award by item, or group of items or total  
11 bid or elect not to proceed with the award if it is in the best interest of the MTA and the State of  
12 Maryland.

13 Contractual Information is found in Section 1. There's a schedule of activities.  
14 The most important dates as far as right now on the schedule are this pre-proposal conference  
15 today which is today, August 5<sup>th</sup>. There's a deadline for inquiries which is September 10<sup>th</sup>,  
16 submitting inquiries in writing. Closing date for receipt of proposals is 2:00 p.m. on September  
17 30<sup>th</sup>. If we hold discussions, which are planned at this time, we expect it will occur in early  
18 November. We anticipate it will be followed by a written request for BAFO which will be prior  
19 to Christmas and anticipate selecting the awardee in January. We have to get that approved in  
20 Annapolis by the Board of Public Works. That approval will occur in early March. The NTP  
21 will probably be the same day.

22 Has everybody seen the Unit Price Schedule? Any questions on that?

23 That's really where your pricing information is going to be, and that will be, of

1 course, separate all the documents in the price proposal.

2           You're reminded to acknowledge all of the addenda as you submit your proposal  
3 and complete every item on the Unit Pricing Schedule.

4           Proposal Exhibits. We've got about 25 to 30 of those in Section 4. Most of  
5 those need to be filled out and submitted with your proposal, and elsewhere in the RFP we have  
6 a list of what's exactly going to be in your proposal.

7           Section 5, we have a Schedule for Work Completion at SPA.4.5, and that  
8 schedule shows the contract will be complete at NTP plus 815 calendar days.

9           There's no bid bond required with this proposal. There is a performance bond of  
10 25 percent of the total contract price. Inside the contract price is a miscellaneous work  
11 allowance of \$2 million. It's not part of the contract, but it could become part of the contract if  
12 the MTA decides to issue any modifications to the work while it's underway.

13           Liquidated damages are set at \$300 per vehicle per day both the initial two-part  
14 pilot cars and for the fleet as you go through the fleet.

15           In Section F-7, you'll find the Insurance Requirements.

16           Section I is Contract Award and Evaluation.

17           Section I.6 we have the Technical Proposal Evaluation Criteria. And, I want to  
18 point out that it's in descending order of importance. The first listed criteria is the most  
19 important and carries the heaviest weight. That criteria is Technical Accuracy. Basically, it has  
20 all the technical requirements in an RFP. The second most important criteria is the Managerial  
21 Approach and Qualifications. Third is the Compatibility of the Overhaul and Non-overhaul  
22 Vehicles, and fourth and final is Past Performance on Similar Projects.

23           Price proposals will be checked for price realism. Price proposals will be ranked

1 from low to high.

2           Cancellations. The State reserves the right to cancel this RFP in accordance with  
3 COMAR Regulation 21.06.02 as stated in the general provisions of Section 4 Exhibit AA. By  
4 submitting a proposal, the Offeror is deemed to have accepted all the terms and conditions in the  
5 RFP and in the attached general provisions of purchase contracts and in any addendums that are  
6 issued. The proposals will also become part of any contract that is signed.

7           No Living Wage Requirements for this.

8           And, before I ask for questions, did anybody who just arrived please come  
9 forward and sign in. I want to make sure we've got everybody's signature.

10           With that, I'll ask; are there any questions on the procurement part, at this point in  
11 time?

12           [There were no questions.]

13           MR. ELLERMAN: So, everybody likes the RFP and everybody understands  
14 what it says, right?

15           [Laughter].

16           MR. ELLERMAN: Okay, so with that, I'll turn the meeting over to Paula  
17 Cullings, and she'll talk about Minority Business Enterprise.

18           MS. CULLINGS: Good morning, everyone. Actually, we're going to talk about  
19 Disadvantaged Business Enterprise. I'm sorry that I don't have enough (handouts) for everyone,  
20 and you will have to share. We're just going to use this document to kind of go over a couple  
21 things. You will be getting an addendum. The documents you pull down will probably say  
22 "minority business." It is disadvantaged business. Do not use this document to turn in at all. I  
23 hope you all can get together on that because I only have two others, and I know that some folks

1 over here – are you bidding? You want to share that? Another group, I’m sorry. You’ll be able  
2 to understand even if you don’t have a document.

3 In your proposal, you’ll see a section that looks like this. This whole thing will be  
4 removed in an addendum and you’ll get something that looks like this. It must say, “Federally  
5 funded proposal.” You will probably have the contract number on the bottom. That’s what you  
6 would turn in. Do not turn in what I’m showing you, today. This is simply a sample and an  
7 example. So, what we do is ask that you would use Form A, which is the first page, to determine  
8 that you are going to do the goals that we have set. Now, we have set the goals at 13 percent, or  
9 you’re telling us I can’t meet the goals, I’m going to ask for a waiver, or there’s something else  
10 going on. I’ll talk to you about the waiver, later.

11 The second item you’ll send in is an Affidavit. It’s all part of Form A. The third  
12 form you will send in will be Form B, and Form B will give you full instructions. Don’t send me  
13 the instructions. I don’t need that. Behind Form B is a worksheet. Don’t send me your  
14 worksheet. This is for your purpose. Earlier, you heard this is a proposal, not a sealed  
15 competitive bid. So, I don’t want you to put any dollar value here in order to determine your  
16 goal. If you do, keep it to yourself. Do not put it in the package. We don’t need that. All of the  
17 instructions are there.

18 Then, we come to Form B which is a schedule. In the schedule – again, all the  
19 directions are present. It allows you to identify the Minority Disadvantaged Business Enterprise  
20 subcontractor. Now, I use the term minority and disadvantaged because when you go to the  
21 directory at MDOT, this is the only place you’re going to find subcontractors for this contract.  
22 No other certification matters. So, when you talk to your vendors and they say, yes, I’m  
23 certified. If they’re not certified by MDOT, don’t waste your time. We’re not accepting

1 them and your bid will not be accepted, accordingly.

2           When you go in that directory, you're going to see firms that have MBE/DBE.  
3 That's a firm you can use because they're DBE certified. You'll see some firms that are listed  
4 DBE only. That's fine. But, if you see a firm that says MBE only, you cannot use them on this  
5 particular Solicitation. This is strictly Disadvantaged Business Enterprise.

6           We have about 4,000 firms certified all over the world. So, it's not about  
7 Maryland companies only. Whoever's certified in that directory that can do the services and  
8 provide the goods you have in mind that are DBE certified that you find, you can use. You will  
9 name them. You will put their certification number. And, here it asks for NAIC code or  
10 services. If you don't know the NAIC code but you know what you want them to do, if it  
11 mirrors what is written in the directory, then you can write it down. It doesn't matter whether it  
12 is woman owned, African-American or other because there are no split goals. Thirteen percent  
13 anyway you can achieve it.

14           Now, I don't want you to put the dollar amount because this is a proposal. If you  
15 put a dollar amount, then it's calculated where it shouldn't be seen. So, if you want to use  
16 Company Paula for 8 percent, then write 8 percent. Do not write out the dollar amount of what  
17 8 percent is to your price.

18           There's also a section that talks about the 60 percent rule. If you are going to  
19 procure supplies, equipment, items that are not manufactured by the provider in the DBE, then  
20 you will only get 60 percent credit towards your goal of what you spent. So, if you spend a  
21 thousand dollars, you get 60 percent of that thousand dollars toward your goal, and it's all  
22 calculated here for you in the directions. So, if you show the large dollar amount and you show  
23 the other. Here again, because this is a proposal, I would prefer that you show the percentage of

1 that 60 percent so nothing is exposed that shouldn't be exposed too soon. You may make as  
2 many copies of Form B as you need for the firm you plan to use – 13 firms at 1 percent, 1 firm at  
3 13 percent or mix it up any way you like.

4 Form C and D is normally sent in after you have been notified that you are the  
5 awardee. But, it's important that C and D comes in. But, if you care to set a goal in the  
6 beginning, we'll accept it. Form C requires that you tell us how did you go about looking for  
7 your DBE firm. What did you do, run an ad in the paper, have a little meeting or did you just go  
8 to the directory and that's fine? That is considered responsible and responsive. So, it must come  
9 back.

10 And, Form D is used where you will get the signature of the subcontractor. So,  
11 you will make one copy per firm. You will fill it out as the Bidder -- prime. You will identify  
12 yourself and signature. You may fax it to the subcontractor for their signature, and they can fax  
13 it back. We will accept this document in fax format so you're not running all over town trying to  
14 get someone's signature.

15 And, that pretty much concludes what the forms are all about. But, I want to  
16 share with you, however, a few other items that are important. Like I said, you have to be  
17 certified by MDOT.

18 Are there any DBE firms here, today? Now if you're bidding as a prime, you do  
19 not have to have 13 percent subcontractor goals because the work that is here to be done you are  
20 required to do more than that by your own forces. However, if you are going to subcontract  
21 anything in good faith, you can also do subcontracting DBEs, and you would also show them on  
22 your form. You're not required to do so. You may avail yourself to others as a sub and you may  
23 bid as a prime at the same time. There are no exclusivities such as you can only bid with me.

