RULES AND PROCEDURES FOR CONDUCTING TEST OPERATIONS

METRO RED LINE SEGMENT - 2A WILSHIRE CORRIDOR

JULY 1, 1995

34369-2

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RECORD OF CHANGES

Change Number	Date Entered	Signature/Title/Company
1	10-1-95	
2	10-16-95	

FOREWORD

This manual entitled Rules and Procedures for Conducting Test Operations has been formulated for three purposes:

1. To identify the operating practices and standards of the Metro Red Line Rail System Project during test operations.

2. To aid in the instructions of these practices.

3. To serve employees as a reference whenever questions arise on the correct course of action.

This manual was prepared for the Los Angeles County Metropolitan Transit Authority (MTA) through the joint efforts of the MTA Construction, MTA Operations, and Parsons-Dillingham, Construction Management Team.

SECTION I: INTRODUCTION

This manual of Rules and Procedures for Conducting Test Operations contains rules and procedures which govern the performance and conduct of all personnel responsible for test operations and maintenance of the accepted portions of the Metro Rail System. The intent is to help employees perform their duties safely and effectively. Each employee must learn and understand the rules and maintain a thorough familiarity with all procedures specific to individual work assignments.

Parsons-Dillingham will conduct training in these rules and procedures initially, and will provide additional training upon future publication of the Metro Rail System Operating Rulebook prior to revenue operations. Employees are encouraged to direct questions about interpretation of the rules to their immediate Supervisors at any time. Suggestions designed to improve or clarify any rule should be submitted.

Copies of these rules and procedures will also be distributed to the various Contractors and consultants involved in system testing or working within test areas. All Contractor, Consultant, MTA Construction and Operating employees are expected to strictly comply with the rules and procedures in this book. Ignorance of the rules does not excuse negligence or failure to properly perform all required duties. Failure to comply with the rules and procedures in this book or any violation of the rules contained herein shall be considered sufficient cause for discipline of MTA employees and, when justifiable, shall be sufficient cause for removal of a Contractor or employee from the Metro Rail System Project.

Safety must always be the first consideration. The results of unsafe practices on the rail system can be extremely serious. When in doubt in any situation, employees must take the safe course of action and then contact a designated authority for assistance. All employees are required to exercise care to prevent injury to persons or damage to property.

SECTION II: **GENERAL RULES**

APPLICATION OF RULES -

100 Safety is of the first importance in the discharge of duty.

101 Employees whose duties are affected by rail vehicle operations or rail maintenance operations must have a current copy of the Rules and Procedures Manual for Conducting Test Operations immediately available for reference while on duty.

102 Employees must be familiar with and obey all rules and instructions and must attend required classes.

103 When in doubt as to the meaning of any rule or procedure, employees should contact their immediate, on duty Supervisor for an explanation.

104 Employees uncertain in any situation must take the safe course of action and then contact the on duty supervisor.

105 Employees must pass the required examinations.

106 Employees must engage in only MTA business while on duty and perform their duties thoroughly, efficiently and in compliance with the rules and instructions.

BULLETINS AND NOTICES -

107 Permanent changes or additions to this manual will be made by way of Bulletins. These Bulletins will be issued by the MTA Start-Up Program Manager and will be numbered consecutively from January 1 of each year. Employees must correct their manuals, as directed by Bulletins, by the end of their work day.

108 Temporary changes to this manual governing special conditions for a specific period of time will be made by way of Special Orders. These Special Orders will be issued by the MTA Start-Up Program Manager and will be numbered consecutively from January 1 of each year.

109 Instructions may be issued to the test operating personnel by way of Notices and Procedure Notices. These Notices and Procedure Notices will be issued by the MTA Start-Up Program Manager and will be numbered consecutively from January 1 of each year.

110 All Bulletins, Special Orders, Notices and Procedure Notices will be posted on the Bulletin Board in addition to those issued to operating personnel. The employee posting Bulletins, Special Orders, Notices and Procedure Notices on the Bulletin board will insert time and date posted and his/her initials in the space provided. Employees must read and be familiar with all the above posted items when coming on duty.

111 When returning from an off duty period, employees are responsible for compliance with Bulletins, Special Orders, Notices and Procedure Notices posted during their absence.

PERSONAL CONDUCT

112 MTA employees are governed by MTA's Comprehensive Alcohol & Drug Abuse Policy.

113 Employees taking any prescribed medication that may affect their judgment or faculties must not operate a Metro Rail System vehicle or any other equipment.

a. The use or sale of alcoholic beverages, intoxicants, drugs, narcotics, marijuana or controlled substances by employees when on duty or on Metro Rail System property is prohibited.

b. Employees must not report for duty under the influence or have in their possession while on Metro Rail System property any drug, alcoholic beverage, intoxicant, narcotic, marijuana, medication or other substance, including those prescribed by a doctor, that will in any way adversely affect their alertness, coordination, reaction, response or safety.

c. Employees must continue to be physically qualified to perform their usual and customary duties. Employees whose health becomes impaired to the extent that safety is threatened must notify a Supervisor immediately.

114 Employees must attempt to keep fully alert at all times. Sleeping or assuming an attitude of sleep while on duty is prohibited.