1 Don't bid with anyone else, that's not allowed. Bid with everybody. However, we do reserve all  
2 of the protections that one has for you all that there shall be no collusion. So, you have to handle  
3 that part of your business discreetly and as you see fit. So, you may or may not wish to bid as a  
4 sub and to bid as a prime, and you may say no thank you, whichever the case might be. But, you  
5 are allowed to do both at the same time.

6 The NAIC codes you get, if you don't know what they are for that particular firm,  
7 use what's written in the directory. You can simply write what they're going to do. But, it must  
8 mirror what they have been certified by MDOT to do. So, even if you think, oh, they can do this  
9 too, if it's not written, we're going to throw it out. So, it needs to be very clear.

10 Again, by the standard proposal do not put dollar amounts for what you're  
11 spending on the DBEs. Put percentages only. Do not send us the worksheet. Do not show,  
12 again, dollar amounts.

13 Now, with the allowance that was spoken of, there's a possibility that it could be  
14 utilized. You will still be liable to have participation for that amount of money that was not  
15 expended or used. So, if the allowance monies are there and other work is thought to happen,  
16 that's all part of your total calculation. So, you need to ensure that you're sharing it with your  
17 subs.

18 Anyone who is not certified today by MDOT will not be certified in time to  
19 participate in this Solicitation. So, you will run into firms that will tell you yes, we're certified in  
20 PG County. Yes, my papers are pending. We don't accept pending documents. You're either  
21 certified or you're not. We don't have any other jurisdictions where certification matters to the  
22 State of Maryland. So, don't get caught up trailing with that firm hoping that they're going to  
23 get certified in time because that's not going to happen. It's a long process, and we don't take

1 pending status.

2           We ask that you engage with disadvantaged DBE firms very early. Treat this like  
3 you would treat any supplier information you need early so that you have a commitment. Those  
4 that you list are the firms that we expect you to use. Don't list them as your people and think,  
5 okay, when I get the bid I'll change it up. We won't allow it. So, make sure that the people  
6 you're entertaining are the people you want to have work with you as a team and that they have  
7 everything you're going to need.

8           Once you receive your Award and Notice To Proceed, you will have to prepare an  
9 agreement between you and each of your DBE subs. Your one pager needs to be very clear this  
10 is what I want you to do, this is when I want you to do it. These are the penalties for failing to do  
11 it. This is how you invoice things. This is how you get paid. Those are the essential items that  
12 need to come right upfront so no one is strung along, oh, I thought you was going to have me  
13 come in March. Oh, no, I change my mind or you ask them to hold the price or whatever the  
14 case might be, and that should be in your agreement.

15           Anything we can do to help you, again all questions go to one place. But, every  
16 now and then, you may have a technical question about just what you are trying to do in the  
17 directory. MDOT is available. The phone number is there. I'll give it to you – 410-865-1269.  
18 If you're trying to get into the directory and you're having some quirky problems, that's not  
19 something you write in about. We need to get you moving. You can call them, directly. They'll  
20 navigate you. You can contact my office and we can be of some help technically for those  
21 things. Sometimes it's about just one sub, a question that we did not go over, and that's where  
22 we can provide some technical assistance because we don't want you to miss getting what you're  
23 trying to get done. Sometimes the directory is not always that friendly.

1           There's one other item. When you go into the directory, you might see a firm that  
2 has the letter "G" in front of the NAIC code of what they do. That means they have graduated  
3 from that particular NAIC code and you do not use them to do that particular work. You can use  
4 them for other things that are written. Wherever the "G" is, that means they have exceeded the  
5 program's eligibility for that piece of work, and so therefore, there are other things that they can  
6 do when they're not graduated, help yourself. But, just be very clear and careful of that because  
7 a company that graduated and is no longer DBE, MBE or anything of that particular discipline.

8           I wish you all much success in what you're doing. We feel confident that the 13  
9 percent is an achievable goal in the work that's being offered and I wish you much success in  
10 doing that.

11           Are there any questions regarding the DBE forms or DBE programs? Please  
12 remember you will receive an addendum. We will have the right forms. Wherever the word  
13 "minority" is listed, you need to change to "disadvantaged" and you will have everything  
14 corrected for you. So, hopefully, you will sign on and get your forms in promptly.

15           Are there any questions?

16           [There were no questions.]

17           MS. CULLINGS: What an experienced group. Good luck to all of you.

18           MR. ELLERMAN: Okay. Before we go on, I think we have another late arrival.  
19 So, if you could come up and sign the sign-in sheet. Do that right now.

20           MR. MORIKAWA: Right now?

21           MR. ELLERMAN: Yeah. I also want to say that Addendum 2 will be issued  
22 next week. A few of the things that are being contained are the correct DBE forms. Right now  
23 the forms in the solicitation, the MBE forms are the wrong forms. The correct forms will be

1 coming out in the middle of next week. In addition, the sign-in sheets from today will be in an  
2 addendum too. So, you may receive the contact information for everyone that was here today.  
3 Okay, with that, I'll turn it over to the technical person. Rex.

4 MR. SPRINGSTON: Good morning. Once again, I'm Rex Springston, Chief  
5 Mechanical Officer, and I'm going to, briefly, go over the Scope of Work that will be done on  
6 our vehicles. This is an overhaul of MARC II Fleet. It is 26 cars, 11 cab cars and 15 trailers.  
7 I'll just hit the highlights of the Scope of Work. Like I said, it's all identified in the RFP under  
8 the "Technical Provisions."

9 The Scope of Work will include the shipping of the vehicles from the MTA to the  
10 overhaul site. That will be part of the contract. It will include a major overhaul of all the vehicle  
11 systems. You will need to perform all the qualification and acceptance testing. You're  
12 responsible for providing training programs to all MARC staff and contractors. You will be  
13 revising as-built drawings, documentation of the overhaul, updating any maintenance manuals  
14 and operational manual for changes that are done to the vehicles, providing any special tools and  
15 diagnostic test equipment that will be needed to maintain the equipment, administering warranty  
16 and reliability programs and supporting the MTA system safety program. That's a key  
17 component in, so you need to pay attention to that.

18 That's just a brief overview. Like I said, it's all spelled out in the Technical  
19 Provisions. There are options here. At the time, the RFP funding was kind of – we're not sure  
20 of the funding right now. So, we did put part of it as options. Our intent if the funding is  
21 available is to exercise these options. They would be like on a car body to have all new  
22 passenger windows and rubbers, toilet room modules, seats, flooring, et cetera.

23 As far as lighting, we'd be looking at interior LED system on our vehicles. That

1 would be one option. And, the communication system is an option.

2 So, these are important things and we intend hopefully to exercise these options.

3 But, that will be dependent upon the price and funding. That's spelled out in NTP plus 815 days.

4 The big thing to make sure you pay attention to is like maybe the movement of the vehicles to  
5 and from MTA's site to your site. That's something you need to account for and look at.

6 That's about all I have. I mean, do you have any questions on that? I don't want  
7 to give too many details.

8 MR. GRAY: The drawings – are they going to be made available after award or  
9 are they going to be available prior?

10 MR. ELLERMAN: If you make a request you can get the drawings.

11 MR. SPRINGSTON: Make a request for the drawings by email, and the drawings  
12 will be sent to you.

13 MR. ELLERMAN: Any other questions?

14 MR. CROWLEY: Can I ask one question? Tom Crowley from Dover Car  
15 Company. The pick up and delivery for the cars, where would that be, here or Riverside?

16 MR. ELLERMAN: I don't think we've determined that, have we? That has yet  
17 to be determined. It really would depend upon – we have a couple sites, either Brunswick,  
18 Farley, Riverside and whichever one the contractor would like to work at.

19 MR. SPRINGSTON: I would suggest you submit that question in writing to  
20 Yvon and, it will be answered in an addendum.

21 Any other questions? Technical questions? DBE questions? Any contractual  
22 questions?

23 MR. RIVAS: Yeah, just one question on the drawings. I'm going to be a sub.

1 I'm sorry, Nelson Rivas from Matrix Railway. I'm going to be a sub. So, if I need a drawing, I  
2 go to the car builder and he will ask you, or do I go to you direct?

3 MR. ELLERMAN: You can go directly to Yvon, and he will go to the car builder  
4 or you can do both.

5 MR. RIVAS: All right. Thank you.

6 MR. VON LANGE: Mike Von Lange, Westco. That's a very interesting  
7 question. You will respond to sub level vendor requests for a drawing, provide us drawing  
8 copies of the request?

9 MR. ELLERMAN: Yes, I believe so. But, we will answer that, officially, in  
10 the addendum because anything I say here today is not official– but I think yes is the answer.  
11 Yes, subs may issue questions to the procurement officer who is Yvon. He may answer in an  
12 addenda. But I believe we would also give these drawings to the subs if you want them from us.  
13 You may want to get them from the car builder. That's your choice.

14 MR. RICE: Keith Rice. When will you make a decision on the options?

15 MR. ELLERMAN: We're not sure. It depends on how their funds stand.  
16 There's a lot that plays into that. We expect there will be pricing in the technical proposals.  
17 Let's say at time of Award and NTP. For sure, you'll know at time of Award.

18 MR. BERGER: Craig Berger with RTR Technologies. Bill, is funding in place  
19 for the base order for the 26 cars?

20 MR. ELLERMAN: Yes, that funding's in place and, it's federally funded. So,  
21 it's not the state. It's primarily federal funding.

22 MR. BERGER: Okay. Thank you.

23 MR. ELLERMAN: Any more questions?

1 MR. VON LANGE: Mike Von Lange following up on Craig's question. How  
2 much is that funding?

3 [Laughter]

4 MR. ELLERMAN: Actually, I asked that question – but there is a large federal  
5 grant.

6 Any more questions?

7 MR. CROWLEY: One last one. Tom Crowley, Dover Car Company. Who gets  
8 stated for the performance bond – bid bond requirement?

9 MR. ELLERMAN: No bid bond.

10 MR. CROWLEY: Performance bond equal to 25 percent of the contract value?  
11 What happens if you award the contract and the contractor can't come up with the 25 percent  
12 bond?

13 MR. ELLERMAN: It won't be awarded. Well, by submitting your proposal,  
14 you're going to give us an indication if you can bid the 25 percent bond then we will expect that.  
15 You're actually committing with your proposal unless you tell us otherwise and make an  
16 exception in your proposal that you will be able to perform the 25 percent.

17 MR. CROWLEY: Normally, that's through the bid bond guarantee. The bid  
18 bond guarantee is part of your proposal.

19 MR. ELLERMAN: The bid bond actually locks you into a bid price that no  
20 matter what, you guarantee you'll do the work for that bid price, okay. With proposals, this is  
21 negotiated. We're not looking for that guarantee because we have a probability we'll have  
22 discussions requesting this at final. So, we expect prices will change like the rest of the market  
23 and would be interested in negotiating this thing. So, the bid proposal is actually separate from

1 that. So, when you submit the proposal, that's one of the requirements of the RFP. You're going  
2 to state and probably give some indication from the bonding company that they will in fact be  
3 bonded. Otherwise, as an alternative to that is you take exception to it and say I can do 10  
4 percent bond, or 5 percent or whatever you might say and then that's something that would be  
5 entertained in the discussion negotiations assuming we don't award on the original proposals  
6 which is possible, but unlikely. Does that --

7 MR. CROWLEY: So, you would, generally, award proposals as soon as possible.

8 MR. ELLERMAN: Any other questions?

9 [There were no further questions.]

10 MR. ELLERMAN: Okay, with that, I'll turn it over to you, Rex for the tour  
11 portion of the vehicle.

12 MR. SPRINGSTON: Okay. Right now, we are located on CSX property. CSX  
13 maintenance contractor is here. We have cars set up right outside the door here for viewing. The  
14 track is locked and secured. What we're going to do -- what I would like to do is anybody who  
15 wants to tour the car, I would like to do about five at a time, go in, view the car, come out and let  
16 five more go. That way, we don't get 20 or 30 people in there trying to crowd around. We're  
17 going to go in through this door right here, and the only way I want you to go out that car is  
18 through that door right there. Do not exit on the other side of the car. Do not cross any  
19 tracks. These are live working tracks out there right next to the building. So, as you hang  
20 around outside waiting for your turn to get in, please do not get in front of the car or around on  
21 any tracks in the area.

22 We have a cab car -- right now, it's a MARC IIA cab car, 7747. Part of the scope  
23 was removing the dead man pedal, and we thought this car had one, but this the one we have

1 already changed. So, we will not have one available with the dead man pedal in there. At a later  
2 date, if you need to see one, we can make arrangements for you to see a car with that. There's a  
3 Marc IIA car trailer on the far end. So, if you walk through the middle car to the first car, that  
4 will be the trailer car and you'll be able to see inside of the trailer and a cab car, and on this side  
5 of the vehicles, you can walk and see the outside. We can not let you out on the other side of the  
6 track.

7 Any questions?

8 MR. CARON: Yes. My name is David Caron from ABB. Will all the cabinets  
9 be open?

10 MR. SPRINGSTON: We can have them open. Yes.

11 MR. RIVAS: I need to take some overall dimensions of a box -- battery box. I  
12 was wondering if -- oh, I'm sorry, Nelson Rivas from Matrix. I would like to take some  
13 measurements of the battery charger. Can that be done?

14 MR. SPRINGSTON: We've got drawings that can take care of that.

15 MR. RIVAS: Yeah. But, what about the allowable space? You got some  
16 indication on that?

17 MR. KRISHNAMURTHY: There can be inspections for that at a later date and  
18 time. Also, any questions regarding dimensions, definitely ask your question in writing about  
19 anything you don't understand that's not accessible.

20 MR. SPRINGSTON: If there's a need to, we can set-up for inspections at a later  
21 time. Also, if you have questions on dimensions, ask that question in writing or anything that  
22 you don't understand or that is not accessible.

23 MR. RIVAS: Okay, because they only gave us two weeks to get numbers in. So,

1 I don't have that much time.

2 MR. ELLERMAN: You need to request it in writing and if there's not  
3 enough time, you need to tell us.

4 MR. RIVAS: Okay.

5 MR. SPRINGSTON: Any other questions?

6 Like I said, what we'll do is take five at a time into the vehicle.

7 Why don't we start right over here. Stand over here if anybody wants to go to the  
8 vehicles.

9 MR. DUPUIS: Okay, this meeting is now closed. Thank you very much for  
10 being here and have a good day.

11 (WHEREUPON, the meeting was adjourned.)

12 (A tour of the rail cars occurred immediately followed the meeting).  
13  
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23

**CERTIFICATE OF TRANSCRIBER**

I hereby certify that the Maryland Department of Transportation, Maryland Transit Administration pre-bid meeting for RFP T-8000-0316 on 1600 Ludlow Street in Baltimore, Maryland on August 5, 2010 was recorded by means of electronic sound recording.

I further certify that, to the best of my knowledge, that the foregoing pages represent a complete and accurate transcript of the duplicated electronic sound recording of the proceedings as transcribed by me.

I further certify that I am neither a relative to nor an employee of any attorney or party herein, and that I have no interest in the outcome of this solicitation.

In witness whereof, I have affixed my signature this 6th day of August, 2010.

By:   
\_\_\_\_\_  
Lisa P. Campbell  
Transcriber



MARYLAND TRANSIT ADMINISTRATION

MARYLAND DEPARTMENT OF TRANSPORTATION

Martin O'Malley, Governor • Anthony G. Brown, Lt. Governor  
Beverly K. Swaim-Staley, Secretary • Ralign T. Wells, Administrator

TO: Holders of Contract Documents

FROM: Maryland Transit Administration  
Contract Administration Division  
6 Saint Paul Street  
Baltimore, Maryland 21202-1614

SUBJECT: Addendum No. 2  
RFP No. T-8000-0316  
Procurement of the MARC IIA Fleet Mid-life Overhaul

DATE: August 12, 2010

Issued herewith and effective this date is Addendum No. 2. The Offeror shall include acknowledgement of receipt of this Addendum in the proposal cover letter as detailed in Section II, Proposal Form, Part 8, acknowledge receipt of addenda.

**ITEM ONE**

Delete **Section IV-Contract Exhibits, Exhibit B-Bid/Proposal Affidavit, pages BPA 1-7** in its entirety and replace with **Addendum No. 2, Attachment A.**

**ITEM TWO**

Delete **Section IV-Contract Exhibits, Exhibit E-Minority Business Enterprise** in its entirety and replace with **Addendum No. 2, Attachment B.**

**ITEM THREE**

Insert **Section IV-Contract Exhibits, Exhibit Q-Certification of Lower Tier Participants, page CLP-1**, included as **Addendum No. 2, Attachment C.**

All other conditions of this RFP remain the same. Any questions may be directed to Yvon J. Dupuis, at 410-767-3591 or faxed to 410-333-4810 or by email at [ydupuis@mta.maryland.gov](mailto:ydupuis@mta.maryland.gov).

John L. Cousins  
Deputy Director  
Procurement Division

Enclosures:

- Attachment A – Exhibit B, Bid/Proposal Affidavit
- Attachment B – Exhibit E, Disadvantaged Business Enterprise
- Attachment C – Exhibit Q, Certification of Lower Tier Participants

**ATTACHMENT A**

**EXHIBIT B  
BID/PROPOSAL AFFIDAVIT**

## **.07 Bid/Proposal Affidavit.**

A. Each solicitation shall provide notice that the affidavit in §B of this regulation shall be completed and submitted to the procurement agency with the vendor's bid or offer.