115 Employees are forbidden to eat, drink, or read unauthorized materials in the operating cab of rail vehicles. Employees are not permitted to smoke or use tobacco in any MTA vehicle, building or facility while on or off duty.

116 Employees must conduct themselves in a respectful, courteous and civil manner. Boisterous actions and profane language is prohibited.

117 Soliciting by employees for political, religious, social or other causes while on Metro Rail System property is not permitted without the written consent of the MTA Start-Up Program Manager. Distributing or displaying unauthorized materials on the property or vehicles is prohibited.

118 While on Metro Rail System property or vehicles, on or off duty, employees other than security must not use, carry or have in their possession, any device or object classified under the laws of this state as a deadly weapon or any self-defense device, including a stun gun or any object which, when used as a weapon, is capable of inflicting substantial bodily harm.

119 Employees must keep their immediate Supervisor advised of their current home address and telephone number.

120 Employees are responsible for MTA/Metro Rail System property issued to them and must return such property when scheduled or requested. Employees must not convert MTA/Metro Rail System property to their personal use and must promptly report lost or defective items to their immediate Supervisor.

121 Employees shall be appropriately dressed for their duties. Clothing or accessories worn while on duty shall not create a hazard and clothing must be kept clean, pressed and in good condition.

122 Employees shall maintain a high standard of personal cleanliness and neatness. Any individual style that creates a hazard or is inappropriate by MTA standards or policy is prohibited.

123 While on duty, designated employees shall have an operating watch, adjusted to the correct time after obtaining a time check from the Test Controller.

124 Employees are not to participate in any form of gambling while on or about the Metro Rail System premises.

125 Employees are prohibited from fighting, "horse play" or any form of practical joking on or about the Metro Rail System, whether on or off duty.

126 Only authorized employees may duplicate or cause to be duplicated any MTA assigned keys.

127 Employees shall not falsify any official report or enter or cause to be entered inaccurate, false or improper information on the books, reports, logs or test records.

128 All Metro Rail System business, instructions and communications shall be conducted in the English language.

129 Employees shall not commit any act which will bring reproach or discredit upon the MTA/Metro Rail System.

130 Employees must not release for distribution any internal company reports, books, daily logs or test records without receiving permission from the proper MTA designated authority. Employee failure to comply will be considered sufficient cause for MTA to exercise disciplinary action including removal of employee from service or termination of employment with MTA.

REPORTING FOR DUTY

131 Employees shall report on time ready for duty, in their proper uniform with assigned equipment at the designated reporting location.

PERSONAL RESPONSIBILITY -

140 Employees shall at all times protect their own personal safety and the safety of other employees, patrons and others. It shall be the duty of each employee, while on or about Metro Rail System property, to exercise good judgment and take necessary precautions at all times.

141 Employees shall promptly report all accidents, incidents and injuries to their immediate Supervisor no matter how minor and request first aid or medical attention, if/when necessary.

142 Employees shall promptly inform their immediate Supervisor of any unsafe condition or defective equipment and take necessary precautions if an immediate safety hazard exists.

143 Trespassers, including persons on or near the trackway observed by any employee, must be reported immediately to appropriate supervision and requested to leave the property at once, without any operating delays if possible. Trespassers in immediate danger must be warned at once if possible and all actions deemed necessary by the Test Controller will be taken to prevent accident/injury or obtain aid for anyone already injured.

144 Consider any electrical wire or apparatus to be energized ("live") at all times. Never allow any part of the body, article of clothing, or objects being carried or anything attached to such objects to come in contact with live electrical equipment or circuits.

145 Never enter electrical power enclosures or substations unless authorized while in the performance of duty.

146 Keep away from all dangling wires, live contact rail and any foreign objects in contact with any electrical conductor. Promptly report such conditions and location to the immediate Supervisor. If possible, leave a qualified individual to provide protection at the affected location.

147 Do not wear loose, ill-fitting, unfastened or unbuttoned apparel while on duty.

148 Keep emergency exits, fire alarm, fire extinguisher, water hydrant and other fire-fighting facilities or equipment clear of obstructions at all times.

149 Employees shall be familiar with fire regulations and the locations of fire-fighting equipment in their work area. If there is any doubt concerning use of this equipment, ask a Supervisor for instructions.

EMPLOYEES ON OR ABOUT THE TRACKS -

150 Never step, stand, sit or walk on any part of the track structure unless necessary in the performance of duty. Where required to perform duties in track areas, walking on or crossing tracks must be on cross-ties and ballast only. Never step or stand on track switches or components when on the track structure. Remote-controlled switches can be expected to move at anytime. Never step on or lean against the contact rail, cover board, or contact rail collector shoe when on the track structure. The contact rail must be considered energized at all times.

151 Employees must expect rail vehicle movement at any time, on any track and in any direction. Look in each direction before entering upon or standing close to a track.

152 Stop, listen and look in both directions and keep in the clear if moving equipment is approaching, when necessary to cross the tracks in the performance of duty. When walking on or about the trackway and it becomes necessary to look back, stop before turning the head or body.

153 Walk against the normal flow of rail traffic when on the trackway in the performance of duty. Look in both directions and clear the occupied tracks upon seeing or hearing the approach of a train or other rail-borne equipment. Be continually alert for trains approaching from either direction.

154 Walk or stand clear of tracks when conditions permit. Use established roads or pedestrian crossings, overpasses, underpasses or pathways to cross tracks whenever possible.

155 Employees must not cross tracks immediately after a train has passed, but shall wait until adjacent tracks can be observed for a safe distance in both directions.

156 Employees shall not cross tracks directly in front of or behind a standing train or equipment. Allow not less than ten (10) feet of clearance ahead of or behind the standing train or equipment before crossing.

157 Use extreme caution when passing between or crossing in front of standing trains or equipment while observing the adjacent tracks.

158 Do not cross between standing coupled cars by climbing over or under couplers.

159 Do not board or leave any train or any other equipment while it is in motion. Employees must not enter/exit vehicles on the contact rail side. Never lean against standing equipment.

160 Enter and leave Metro Rail System property only at approved entrances and exits.

161 While in the performance of their duties, employees must wear all prescribed safety apparel.

KEEPING WORK AREAS CLEAN -

162 Employees are responsible for keeping work areas, facilities and equipment clean and orderly.

163 Promptly remove refuse, trash and salvage materials to appropriate receptacles. Such items must not be thrown from a train or equipment at any time.

164 Designated walkways and roadways are to be kept clean and free of obstructions.

165 Look for and avoid slipping, tripping and falling hazards. Remove slipping or tripping hazards whenever possible; if unable to do so, promptly notify the appropriate supervision and follow their instruction.

REQUIRED CONDITIONS -

166 Employees must not utilize or operate any Metro Rail System vehicles or equipment on or about the tracks without authorization from the Test Controller.

167 Employees are not to alter or render inoperative any safety devices unless specifically authorized by the Test Controller.

168 Seals on control switches must not be broken without authorization from the Test Controller.

169 Employees must not wear sunglasses during the hours of darkness, while in tunnels or in other circumstances where visibility is reduced.

SECTION III DEFINITIONS

"A" Car - The odd numbered passenger vehicle of dependent pair that carries the air compressor.

Accident - An unforeseen event or occurrence which results in injury or property damage.

Air Springs - A pneumatic suspension system on each rail vehicle to provide ride quality and automatic floor elevation adjustments.

Aspect - The appearance of a signal conveying a visual indication as viewed by a Train Operator from the direction of an approaching train.

Automatic - The term applied to a system, sub-system or device which has the inherent capability to function without direct manual participation.

Automatic Speed Regulation (ASR) - The function of ATO which controls vehicle propulsion and braking effort to reach and maintain a desired speed within a desired tolerance.

Automatic Train Control (ATC) - The complete, automated, train control system comprised of ATO, ATP, and ATS.

Automatic Train Operation (ATO) - A sub-system within ATC to automatically regulate train speed and perform programmed station stopping, and is subordinate to ATP.

Automatic Train Protection (ATP) - The subsystem within the ATC system which maintains safe train operation through a combination of train detection, train separation, and speed regulation.

Automatic Train Supervision (ATS) - A sub-system within ATC to monitor train operation and maintain traffic patterns, and is subordinate to ATP.

Auxiliary Pocket Track - A designated track, auxiliary to the mainline track, used for storage, transfer of cars between rail lines, or other purposes.

Ballast - Selected material placed onto the rail roadbed for the purpose of holding the track in line.

"B" Car - The even numbered passenger vehicle of dependant pair that carries the batteries, converter, knife switch, ATO and communication equipment.

Berth, Train - The space designated for a train of given length to occupy when it is stopped at a station platform, in a terminal, or at some other designated place.

Berthing Verification - A part of the ATO system that verifies when a train is stopped at the proper location within a station and permits the platform side doors to be opened.

Block, Absolute - A specific section of track a rail vehicle is not permitted to enter while the block is occupied by another rail vehicle. This block is strictly governed by the authority of the Test Controller.

Block, Permissive - A method whereby a Train Operator is authorized by either signals or Test Controller's orders to enter a block already occupied by another train in accordance with the rules.

Block, Test - A block of Segment 2A track having specified limits for conducting a specific test or tests authorized by the Test Controller.

Block, Track - A section of track of defined limits the use of which is governed by fixed signals, cab signals or both, or the Test Controller's orders.

Blue Flag - A portable blue flag, light or marker placed at both ends of a rail vehicle as an indication that personnel are working on, under or about the vehicle(s). Any rail vehicle(s) so protected must not be coupled to or moved. Other rail vehicles must not be placed where they will obstruct the "blue" signal in any way without first warning the workmen.

Blue Light Station - A designated location within the Rail System identified by a blue light where traction power may be **DE-ENERGIZED**. It also includes an emergency telephone, fire telephone, and if in a station, the deluge system activation controls.

Brake, Dynamic - The primary braking system where the electric current, derived from the motors acting as a generator, provides controlled braking.

Brake, Emergency - The maximum braking that can be obtained, but once activated cannot be released until the train has come to a complete stop and required associated actions are initiated.

Brake, Friction - Controlled, air-blended systems applying stopping forces to a brake shoe on each wheel tread.

Braking (Full Service) - The maximum braking that can be obtained without going into an emergency stop condition.

Bulletins - Test Operations will contain any permanent changes or additions to the rules issued over the signature of the MTA Manager of Rail Activation during the test operations. The bulletins will be numbered consecutively from January 1st of each year.