B. Mandatory Solicitation Addendum. The solicitation addendum shall be in substantially the same form as follows:

### **BID/PROPOSAL AFFIDAVIT**

#### **A. AUTHORIZED REPRESENTATIVE**

I HEREBY AFFIRM THAT:

I am the (title) \_\_\_\_\_ and the duly authorized representative of (business) \_\_\_\_\_ and that I possess the legal authority to make this Affidavit on behalf of myself and the business for which I am acting.

#### **B. CERTIFICATION REGARDING COMMERCIAL NONDISCRIMINATION**

The undersigned bidder hereby certifies and agrees that the following information is correct: In preparing its bid on this project, the bidder has considered all proposals submitted from qualified, potential subcontractors and suppliers, and has not engaged in "discrimination" as defined in §19-103 of the State Finance and Procurement Article of the Annotated Code of Maryland. "Discrimination" means any disadvantage, difference, distinction, or preference in the solicitation, selection, hiring, or commercial treatment of a vendor, subcontractor, or commercial customer on the basis of race, color, religion, ancestry, or national origin, sex, age, marital status, sexual orientation, or on the basis of disability or any otherwise unlawful use of characteristics regarding the vendor's, supplier's, or commercial customer's employees or owners. "Discrimination" also includes retaliating against any person or other entity for reporting any incident of "discrimination". Without limiting any other provision of the solicitation on this project, it is understood that, if the certification is false, such false certification constitutes grounds for the State to reject the bid submitted by the bidder on this project, and terminate any contract awarded based on the bid. As part of its bid or proposal, the bidder herewith submits a list of all instances within the past 4 years where there has been a final adjudicated determination in a legal or administrative proceeding in the State of Maryland that the bidder discriminated against subcontractors, vendors, suppliers, or commercial customers, and a description of the status or resolution of that determination, including any remedial action taken. Bidder agrees to comply in all respects with the State's Commercial Nondiscrimination Policy as described under Title 19 of the State Finance and Procurement Article of the Annotated Code of Maryland.

##### **B-1. Certification Regarding Minority Business Enterprises.**

The undersigned bidder hereby certifies and agrees that it has fully complied with the State Minority Business Enterprise Law, State Finance and Procurement Article, §14-308(a)(2), Annotated Code of Maryland, which provides that, except as otherwise provided by law, a contractor may not identify a certified minority business enterprise in a bid or proposal and:

- (1) Fail to request, receive, or otherwise obtain authorization from the certified minority business enterprise to identify the certified minority proposal;
- (2) Fail to notify the certified minority business enterprise before execution of the contract of its inclusion in the bid or proposal;
- (3) Fail to use the certified minority business enterprise in the performance of the contract; or
- (4) Pay the certified minority business enterprise solely for the use of its name in the bid or proposal.

Without limiting any other provision of the solicitation on this project, it is understood that if the certification is false, such false certification constitutes grounds for the State to reject the bid submitted by the bidder on this project, and terminate any contract awarded based on the bid.

#### C. AFFIRMATION REGARDING BRIBERY CONVICTIONS

I FURTHER AFFIRM THAT:

Neither I, nor to the best of my knowledge, information, and belief, the above business (as is defined in Section 16-101(b) of the State Finance and Procurement Article of the Annotated Code of Maryland), or any of its officers, directors, partners, controlling stockholders, or any of its employees directly involved in the business's contracting activities including obtaining or performing contracts with public bodies has been convicted of, or has had probation before judgment imposed pursuant to Criminal Procedure Article, §6-220, Annotated Code of Maryland, or has pleaded nolo contendere to a charge of, bribery, attempted bribery, or conspiracy to bribe in violation of Maryland law, or of the law of any other state or federal law, except as follows (indicate the reasons why the affirmation cannot be given and list any conviction, plea, or imposition of probation before judgment with the date, court, official or administrative body, the sentence or disposition, the name(s) of person(s) involved, and their current positions and responsibilities with the business):

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#### D. AFFIRMATION REGARDING OTHER CONVICTIONS

I FURTHER AFFIRM THAT:

Neither I, nor to the best of my knowledge, information, and belief, the above business, or any of its officers, directors, partners, controlling stockholders, or any of its employees directly involved in the business's contracting activities including obtaining or performing contracts with public bodies, has:

(1) Been convicted under state or federal statute of:

- (a) A criminal offense incident to obtaining, attempting to obtain, or performing a public or private contract; or
- (b) Fraud, embezzlement, theft, forgery, falsification or destruction of records or receiving stolen property;

(2) Been convicted of any criminal violation of a state or federal antitrust statute;

(3) Been convicted under the provisions of Title 18 of the United States Code for violation of the Racketeer Influenced and Corrupt Organization Act, 18 U.S.C. §1961 et seq., or the Mail Fraud Act, 18 U.S.C. §1341 et seq., for acts in connection with the submission of bids or proposals for a public or private contract;

(4) Been convicted of a violation of the State Minority Business Enterprise Law, §14-308 of the State Finance and Procurement Article of the Annotated Code of Maryland;

(5) Been convicted of a violation of §11-205.1 of the State Finance and Procurement Article of the Annotated Code of Maryland;

(6) Been convicted of conspiracy to commit any act or omission that would constitute grounds for conviction or liability under any law or statute described in subsections (1)–(5) above;

(7) Been found civilly liable under a state or federal antitrust statute for acts or omissions in connection with the submission of bids or proposals for a public or private contract;

(8) Been found in a final adjudicated decision to have violated the Commercial Nondiscrimination Policy under Title 19 of the State Finance and Procurement Article of the Annotated Code of Maryland with regard to a public or private contract; or

(9) Admitted in writing or under oath, during the course of an official investigation or other proceedings, acts or omissions that would constitute grounds for conviction or liability under any law or statute described in §§B and C and subsections D(1)—(8) above, except as follows (indicate reasons why the affirmations cannot be given, and list any conviction, plea, or imposition of probation before judgment with the date, court, official or administrative body, the sentence or disposition, the name(s) of the person(s) involved and their current positions and responsibilities with the business, and the status of any debarment):

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E. AFFIRMATION REGARDING DEBARMENT

I FURTHER AFFIRM THAT:

Neither I, nor to the best of my knowledge, information, and belief, the above business, or any of its officers, directors, partners, controlling stockholders, or any of its employees directly involved in the business's contracting activities, including obtaining or performing contracts with public bodies, has ever been suspended or debarred (including being issued a limited denial of participation) by any public entity, except as follows (list each debarment or suspension providing the dates of the suspension or debarment, the name of the public entity and the status of the proceedings, the name(s) of the person(s) involved and their current positions and responsibilities with the business, the grounds of the debarment or suspension, and the details of each person's involvement in any activity that formed the grounds of the debarment or suspension).

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F. AFFIRMATION REGARDING DEBARMENT OF RELATED ENTITIES

I FURTHER AFFIRM THAT:

(1) The business was not established and it does not operate in a manner designed to evade the application of or defeat the purpose of debarment pursuant to Sections 16-101, et seq., of the State Finance and Procurement Article of the Annotated Code of Maryland; and

(2) The business is not a successor, assignee, subsidiary, or affiliate of a suspended or debarred business, except as follows (you must indicate the reasons why the affirmations cannot be given without qualification):

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#### G. SUB-CONTRACT AFFIRMATION

##### I FURTHER AFFIRM THAT:

Neither I, nor to the best of my knowledge, information, and belief, the above business, has knowingly entered into a contract with a public body under which a person debarred or suspended under Title 16 of the State Finance and Procurement Article of the Annotated Code of Maryland will provide, directly or indirectly, supplies, services, architectural services, construction related services, leases of real property, or construction.

#### H. AFFIRMATION REGARDING COLLUSION

##### I FURTHER AFFIRM THAT:

Neither I, nor to the best of my knowledge, information, and belief, the above business has:

- (1) Agreed, conspired, connived, or colluded to produce a deceptive show of competition in the compilation of the accompanying bid or offer that is being submitted;
- (2) In any manner, directly or indirectly, entered into any agreement of any kind to fix the bid price or price proposal of the bidder or offeror or of any competitor, or otherwise taken any action in restraint of free competitive bidding in connection with the contract for which the accompanying bid or offer is submitted.

#### I. FINANCIAL DISCLOSURE AFFIRMATION

##### I FURTHER AFFIRM THAT:

I am aware of, and the above business will comply with, the provisions of Section 13-221 of the State Finance and Procurement Article of the Annotated Code of Maryland, which require that every business that enters into contracts, leases, or other agreements with the State of Maryland or its agencies during a calendar year under which the business is to receive in the aggregate \$100,000 or more shall, within 30 days of the time when the aggregate value of the contracts, leases, or other agreements reaches \$100,000, file with the Secretary of State of Maryland certain specified information to include disclosure of beneficial ownership of the business.