Bulletin Boards - The specific location where employees reporting for duty will examine any new bulletins or notices posted effecting the operation of the system.

Bumping Post - Structure at the end of tracks to prevent car(s) from rolling off the track.

Cab - The operating compartment of a rail vehicle from which control of the vehicle is achieved.

Car Mover - A self powered auxiliary vehicle used to move a disabled vehicle, or move a vehicle in de-energized territory.

Chock, Wheel - A device placed under a rail vehicle between the top of the rail and the rail vehicle wheel to prevent vehicle movement when brakes are not applied or are defective.

Clearance Card - The Clearance Card, when properly filled out, authorizes a Train Operator to operate the train or a rail vehicle with sealed switches in the bypass mode or to pass an interlocking signal displaying a "stop" indication. All Clearance Cards must be turned in to the Test Controller at the end of the work day.

Clearance, No - A location within the Metro Rail System where no clearance exists between fixed wayside structures/appliances and a moving vehicle operating on the track structure.

Coast - Train movement that occurs during MTO, RMO, or EMO operation when the manual controller is in the 'coast' position, and neither power or brakes are being applied.

Coast Command - Cab signal which de-energizes all propulsion on the train and allows the train to coast at speeds up to 8 MPH. The aspect is termed "8 NP".

Collector Shoe - That part of the vehicle current collector assembly that slides along the electrified contact rail to conduct primary power to the vehicle, and return regenerative braking power from the vehicle to the contact rail.

Command Zero "0" - A look ahead feature that prevents a train from leaving a station when there is a section of contact rail that is de-energized ahead.

Consist - The number and specific identity of the cars within the make up of a train.

Contact Rail - The electrical conductor (rail adjacent to running rail) which provides the 750-volts direct current to the vehicle through contact with the current collectors (shoes) on the vehicle.

Contact Rail Side Approach - A mounted extension of the contact rail alongside the running rail which provides a method for lifting the vehicle collector shoe onto the contact rail and providing uninterrupted traction power to the vehicle for continued rail vehicle movement.

Control - The Central Control Facility location having absolute authority over all mainline operations.

Control, Yard - The location from which all Metro Red Line yard activities are authorized and directed.

Controller - The designated employee on duty at Control having absolute authority over train movements and other activities affecting train movements and other system operations on the mainline.

Controller, Test - The designated employee on duty at the Segment 2A Test Control Facility having absolute authority over all train movements on or affecting the designated Segment 2A test operations area.

Controller, Yard - The designated employee on duty in Yard Control having absolute authority over train movements and other activities affecting train movements and other system operations in the Yard.

Couple - To connect rail vehicle units in order to permit the resulting consist to be operated from one (1) cab.

Coupler - A device for a mechanical, electrical and pneumatic joining together of rail vehicles and/or trainline control functions to each car in the consist.

Crossover - Switches and track so arranged to provide a route from one track to another.

Crosspassage - Auxiliary mainline rooms connecting the AR/BR and AL/BL tracks which allow access or egress from one tunnel track to the other.

Deadman Control - A device used within the manual controller system on the vehicle operating console which must be held in the operating position before vehicle movement can occur and will bring the vehicle to a stop when released.

De-energize - To shut off electrical power.

Derail - A device designed to cause moving rail equipment to leave the rails.

Derailment - When a train or car wheel leaves the rail.

Dispatching - The process of starting a train into service from a terminal or transfer track.

Diverging Route - A change in a trains directional movement over a reverse track switch to allow for crossover movement, train storage, reversing direction or other purposes.

Dwell Time - The total time from the instant that a train stops in a station until the instant it resumes moving.

Emergency - A condition that can result in injury to passengers or employees, damage to the equipment and property or any combination of the circumstances.

Emergency Management Panel (EMP) - Command point installed on the wall in public areas of each passenger station for coordination of fire/rescue and all supervisory forces. Also serves as a backup to the SCADA system for controlling ventilation, gas monitoring and communications.

Emergency Trip Station (ETS) - A push-button device at Blue Light Stations that, when activated, de-energizes traction power to each designated track section within the limits of the power feed.

Energize - To turn on electrical power.

Energized, Equipment - Electrical apparatus, wires, cables, switches and motors which are connected to an electrical power source and are considered "live".

Facing Movement - The switch points face toward the approaching train movement.

"F" End - The end of the passenger vehicle containing the operators cab.

Flag - A device used for relaying signals indicating conditions in the right-of-way. A flag may be made of cloth, metal or other suitable material, or may be a light during hours or conditions of darkness.

Flagging Protection - Flags and lights/lanterns used by work crews for protection while working on or about the track.

Flat Car - An unpowered, non revenue vehicle, operating on tracks moved by a powered rail vehicle used to assist with on track maintenance, or for other purposes.

Fouling Point - The location on a track (normally marked in yellow) beyond which vehicle movement or storage of a rail vehicle will interfere with vehicle movement on another track.

Gap Bridgeable - A break or distance between contact rail section, which can be bridged by the collector shoes of the lead and rear trucks of a car.

Gap (Non-Bridgeable) - Gaps in the contact rail that are longer than the distance between the front and rear collector shoe on the trucks of a single passenger vehicle.

Grade Crossing - A roadway or walkway crossing the tracks.