#### J. POLITICAL CONTRIBUTION DISCLOSURE AFFIRMATION

##### I FURTHER AFFIRM THAT:

I am aware of, and the above business will comply with, Election Law Article, §§14-101—14-108, Annotated Code of Maryland, which requires that every person that enters into contracts, leases, or other agreements with the State of Maryland, including its agencies or a political subdivision of the State, during a calendar year in which the person receives in the aggregate \$100,000 or more shall file with the State Board of Elections a statement disclosing contributions in excess of \$500 made during the reporting period to a candidate for elective office in any primary or general election.

#### K. DRUG AND ALCOHOL FREE WORKPLACE

(Applicable to all contracts unless the contract is for a law enforcement agency and the agency head or the agency head's designee has determined that application of COMAR 21.11.08 and this certification would be inappropriate in connection with the law enforcement agency's undercover operations.)

I CERTIFY THAT:

- (1) Terms defined in COMAR 21.11.08 shall have the same meanings when used in this certification.
- (2) By submission of its bid or offer, the business, if other than an individual, certifies and agrees that, with respect to its employees to be employed under a contract resulting from this solicitation, the business shall:
  - (a) Maintain a workplace free of drug and alcohol abuse during the term of the contract;
  - (b) Publish a statement notifying its employees that the unlawful manufacture, distribution, dispensing, possession, or use of drugs, and the abuse of drugs or alcohol is prohibited in the business' workplace and specifying the actions that will be taken against employees for violation of these prohibitions;
  - (c) Prohibit its employees from working under the influence of drugs or alcohol;
  - (d) Not hire or assign to work on the contract anyone whom the business knows, or in the exercise of due diligence should know, currently abuses drugs or alcohol and is not actively engaged in a bona fide drug or alcohol abuse assistance or rehabilitation program;
  - (e) Promptly inform the appropriate law enforcement agency of every drug-related crime that occurs in its workplace if the business has observed the violation or otherwise has reliable information that a violation has occurred;
  - (f) Establish drug and alcohol abuse awareness programs to inform its employees about:
    - (i) The dangers of drug and alcohol abuse in the workplace;
    - (ii) The business' policy of maintaining a drug and alcohol free workplace;
    - (iii) Any available drug and alcohol counseling, rehabilitation, and employee assistance programs; and
    - (iv) The penalties that may be imposed upon employees who abuse drugs and alcohol in the workplace;
  - (g) Provide all employees engaged in the performance of the contract with a copy of the statement required by §K(2)(b), above;
  - (h) Notify its employees in the statement required by §K(2)(b), above, that as a condition of continued employment on the contract, the employee shall:
    - (i) Abide by the terms of the statement; and
    - (ii) Notify the employer of any criminal drug or alcohol abuse conviction for an offense occurring in the workplace not later than 5 days after a conviction;
  - (i) Notify the procurement officer within 10 days after receiving notice under §K(2)(h)(ii), above, or otherwise receiving actual notice of a conviction;
  - (j) Within 30 days after receiving notice under §K(2)(h)(ii), above, or otherwise receiving actual notice of a conviction, impose either of the following sanctions or remedial measures on any employee who is convicted of a drug or alcohol abuse offense occurring in the workplace:
    - (i) Take appropriate personnel action against an employee, up to and including termination; or

(ii) Require an employee to satisfactorily participate in a bona fide drug or alcohol abuse assistance or rehabilitation program; and

(k) Make a good faith effort to maintain a drug and alcohol free workplace through implementation of §K(2)(a)—(j), above.

(3) If the business is an individual, the individual shall certify and agree as set forth in §K(4), below, that the individual shall not engage in the unlawful manufacture, distribution, dispensing, possession, or use of drugs or the abuse of drugs or alcohol in the performance of the contract.

(4) I acknowledge and agree that:

(a) The award of the contract is conditional upon compliance with COMAR 21.11.08 and this certification;

(b) The violation of the provisions of COMAR 21.11.08 or this certification shall be cause to suspend payments under, or terminate the contract for default under COMAR 21.07.01.11 or 21.07.03.15, as applicable; and

(c) The violation of the provisions of COMAR 21.11.08 or this certification in connection with the contract may, in the exercise of the discretion of the Board of Public Works, result in suspension and debarment of the business under COMAR 21.08.03.

#### L. CERTIFICATION OF CORPORATION REGISTRATION AND TAX PAYMENT

I FURTHER AFFIRM THAT:

(1) The business named above is a (domestic \_\_\_) (foreign \_\_\_) corporation registered in accordance with the Corporations and Associations Article, Annotated Code of Maryland, and that it is in good standing and has filed all of its annual reports, together with filing fees, with the Maryland State Department of Assessments and Taxation, and that the name and address of its resident agent filed with the State Department of Assessments and Taxation is: Name: \_\_\_\_\_ Address: \_\_\_\_\_

(If not applicable, so state).

(2) Except as validly contested, the business has paid, or has arranged for payment of, all taxes due the State of Maryland and has filed all required returns and reports with the Comptroller of the Treasury, the State Department of Assessments and Taxation, and the Department of Labor, Licensing, and Regulation, as applicable, and will have paid all withholding taxes due the State of Maryland prior to final settlement.

#### M. CONTINGENT FEES

I FURTHER AFFIRM THAT:

The business has not employed or retained any person, partnership, corporation, or other entity, other than a bona fide employee, bona fide agent, bona fide salesperson, or commercial selling agency working for the business, to solicit or secure the Contract, and that the business has not paid or agreed to pay any person, partnership, corporation, or other entity, other than a bona fide employee, bona fide agent, bona fide salesperson, or commercial selling agency, any fee or any other consideration contingent on the making of the Contract.

N. Repealed.

O. ACKNOWLEDGEMENT

I ACKNOWLEDGE THAT this Affidavit is to be furnished to the Procurement Officer and may be distributed to units of: (1) the State of Maryland; (2) counties or other subdivisions of the State of Maryland; (3) other states; and (4) the federal government. I further acknowledge that this Affidavit is subject to applicable laws of the United States and the State of Maryland, both criminal and civil, and that nothing in this Affidavit or any contract resulting from the submission of this bid or proposal shall be construed to supersede, amend, modify or waive, on behalf of the State of Maryland, or any unit of the State of Maryland having jurisdiction, the exercise of any statutory right or remedy conferred by the Constitution and the laws of Maryland with respect to any misrepresentation made or any violation of the obligations, terms and covenants undertaken by the above business with respect to (1) this Affidavit, (2) the contract, and (3) other Affidavits comprising part of the contract.

I DO SOLEMNLY DECLARE AND AFFIRM UNDER THE PENALTIES OF PERJURY THAT THE CONTENTS OF THIS AFFIDAVIT ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF.

Date: \_\_\_\_\_ By: \_\_\_\_\_ (Authorized Representative and Affiant)

**ATTACHMENT B**

**EXHIBIT E  
DISADVANTAGED BUSINESS  
ENTERPRISE**

STATE OF MARYLAND  
MARYLAND DEPARTMENT OF TRANSPORTATION  
DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION

PURPOSE

Contractor shall structure its procedures for the performance of the work required in this contract to attempt to achieve the disadvantaged business enterprise (DBE) goal stated in the Invitation for Bids or Request for Proposals. DBE performance must be in accordance with this Exhibit, as authorized by Code of Maryland Regulations (COMAR) 21.11.03. Contractor agrees to exercise all good faith efforts to carry out the requirements set forth in this Exhibit.

DBE GOALS AND SUB GOALS

A DBE subcontract participation goal of 13% percent of the total contract dollar amount has been established for this procurement. By submitting a response to this solicitation, the bidder or offeror agrees that this dollar amount of the contract will be performed by certified disadvantaged business enterprises.

OR

An overall DBE subcontract participation goal of \_\_ percent of the total contract dollar amount has been established for this procurement. This dollar amount includes:

- A sub goal of \_\_% percent of the total contract dollar amount to be allocated to certified disadvantaged business enterprises classified as women-owned businesses.
- A sub goal of \_\_% percent of the total contract dollar amount to be allocated to certified disadvantaged business enterprises classified as African American-owned businesses.

By submitting a response to this solicitation, the bidder or offeror agrees that these dollar amounts of the contract will be performed by certified disadvantaged business enterprises as specified.

- ◆ A prime contractor – including a DBE prime contractor – must accomplish an amount of work not less than the DBE subcontract goal with certified DBE subcontractors.
- ◆ A prime contractor comprising a joint venture that includes DBE partner(s) must accomplish the DBE subcontract goal with certified DBE subcontractors.

## SOLICITATION AND CONTRACT FORMATION

- ◆ A bidder or offeror must include with its bid or offer:
  - (1) A completed Certified DBE Utilization and Fair Solicitation Affidavit (MDOT DBE Form A) whereby the bidder or offeror acknowledges the certified DBE participation goal or requests a waiver, commits to make a good faith effort to achieve the goal, and affirms that DBE subcontractors were treated fairly in the solicitation process.
  - (2) A completed DBE Participation Schedule (MDOT DBE Form B) whereby the bidder or offeror responds to the expected degree of Disadvantaged Business Enterprise participation as stated in the solicitation, by identifying the specific commitment of certified DBEs at the time of submission. The bidder or offeror shall specify the price and/or the percentage of contract value associated with each DBE subcontractor identified on the DBE Participation Schedule.