Guard Rail - A rail mounted to the inside of the running rail of a switch opposite the frog to keep the car wheel/flanges from striking the point of frog.

Hazard - Any real or potential condition that can cause injury, death, damage or loss of equipment or property.

Headway - The time interval, measured front to front, between successive vehicles or trains moving along the same track in the same direction.

Hi-Rail Equipment - Tire-mounted, vehicles equipped with flanged steel wheels that allow the equipment to be operated on tracks or highway.

Incident - An unforeseen event or occurrence which does not result in injury or property damage.

Indication - The information conveyed by the aspect of a signal as viewed by a Train Operator.

Interlocking - An arrangement of signals, switches, track and control apparatus so interconnected that functions must succeed each other in a predetermined sequence, thus permitting train movements over routes only if nonconflicting conditions exist.

Interlocking Limits - The tracks between the extreme outer, opposing, interlocking signals of an interlocking.

Local Control Panel - Wayside train control equipment having interlocking control capability, normally located in station train control and communication rooms.

Mainline - The territory controlled by the Test Controller in Seg-2A, consisting of: main tracks; interlockings; turnback tracks; controlled sidings; and tail tracks.

Main Track - The designated direct fixed track surface on the Mainline upon which trains are operated by cab signals, fixed signals or both when authorized by the Test Controller, in a manner prescribed by the rules.

> **AR/BR Track** - Normal westbound track from Westlake/MacArthur Park to Vermont (AR) and Wilshire/Western (BR).
>
> **BL/AL Track** - Normal eastbound track from Wilshire/Western to Vermont (BL) and Westlake/MacArthur Park (AL).

Manual Controller - The control handle that allows the Train Operator to manually control operation of the train.

Mode: Automatic Train Operations (ATO) - Train movement controlled by a sub system within ATC to automatically regulate train speed and perform programmed station stopping, and is subordinate to ATP.

Mode: Emergency Manual Operations (EMO) - Train movement completely controlled by the Train Operator in compliance with the rules and Test Controller's orders, and without monitoring or protection. Maximum train speed in this mode of operation is 25 M.P.H.

Mode: Manual Train Operations (MTO) - Train movement controlled by the train operator including train speed stopping and door control, and with full ATP. Reverse running on the mainline will be in MTO mode with full ATP. Maximum train speed is 55 M.P.H.

Mode: Restricted Manual Operations (RMO) - Train movement controlled by the train operator with ATP Overspeed Apparatus limiting maximum train speed to 10 M.P.H. This mode will be used for normal operations in the yard area and as a means of equipment failure recovery on the mainline.

Mode: Uncouple/Jog - Train movement in reverse direction for uncoupling a dependent pair from another dependant pair. Jog-Train movement in the reverse direction from the operating cab is for a maximum distance of nine feet. Appropriate horn signal must be sounded.

Mode: Wash/Couple (WCO) - Train movement controlled by the train operator through the use of the Couple/Uncouple remote control box. This feature limits the vehicle movement to 2 M.P.H.

Notices - Notices will indicate instructions to all Test Operations Personnel.

Notices (Procedures) - Procedure notices will advise the Test Operating Personnel on the procedure to be followed in a particular circumstance. All notices will be numbered consecutively from January 1 of each year.

On-Scene Coordinator (OSC) - The first MTA employee to arrive at the scene of an accident until relieved by a Rail Transit Operations Supervisor who becomes in-charge of the accident scene and all MTA response activities. The OSC is the MTA's primary contact with all emergency response agencies.

Performance Level - One of the series of commands from ATS to Automatic Speed Regulation (ASR), used to modify acceleration and ATP speed limit only when ATP speed is above 25 M.P.H., to achieve a desired traffic pattern. The five performance levels which can be selected are as follows:

1. PL-1: 100 percent ATP speed limit and 100 percent acceleration.

2. PL-2: 85 percent ATP speed limit and 100 percent acceleration.

3. PL-3: 85 percent ATP speed limit and acceleration limited to 2.4 mi/hr/sec, which is 80 % acceleration.

4. PL-4: 75 percent ATP speed limit and acceleration limited to 2.4 mi/hr/sec, which is 80 % acceleration.

5. PL-5 50 percent ATP speed limit and acceleration limited to 1.5 mi/hr/sec, which is 50 % acceleration.

Pilot - A person assigned to ride the front of rail vehicle while the vehicle is being operated from other than the lead end. This person acts as the operator's eyes during train movement.

Portal - The entry, exit point to the tunnel.

Posted Speed - The maximum allowable speed over a section of track authorized by fixed signal, temporary signal or rules.

Power Clearance - Form which when completed records the energized or de-energized status of traction power apparatus, i.e. breakers and grounding straps.

Power Permit - Form which when properly completed authorizes qualified employees to perform work on energized circuits, apparatus or control devices without jeopardizing personal safety or property.

Power (Traction) System - The substations, feeder cable, contact rail, running rails, switchgear and other equipment interfacing with public utilities or other power source for the movement of trains and their auxiliary systems.

Programmed Station Stopping - A train stop produced by a closed loop automatic application of braking, such that the train is stopped at a designated point within a station according to a pre-determined speed distance profile.