**If a bidder or offeror fails to submit MDOT DBE Form A and MDOT DBE Form B with the bid or offer as required, the Procurement Officer shall deem the bid non-responsive or shall determine that the offer is not reasonably susceptible of being selected for award.**

- ◆ Within 10 working days from notification that it is the apparent awardee or from the date of the actual award, whichever is earlier, the apparent awardee must provide the following documentation to the Procurement Officer.
  - (1) Outreach Efforts Compliance Statement (MDOT DBE Form C)
  - (2) DBE Subcontractor Project Participation Affidavit (MDOT DBE Form D)
  - (3) If the apparent awardee believes a waiver (in whole or in part) of the overall DBE goal or of any sub goal is necessary, it must submit a fully documented waiver request that complies with COMAR 21.11.03.11.
  - (4) Any other documentation required by the Procurement Officer to ascertain bidder or offeror responsibility in connection with the certified DBE participation goal.

**If the apparent awardee fails to return each completed document within the required time, the Procurement Officer may determine that the apparent awardee is not responsible and therefore not eligible for contract award. If the contract has already been awarded, the award is voidable.**

## CONTRACT ADMINISTRATION REQUIREMENTS

Contractor shall:

1. Submit monthly to the Department a report listing any unpaid invoices, over 30 days old, received from any certified DBE subcontractor, the amount of each invoice and the reason payment has not been made.
2. Include in its agreements with its certified DBE subcontractors a requirement that those subcontractors submit monthly to the Department a report that identifies the prime contract and lists all payments received from Contractor in the preceding 30 days, as well as any outstanding invoices, and the amount of those invoices.
3. Maintain such records as are necessary to confirm compliance with its DBE participation obligations. These records must indicate the identity of certified minority and non-minority subcontractors employed on the contract, the type of work performed by each, and the actual dollar value of work performed. Subcontract agreements documenting the work performed by all DBE participants must be retained by the Contractor and furnished to the Procurement Officer on request.
4. Consent to provide such documentation as reasonably requested and to provide right-of-entry at reasonable times for purposes of the State's representatives verifying compliance with the DBE participation obligations. Contractor must retain all records concerning DBE participation and make them available for State inspection for three years after final completion of the contract.
5. At the option of the procurement agency, upon completion of the contract and before final payment and/or release of retainage, submit a final report in affidavit form and under penalty of perjury, of all payments made to, or withheld from DBE subcontractors.

### ATTACHMENTS

- A. Certified DBE Utilization and Fair Solicitation Affidavit (must be submitted with bid or offer)
- B. DBE Participation Schedule (must be submitted with bid or offer)
- C. Outreach Efforts Compliance Statement (must be submitted within 10 working days of notification of apparent award or actual award, whichever is earlier)
- D. DBE Subcontractor Project Participation Statement (must be submitted within 10 working days of notification of apparent award or actual award, whichever is earlier)

**MDOT DBE FORM A**  
**FEDERALLY-FUNDED CONTRACTS (PROPOSALS ONLY)**  
**CERTIFIED DBE UTILIZATION AND FAIR SOLICITATION AFFIDAVIT**  
**PAGE 1 OF 2**

**THIS AFFIDAVIT MUST BE INCLUDED WITH THE PROPOSAL AS DIRECTED IN THE SOLICITATION. THE FAILURE OF AN OFFEROR TO PROPERLY COMPLETE AND SUBMIT THIS AFFIDAVIT SHALL RESULT IN A DETERMINATION THAT THE PROPOSAL IS NOT SUSCEPTIBLE OF BEING SELECTED FOR AWARD.**

In connection with the proposal submitted in response to Solicitation No. \_\_\_\_\_, I affirm the following:

**1. DBE Participation (PLEASE CHECK ONLY ONE)**

I have met the overall certified Disadvantaged Business Enterprise (DBE) participation goal of \_\_\_\_\_ ( \_\_\_\_\_ %) percent. I agree that the DBE firms listed in the DBE Participation Schedule - Part 2 of the MDOT DBE Form B (Federally-Funded Contracts – Proposals Only) will be used to accomplish the DBE participation goal for this Contract for at least the percentage amounts set forth therein.

**OR**

I conclude that I am unable to achieve the DBE participation goal. I hereby request a waiver of the overall goal. Within 10 business days of receiving notice that our firm is the apparent awardee or as requested by the Procurement Officer, I will submit a written waiver request and all required documentation in accordance with COMAR 21.11.03.11. I agree that the DBE firms listed in the DBE Participation Schedule - Part 2 of the MDOT DBE Form B (Federally-Funded Contracts – Proposals Only) will be used to accomplish the DBE participation goal for this Contract for at least the percentage amounts set forth therein.

**2. Additional DBE Documentation**

I understand that if I am notified that I am the apparent awardee or as requested by the Procurement Officer, I must submit the following documentation within 10 business days of receiving such notice:

- (a) Outreach Efforts Compliance Statement (MDOT DBE Form C - Federally-Funded Contracts – Proposals Only);
- (b) Subcontractor Project Participation Statement (MDOT DBE Form D - Federally-Funded Contracts – Proposals Only);
- (c) DBE Waiver Request documentation per COMAR 21.11.03.11 (if waiver was requested); and
- (d) Any other documentation required by the Procurement Officer to ascertain offeror's responsibility in connection with the certified DBE participation goal.

I acknowledge that if I fail to return each completed document (in 2 (a) through (d)) within the required time, the Procurement Officer may determine that I am not responsible and therefore not eligible for contract award.

**MDOT DBE FORM A**  
**FEDERALLY-FUNDED CONTRACTS (PROPOSALS ONLY)**  
**CERTIFIED DBE UTILIZATION AND FAIR SOLICITATION AFFIDAVIT**  
**PAGE 2 OF 2**

**3. Information Provided to DBE firms**

In the solicitation of subcontract quotations or offers, DBE firms were provided not less than the same information and amount of time to respond as were non-DBE firms.

I solemnly affirm under the penalties of perjury that the information in this affidavit is true to the best of my knowledge, information and belief.

\_\_\_\_\_  
Company Name

\_\_\_\_\_  
Signature of Representative

\_\_\_\_\_  
Address

\_\_\_\_\_  
Printed Name and Title

\_\_\_\_\_  
City, State and Zip Code

\_\_\_\_\_  
Date

**MDOT DBE FORM B**  
**FEDERALLY-FUNDED CONTRACTS (PROPOSALS ONLY)**  
**DBE PARTICIPATION SCHEDULE**

**PART 1 – INSTRUCTIONS FOR DBE PARTICIPATION SCHEDULE**

**PARTS 2 AND 3 MUST BE INCLUDED WITH THE PROPOSAL. THE FAILURE OF AN OFFEROR TO PROPERLY COMPLETE AND SUBMIT FORM 2 SHALL RESULT IN A DETERMINATION THAT THE PROPOSAL IS NOT SUSCEPTIBLE OF BEING SELECTED FOR AWARD.**

PAGE 1 OF 2

**\*\*\* STOP \*\*\***

**FORM INSTRUCTIONS**

**PLEASE READ BEFORE COMPLETING THIS FORM**

1. Please refer to the Maryland Department of Transportation (MDOT) DBE Directory at [www.mdot.state.md.us](http://www.mdot.state.md.us) to determine if a firm is certified for the appropriate North American Industry Classification System ("NAICS") Code **and** the product/services description (specific product that a firm is certified to provide or specific areas of work that a firm is certified to perform). For more general information about NAICS, please visit [www.naics.com](http://www.naics.com). Only those specific products and/or services for which a firm is certified in the MDOT Directory can be used for purposes of achieving the DBE participation goal.
2. In order to be counted for purposes of achieving the DBE participation goal, the firm must be certified for that specific NAICS ("DBE" for Federally-funded projects designation after NAICS Code). **WARNING:** If the firm's NAICS Code is in **graduated status**, such services/products **will not be counted** for purposes of achieving the DBE participation goals. Graduated status is clearly identified in the MDOT Directory (such graduated codes are designated with the letter "G" after the appropriate NAICS Code).
3. Examining the NAICS Code is the **first step** in determining whether a DBE firm is certified and eligible to receive DBE participation credit for the specific products/services to be supplied or performed under the contract. The **second step** is to determine whether a firm's Products/Services Description in the DBE Directory includes the products to be supplied and/or services to be performed that are used to achieve the DBE participation goal.
4. If you have any questions as to whether a firm is certified to perform the specific services or provide specific products, please call MDOT's Office of Minority Business Enterprise at 1-800-544-6056 or send an email to [mbe@mdot.state.md.us](mailto:mbe@mdot.state.md.us).
5. The Contractor's subcontractors are considered second-tier subcontractors. Third-tier contracting used to meet a DBE goal is to be considered the exception and not the rule. The following two conditions must be met before MDOT, its Modal Administrations and the Maryland Transportation Authority may approve a third-tier contracting agreement: (a) the offeror must request in writing approval of each third-tier contract arrangement, and (b) the request must contain specifics as to why a third-tier contracting arrangement should be approved. These documents must be submitted with the proposal in Part 2 of this DBE Participation Schedule.
6. For each DBE firm that is being used as supplier/wholesaler/regular dealer/broker/manufacturer, please follow these instructions for calculating the **percentage of the Contract (as provided in price/financial proposal or any best and final offer) for purposes of achieving the DBE participation goal:**
  - A. Is the firm certified as a broker of the products/supplies? If the answer is YES, please continue to Item C. If the answer is NO, please continue to Item B.
  - B. Is the firm certified as a supplier, wholesaler, regular dealer, or manufacturer of such products/supplies? If the answer is YES, continue to Item D. If the answer is NO, continue to Item C **only** if the DBE firm is certified to perform trucking/hauling services under NAICS Codes 484110, 484121, 484122, 484210, 484220 and 484230. If the answer is NO and the firm is not certified under these NAICS Codes, then **no** DBE participation credit will be given for the supply of these products.
  - C. For purposes of achieving the DBE participation goal, you may count **only** the amount of any reasonable fee that the DBE firm will receive for the provision of such products/supplies - **not** the total subcontract amount or the value (or a percentage thereof) of such products and/or supplies. In Column 4 of the DBE Participation Schedule, please state the amount of any reasonable fee as a percentage of Contract that the DBE firm will receive for the provision of such products/services in Line 4.1.