Rail Vehicle - A self-propelled vehicle operating on tracks, which could be a passenger vehicle (car), hi-rail equipment or other truck and track equipment.

Red Tag - A two-part, red identification tag issued by the Test Controller to designated construction, testing or maintenance personnel that have been approved in the Track Allocation Meeting to work in an area where the contact rail will not be energized and train operations will not be conducted while the Red Tag is in their possession. Test Controller will give the individuals one half of the Red Tag and keep the other half. Not until all the Red Tags are returned to the Test Controller will traction power be restored or reassignment of the red tags be permitted by the Test Controller.

Red Tag Area - The limits of the Red Tag area may change weekly during Track Allocation Meeting every Tuesday, the Track Allocation Coordinator will define the limits of the Red Tag area for the following week.

Red Tag Desk - The desk where Red Tags are distributed and returned. The Test Controller is located at the Red Tag Desk.

"R" End - The end of the passenger vehicle that is semi-permanently connected by a draw-bar assembly and does not contain the operators cab.

Repeat Time - The time issued by a Test Controller to a Train Operator on a clearance card. The clearance Card is not valid until the "Time Repeated" has been given to the Employee by a Test Controller and logged.

Rescue Train - Rail equipment used to retrieve disabled rail vehicles.

Restricted Speed - See Speed, Restricted.

Route - The path a train is to follow.

RTOS - Rail Transit Operations Supervisor.

Run-through - The process of passing a station platform without stopping.

Section Gap - A space in the contact rail at specific locations to isolate the flow of traction power within a defined track section.

Sectionalizing - De-energizing a specific contact rail section for work or other purposes.

Siding - A track auxiliary to the main track for turnback and storing trains.

Side Approach - See Contact Rail Side Approach, 11.

Signal - A method of conveying a visual message to the Train Operator concerning conditions affecting train movement. The signal as viewed by the Train Operator is the "aspect". The information conveyed by the "aspect" is the signal's "indication".

Signal, Audible - A method of conveying information or attracting attention by the use of a sound producing device.

Signal, Bag - A cover placed over a wayside signal that eliminates the ability of the wayside signal from displaying a visual aspect to the Train Operator. When a wayside signal is to be covered or "bagged" the wayside signal is considered out of service.

Signal, Cab - A speed command indication on the Train Operator's operational console which conveys a visual message indicating the prevailing allowable speed for the vehicle.

Signal, Fixed - A signal at a specific location along the track area providing information regulating the movement of rail vehicles.

Signal, Hand - A signal indication used to govern vehicle movement by the motion or position of a person's hand/arm, flag, light or object.

Signal, Interlocking - A fixed wayside signal governing movement through interlocking.

Single Track Operation - The operation, within defined limits, of trains operating in both directions over a single track.

Slip/Slide System - An on board protection system for detecting wheel slip on rail cars during acceleration or braking, that prevents the rail car wheels from locking.

Slow Zone - An area within defined limits where train or rail equipment speed is reduced for trackwork or other purpose.

Special Orders - Cover temporary changes to this manual governing special conditions for a specific period of time issued by the MTA Manager of Rail Activation and numbered consecutively from January 1st of each year.

Speed Limit - The rate of speed at which a rail vehicle may travel.

Speed, Restricted - The operating speed that will permit stopping a train, within one half the range of vision, short of an improperly lined switch, track defect, rail vehicle or train and any obstruction, not to exceed 15 mph.

Standard Operating Procedures (S.O.P.s) - The S.O.P.s contain instructions explaining operation, performance, and procedural responsibility for Metro Red Line Employees.

Station, Passenger - A place designated for the purpose of loading and unloading passengers.

Stinger - A portable device which provides traction power to a vehicle for movement in/out and within the main shop building.

Substation - Traction Power (TPSS) a facility used to rectify 34.5 KV AC to 750 VDC for distributing electricity to the contact rail.

Sweep Train - The first train to operate over any section of the Mainline right-of-way each day or after an interruption of service exceeding one hour must be operated at restricted speed. Train Operators must be especially alert and stop short of: obstructions on the track; any damage to track, contact rail, wayside signals; improperly lined switches; or any conditons which could be hazardous to the operation of train. Should any hazardous condition exist the train must be stopped and the condition reported to Test Control.

Switch - A track device enabling rail vehicle movement from one track to another. There are two types:

a. Remote-controlled - Operated from a distant panel or track impulse.
b. Manual - Operated by hand.

Switch, block - A wooden block placed in the open switch point used to hold a track switch in a particular position.

Switch, clamp - A device used to lock a closed switch point in a particular position, either normal or reverse.

Switch, Dual - An automatic powered switch that can be operated manually.

Switch Position, Normal - The track switch positioning allowing a rail vehicle to make a straight-through movement.

Switch Position, Reverse - The track switch position allowing a rail vehicle to make a diverging or merging movement.

Terminal Station - The two stations located at each end of the rail system where turnback operations are normally made.

Test Coordinator - Designated employee responsible for conducting tests.

Test Control Facility - The location where all Segment-2A Mainline operations are authorized, directed, and controlled.

Test Operations Procedures (T.O.P.s) - The T.O.P.s contain instructions explaining operation, performance and procedural responsibility for Metro Red Line employees in Seg-2A.

Track - The two adjacent running rails the train or other rail vehicles operate upon.

Track Allocation Notice - A published weekly summary that indicates the specific Contractors, maintenance and testing personnel that will be scheduled to work in Segment 2-A of the following week. It indicates the limits, time, and days of the week for these activities.

Track, Tail - A designated track auxiliary to the main track used for train storage, reversing direction or other purposes.

Track Turnback or Controlled Siding - A designated track auxiliary to the main track for limiting the run of a train or other purposes.

Traffic - Movement of trains over a main track. There are two types of traffic:

a. Normal traffic - Movement of train over a main track in the direction prescribed by the rules for that track.

b. Reverse traffic - Movement of trains over a main track in the direction opposite to that prescribed by the rules for that track.

Trailing Movement - The act by which switch points are facing away from the approaching train movement.

Train - One or more rail vehicles combined into an operating unit; or two or more cars with headlights displayed to the front and taillights to the rear.

Train Identification Control Unit (TICU) - A unit located in each operators control console that is a component of automatic train supervision performing train to wayside communications functions such as verification of Badge Number, Train Run Number, Work Run Number, Destination Code, and Train Length.

Train Length - The number of rail cars in a train, specifically its overall length in terms of feet.

Train Operator - The employee having direct control and responsibility for the safe movement of the rail vehicle.

Train Order - A written set of instructions in proper format which indicates instructions given by the Test Controller affecting Train and/or maintenance equipment movement. A Train Order can only be annulled or fulfilled.

Trainline - The bundled wire cable routed between cars and inter-connected by electrical couplers to allow transmission of electrical signals and pneumatic functions to flow between all cars within the train consist.

Transfer Point Tracks - The tracks outside the yard limits that connect the mainline tracks to the transfer tracks.

Transfer Tracks - The tracks within the yard limits that connect the transfer point tracks to the YR/YL yard tracks.

Trip Stop - Mechanical device placed on a running rail which stops a train by activating braking systems.

Truck - The underframe containing the wheels, current collectors, traction motors and braking components of the rail vehicle.

Wayside Restriction - Operating instructions given to employees advising of conditions in the track area (mainline and yard) affecting the operation of rail vehicles. These restricted areas of defined limits could be the result of track allocation, work permits, emergency conditions or special orders which restricts train movement within a particular area of the system.

Work Permit - A specific authorization for equipment and personnel to be present and/or work to be performed on or about tracks, right-of-way, yard or shops; within defined limits.

Work Train - Non-revenue service train used to assist in on-track maintenance or for other purposes.

Yard Limit - A specific location which denotes the separation of yard tracks from mainline tracks and shop limits.

Yard Tracks - All tracks within yard limits, used for rail vehicle storage, repair or other purposes as prescribed by the rules.

SECTION IV SIGNALS

HAND SIGNALS

200 Hand signals may also be given by a hand-held flag or light of the prescribed color.

201 A white light will be used as prescribed by the rules during hours of darkness, in subways or where normal visibility is reduced.

202 Hand signals must be clearly given in the prescribed manner while facing the Operator of any train track equipment, or rail vehicles.

203 Employees must not use a red flag or red light for a "proceed" signal. Train Operators must not accept a "proceed signal" given by anyone using a red flag and or light. Train Operator receiving such a signal must stop, notify Test Controller and follow his/her instructions.

204 Employees giving hand signals must locate themselves so that the signals will be clearly understood and repeat hand signals until acknowledged by train or vehicle operator. Train Operators must ensure the signals are intended for them.

205 Train Operators must stop for any signal that is unclear or for anyone waving violently on or near the trackway.

206 The disappearance of a hand signal governing the movement of any track equipment or rail vehicles, including pushing or backing, must be regarded as a "stop" signal. Employees must assure visibility of hand signals before moving the train.

207 Authorized hand signals are illustrated as follows:

	Aspect	Indication	Example
a.	Swing arm horizontally at right angle to the track	Stop	
b.	With arm extended at right angle to the track, make slight vertical movements with closed hand	Reduce Speed	
c.	Raise and lower arm vertically at right angle to the track	Proceed	

c	Swing arm slowly in a circle at right angle to the track	Back Up	
e	Swung horizontally across the body above the shoulder, when car is standing.	Apply Brakes	
f.	Held vertically above the shoulder when car is standing.	Release Brakes	

208 Flagging Signal Appliances of the prescribed color will be used to display the following aspects and indications:

	Aspect:	Indication
a.	Red	Stop.
b.	Yellow	Caution; proceed at restricted speed ready to stop at next signal or Flag person.
c.	Green	Resume authorized speed.

FIXED SIGNALS -

209 Fixed signals of various types are installed in specific locations to promote safe operations under varying conditions. Train Operator must be completely knowledgeable regarding the indications and observe all aspects governing train movement.

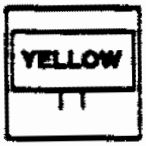
210 Fixed signals which are damaged, missing, or displaying an improper or dark indication must be considered in its most restrictive aspect (Red). The Train Operator must report the condition to the Test Controller immediately and follow his/her orders.

211 Fixed signals apply to trains running in both the normal direction of traffic and in the reverse direction of traffic.

212 Flags or lights of the prescribed colors must be used as temporary fixed signals, on the trackway, as required, by the rules and procedures.