**MDOT DBE FORM B**  
**FEDERALLY-FUNDED CONTRACTS (PROPOSALS ONLY)**  
**DBE PARTICIPATION SCHEDULE**  
**PART 1 – INSTRUCTIONS FOR DBE PARTICIPATION SCHEDULE**  
 PAGE 2 OF 3

- D. Is the firm certified as a manufacturer (refer to the firm's NAICS Code and specific description of products/services) of the products/supplies to be provided? If the answer is NO, please continue to Item E. If the answer is YES, for purposes of achieving the DBE participation goal, you may count the total amount of the subcontract. In Column 4 of the DBE Participation Schedule, please state the total amount of the subcontract in Line 4.1 as a percentage of the Contract.
- E. Is the firm certified as a supplier, wholesaler and/or regular dealer? If the answer is YES (i) if the DBE firm is furnishing and installing the materials and is certified to perform these services, please include in Line 4.1 the total value of the subcontract amount (including full value of supplies); or (ii) if the firm is only being used as a supplier, wholesaler and/or regular dealer or is not certified to install the supplies/materials, for purposes of achieving the MBE participation goal, you may only count sixty percent (60%) of the value of the subcontract for these supplies/products (60% Rule). In Line, 4.2 of the MBE Participation Schedule, please state amount of the subcontract for these supplies/products only (not installation) and sixty percent (60%) of such value.
7. Please note that for USDOT-funded projects, a DBE prime may count towards its DBE participation goal work performed by its own forces. Include information about the DBE prime in Part 2.
8. **WARNING:** The percentage of DBE participation, computed using the dollar amounts in Column 4 for all of the DBE firms listed in Part 2, MUST at least equal the DBE participation goal as set forth in MDOT DBE Form A – Federally-Funded Contracts (Proposals Only) for this solicitation. If the offeror is unable to achieve the DBE participation goals, then the offeror must request a waiver in Form A or it may result in a determination that the proposal is not susceptible for award. You may wish to use the Worksheet shown below to assist you in calculating the percentage and confirming that you have met the applicable DBE participation goal

**WORKSHEET**

Total DBE Firm Participation Amount	\$	
(Add amounts listed for all DBE Firms in Column 4 of DBE Participation Schedule)		
Divide by Total Contract Amount	÷	
<b><i>Percent Overall DBE Participation</i></b>	<b>=</b>	<b>%</b>

**MDOT DBE FORM B  
FEDERALLY-FUNDED CONTRACTS (PROPOSALS ONLY)  
DBE PARTICIPATION SCHEDULE**

**PART 2 – DBE PARTICIPATION SCHEDULE**

**PART 2 MUST BE INCLUDED WITH THE PROPOSAL AS DIRECTED IN THE SOLICITATION. THE FAILURE OF AN OFFEROR TO PROPERLY COMPLETE AND SUBMIT PART 2 OF THE DBE PARTICIPATION SCHEDULE SHALL RESULT IN A DETERMINATION THAT THE PROPOSAL IS NOT SUSCEPTIBLE TO BEING SELECTED FOR AWARD.**

PAGE \_\_\_ OF \_\_\_

Prime Contractor	Project Description	Solicitation Number

LIST INFORMATION FOR EACH CERTIFIED MBE SUBCONTRACTOR USED TO ACHIEVE THE DBE PARTICIPATION GOAL

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4
			Unless the offeror requested a waiver in MDOT DBE Form A – Federally-Funded Contracts (Proposals Only) for this solicitation, the cumulative DBE participation for all DBE firms listed herein must equal at least the DBE participation goal set forth in Form A.
NAME OF DBE PRIME, SUBCONTRACTOR AND TIER	CERTIFICATION NO. AND CLASSIFICATION	NAICS CODE/S NAICS Code/s of the specific products to be supplied or services to be performed by the DBE firm	FOR PURPOSES OF ACHIEVING THE DBE PARTICIPACION GOAL. State the percentage amount of the products/services in Line 4.1 except for those services or products where the DBE firm is being used as a wholesaler, supplier or regular dealer. For those items of work where the DBE firm is being used as a supplier, wholesaler and/or regular dealer complete Line 4.2 using the 60% Rule.
<input type="checkbox"/> Please check if DBE firm is a third-tier contractor (if applicable). Please submit written documents in accordance with Section 5 of Part 1 - Instructions	Certification Number: _____  <input type="checkbox"/> Women-Owned <input type="checkbox"/> African American-Owned <input type="checkbox"/> Other DBE Classification		<b>4.1 TOTAL AMOUNT TO BE PAID TO THE SUBCONTRACTOR (PLEASE STATE THIS AMOUNT AS A PERCENTAGE OF THE TOTAL CONTRACT VALUE - EXCLUDING PRODUCTS/SERVICES FROM SUPPLIERS, WHOLESALERS OR REGULAR DEALERS)</b>  %  <b>4.2 TOTAL AMOUNT TO BE PAID TO THE SUBCONTRACTOR FOR ITEMS OF WORK WHERE THE DBE FIRM IS BEING USED AS SUPPLIER, WHOLESALER AND/OR REGULAR DEALER) (PLEASE REFER TO SECTION 6(E) IN PART 1 - INSTRUCTIONS).</b> Total value of Supplies/Products        %  X 60% (60% Rule) =        % (amount for purposes of achieving the DBE Participation Goal).

Please check if Continuation Sheets are attached.

**MDOT DBE FORM B**  
**FEDERALLY-FUNDED CONTRACTS (PROPOSALS ONLY)**  
**DBE PARTICIPATION SCHEDULE**  
**CONTINUATION SHEET**

PAGE \_\_\_ OF \_\_\_

<b>Prime Contractor</b>	<b>Project Description</b>	<b>Solicitation Number</b>

LIST INFORMATION FOR EACH CERTIFIED MBE SUBCONTRACTOR USED TO ACHIEVE THE DBE PARTICIPATION GOAL

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4
			Unless the offeror requested a waiver in MDOT DBE Form A – Federally-Funded Contracts (Proposals Only) for this solicitation, the cumulative DBE participation for all DBE firms listed herein must equal at least the DBE participation goal set forth in Form A.
<b>NAME OF DBE PRIME, SUBCONTRACTOR AND TIER</b>	<b>CERTIFICATION NO. AND CLASSIFICATION</b>	<b>NAICS CODE/S</b>  NAICS Code/s of the specific products to be supplied or services to be performed by the DBE firm	<b>FOR PURPOSES OF ACHIEVING THE DBE PARTICIPATION GOAL. State the percentage amount of the products/services in Line 4.1 except for those services or products where the DBE firm is being used as a wholesaler, supplier, regular dealer, or broker. For those items of work where the DBE firm is being used as a supplier, wholesaler and/or regular dealer complete Line 4.2 using the 60% Rule.</b>
<input type="checkbox"/> Please check if DBE firm is a third-tier contractor (if applicable). Please submit written documents in accordance with Section 5 of Part 1 - Instructions	Certification Number: _____  <input type="checkbox"/> Women-Owned <input type="checkbox"/> African American-Owned <input type="checkbox"/> Other DBE Classification		<b>4.1 TOTAL AMOUNT TO BE PAID TO THE SUBCONTRACTOR (PLEASE STATE THIS AMOUNT AS A PERCENTAGE OF THE TOTAL CONTRACT VALUE - EXCLUDING PRODUCTS/SERVICES FROM SUPPLIERS, WHOLESALERS, REGULAR DEALERS AND BROKERS)</b>  %  <b>4.2 TOTAL AMOUNT TO BE PAID TO THE SUBCONTRACTOR FOR ITEMS OF WORK WHERE THE DBE FIRM IS BEING USED AS SUPPLIER, WHOLESALER AND/OR REGULAR DEALER (PLEASE REFER TO SECTION 6(E) IN PART 1 - INSTRUCTIONS).</b> Total value of Supplies/Products            %  X 60% (60% Rule) =            %  (amount for purposes of achieving the DBE Participation Goal).

Please check if Continuation Sheets are attached.

**MDOT DBE FORM B**  
**FEDERALLY-FUNDED CONTRACTS (PROPOSALS ONLY)**  
**DBE PARTICIPATION SCHEDULE**

**PART 3 – CERTIFICATION FOR DBE PARTICIPATION SCHEDULE**

**PARTS 2 AND 3 MUST BE INCLUDED WITH THE PROPOSAL AS DIRECTED IN THE SOLICITATION.**

I hereby affirm that I have reviewed the Products and Services Description (specific product that a firm is certified to provide or areas of work that a firm is certified to perform) set forth in the MDOT DBE Directory for each of the DBE firms listed in Part 2 of this DBE Form B for purposes of achieving the DBE participation goal that was identified in the DBE Form A that I submitted with this solicitation, and that the DBE firms listed are only performing those products/services/areas of work for which they are certified. I also hereby affirm that I have read and understand the form instructions set forth in Part 1 of this DBE Form B.

I solemnly affirm under the penalties of perjury that the contents of Parts 2 and 3 of MDOT DBE Form B are true to the best of my knowledge, information and belief.

\_\_\_\_\_  
Company Name

\_\_\_\_\_  
Signature of Representative

\_\_\_\_\_  
Address

\_\_\_\_\_  
Printed Name and Title

\_\_\_\_\_  
City, State and Zip Code

\_\_\_\_\_  
Date

# MDOT DBE FORM C

## FEDERALLY-FUNDED CONTRACTS (PROPOSALS ONLY) OUTREACH EFFORTS COMPLIANCE STATEMENT

In conjunction with the offer/proposal submitted in response to Solicitation No. \_\_\_\_\_, I state the following:

1. Offeror took the following efforts to identify subcontracting opportunities in these specific work categories:
  
2. Attached to this form are copies of written solicitations (with bidding instructions) used to solicit certified DBE firms for these subcontract opportunities.
  
3. Offeror made the following attempts to personally contact the solicited DBE firms:

4. **Please Check One:**

Offeror assisted DBE firms to fulfill or to seek waiver of bonding requirements. (DESCRIBE EFFORTS)

This project does not involve bonding requirements.

5. **Please Check One:**

Offeror did attend the pre-proposal meeting/conference

No pre-proposal meeting/conference was held.

Offeror did not attend the pre-proposal meeting/conference

\_\_\_\_\_  
Company Name

\_\_\_\_\_  
Signature of Representative

\_\_\_\_\_  
Address

\_\_\_\_\_  
Printed Name and Title

\_\_\_\_\_  
Date

# MDOT DBE FORM D

## FEDERALLY-FUNDED CONTRACTS (PROPOSALS ONLY)

### DBE SUBCONTRACTOR PROJECT PARTICIPATION AFFIDAVIT

**IF THE OFFEROR FAILS TO RETURN THIS AFFIDAVIT WITHIN THE REQUIRED TIME, THE PROCUREMENT OFFICER MAY DETERMINE THAT THE OFFEROR IS NOT RESPONSIBLE AND THEREFORE NOT ELIGIBLE FOR CONTRACT AWARD. SUBMIT ONE FORM FOR EACH CERTIFIED DBE FIRM LISTED IN THE DBE PARTICIPATION SCHEDULE**

Provided that \_\_\_\_\_ (Prime Contractor's Name) is awarded the State contract in conjunction with Solicitation No. \_\_\_\_\_, such Prime Contractor will enter into a contract with \_\_\_\_\_ (Subcontractor's Name) committing to participation by the DBE firm \_\_\_\_\_ (DBE Name) with MDOT Certification Number \_\_\_\_\_ (if subcontractor previously listed is also the DBE firm, please restate name and provide DBE Certification Number) will receive for at least \_\_\_\_\_% (Total Subcontract Amount – as a percentage of total Contract value) for performing the following products/services for the Contract:

NAICS CODE	WORK ITEM, SPECIFICATION NUMBER, LINE ITEMS OR WORK CATEGORIES (IF APPLICABLE)	DESCRIPTION OF SPECIFIC PRODUCTS AND/OR SERVICES

I solemnly affirm under the penalties of perjury that the information provided in this DBE Subcontractor Project Participation Affidavit is true to the best of my knowledge, information and belief. I acknowledge that, for purposes of determining the accuracy of the information provided herein, the Procurement Officer may request additional information, including, without limitation, copies of the subcontract agreements and quotes.

PRIME CONTRACTOR	SUBCONTRACTOR (SECOND-TIER)	SUBCONTRACTOR (THIRD-TIER)
Signature of Representative: _____	Signature of Representative: _____	Signature of Representative: _____
Printed Name and Title: _____	Printed Name and Title: _____	Printed Name and Title: _____
Firm's Name: _____	Firm's Name: _____	Firm's Name: _____
Address: _____	Federal Identification Number: _____	Federal Identification Number: _____
	Address: _____	Address: _____
Telephone: _____	Telephone: _____	Telephone: _____
Date: _____	Date: _____	Date: _____

**IF DBE FIRM IS A THIRD-TIER SUBCONTRACTOR, THIS FORM MUST ALSO BE EXECUTED BY THE SECOND-TIER SUBCONTRACTOR THAT HAS THE SUBCONTRACT AGREEMENT WITH THE DBE FIRM.**

**ATTACHMENT C**

**EXHIBIT Q  
CERTIFICATION OF LOWER TIER  
PARTICIPANTS**

CERTIFICATION OF LOWER-TIER PARTICIPANTS  
REGARDING  
DEBARMENT, SUSPENSION AND OTHER INELIGIBILITY  
AND  
VOLUNTARY EXCLUSION

(Applicable for subcontracts of \$25,000 or more)

The Lower-Tier Participant (potential subcontractor under a major third party contract),  
\_\_\_\_\_, certifies, by submission of this proposal,

(Company Name)

that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

(If the Lower-Tier Participant (potential subcontractor) is unable to certify to any of the statements in this certification, such participant shall attach an explanation of this proposal.)

THE LOWER-TIER PARTICIPANT (POTENTIAL SUBCONTRACTOR UNDER A MAJOR THIRD PARTY CONTRACT), \_\_\_\_\_,

(Company Name)

CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION AND UNDERSTANDS THAT THE PROVISIONS OF 31 U.S.C. SECTIONS 3801 ET SEQ. ARE APPLICABLE THERETO.

\_\_\_\_\_  
Signature and Title of Authorized Official

\_\_\_\_\_  
Company Name

\_\_\_\_\_  
Address

\_\_\_\_\_  
City, State, Zip Code

\_\_\_\_\_  
Date

**(FEDERAL - AID)**



MARYLAND TRANSIT ADMINISTRATION

MARYLAND DEPARTMENT OF TRANSPORTATION

Martin O'Malley, Governor • Anthony G. Brown, Lt. Governor  
Beverley K. Swaim-Staley, Secretary • Ralign T. Wells, Administrator

TO: Holders of Contract Documents

FROM: Maryland Transit Administration  
Contract Administration Division  
6 Saint Paul Street  
Baltimore, Maryland 21202-1614

SUBJECT: Addendum No. 1  
RFP No. T-8000-0316  
Procurement of the MARC IIA Fleet Mid-life Overhaul

DATE: July 16, 2010

Issued herewith and effective this date is Addendum No. 1. The Offeror shall include acknowledgement of receipt of this Addendum in the proposal cover letter as detailed in Section II, Proposal Form, Part 8, acknowledge receipt of addenda.

**ITEM ONE**

Delete **SP Section B.7, Pre-Proposal Conference, page B-4** in its entirety and replace with the following:

A conference for all Offerors will be held on **Thursday, August 5, 2010** at the Administration's Riverside Maintenance Facility, 1600 Ludlow Street, Baltimore, MD 21230 beginning at **10:00 a.m.**, followed by a site inspection. The site inspection shall afford the Offerors an opportunity to inspect a representative vehicle(s). All Offerors are encouraged to attend this meeting, but attendance is not mandatory. Attendance should be limited to no more than four (4) representatives per proposing team. **Please ensure that attendees have safety shoes if they chose to inspect a representative vehicle(s). Hard hats and safety glasses will be provided.**

All other conditions of this RFP remain the same. Any questions may be directed to Yvon J. Dupuis at 410-767-3591 or faxed to 410-333-4810 or by email at [ydupuis@mta.maryland.gov](mailto:ydupuis@mta.maryland.gov).

John L. Cousins  
Deputy Director  
Procurement Division