TRACKWAY

213-1 Following are the types of fixed signals which Train Operators may encounter:

	Aspect	Sign Indications
A		BLUE FLAG/SIGN/LIGHT Men working on or about cars. Be governed by Test Operation Procedure No. 6.
B		GREEN FLAG/RESUME SIGN/LIGHT RESUME AUTHORIZED SPEED, after the operating cab passes flag following a restricted speed area.
C		RED FLAG/SIGN/FLARE STOP AT FLAG, track out of service. Call Test Controller. Note: Red Flag Signal is clamped to the running rail furthest away from the contact rail at stopping distance from both directions in advance of work area.
D		YELLOW FLAG/SLOW SIGN/LIGHT Proceed at, restricted speed, PREPARE TO STOP at the next signal or flagperson.
E		SPEED DO NOT EXCEED SPEED indicated. *Note: Signal is displayed at a braking distance in advance of a permanently, restricted speed area.

F 

YARD LIMIT
Sign placed at a specific location between the tracks to denote the separation between the yard tracks and the mainline tracks and the proper authority that governs the use of each area. Train Operator will **STOP** at the Yard Limit sign and contact the appropriate Test Controller.

G 

APPROACH
Proceed at restricted speed **PREPARED** to **STOP** at next signal or flagperson.

H 

SHOP LIMIT: Placed at location(s) which separate shop tracks from yard tracks and the proper authority that governs the use of the area. Train Operators will **STOP** at Shop Limit signs and contact the Vehicle Maintenance Supervisor.

213-2 Following are the types of Fixed Signs which Train Operators may encounter:

A 

HORN SIGN
Train Operator will sound the authorized horn, as required by operating conditions, when the cab is at this sign.

B 

MILEPOST SIGN
Specific location on the Mainline to be used as a reference point when reporting incidents, accidents of train problems.

C 

NO CLEARANCE SIGN
Indicating to employees that no clearance exists between fixed wayside structures or appliances and a moving vehicle operating on the track structure.

Aspect: Yellow Stripes, Black Background
Indication: No Clearance Area

D

CONTACT RAIL SIDE APPROACH SIGN
A designated location on the mainline and within the yard limits where all employees MUST NOT attempt to step over the Contact Rail Cover Board.

E **2-4-6**

CAR SPOT LOCATION MARKER: Signs in yard only on storage tracks sections indicating spot location for consists lengths which ensure trains are clear of roadways.

F **2-4-6**

PLATFORM BERTHING MARKERS: Signs located on each station platform indicating proper berthing position for consist length.

G

CAR CLEAR MARKERS: Placed at designated locations along main tracks indicating when consist is clear for evacuation to emergency walkway depending on train length.

H

TRACK DESIGNATION-YARD ONLY: Signs indicating proper track designation located on each track following a merging or diverging movement.

I

FOULING MARKER: A yellow cross-tie or strip between running rails beyond which vehicle movement or storage of a rail vehicle will interfere with movement on a nearby track (yard only).

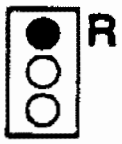
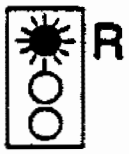
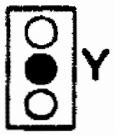
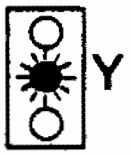
214 YARD SIGNALS

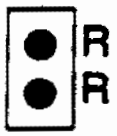
Yard signal aspects and indications are as follows:

ASPECT	INDICATION
	RED- STOP Call Yard Controller.
	GREEN- Route aligned, call Yard Control for authorization to proceed.
	RED over RED-STOP. Bumping post ahead. Do not pass signal. 

215 MAINLINE INTERLOCKING SIGNALS

Interlocking signal aspects and indications are as follows:

ASPECT	INDICATION
	RED- STOP Call Test Controller. Permission to pass Stop Signal granted with Clearance Card only.
	FLASHING RED-STOP Interlocking Block occupied. Proceed "On Test Controller's Orders". Be cautious and prepared to stop short of train, broken rail, misaligned route or other obstruction.
	YELLOW- Proceed on Cab Signal and/or Test Controller's orders, Normal traffic diverging route aligned and locked.
	FLASHING YELLOW- Proceed on Cab Signal and/or Test Controller's orders, Reverse traffic diverging route aligned and locked.
	GREEN- Proceed on Cab Signal, Normal traffic straight route aligned and locked.
	FLASHING GREEN- Proceed on Cab Signal and/or Test Controller's orders, Reverse traffic straight route aligned and locked.



RED OVER RED- STOP.
Bumping post ahead. Do not pass signal.

CAB SIGNALS -

216 Cab signal rules are in effect for normal and reverse mainline traffic movements in designated cab signal territory. Automatic station stopping is not provided in reverse traffic operation.

217 Cab signals are located on the Train Operator's console and are correlated to speedometer indications.

218 Cab signal aspects are displayed by an arrangement of sequential colored lights on the Train Operator's console, indicating the maximum authorized speed. The lights will flash when ATP detects train overspeed.

219 If cab-signal and fixed-signal indications conflict, the most restrictive will govern. Train Operator must notify the Test Controller immediately.

220 Restricted manual operation RMO will be used in cab signal territory only when authorized by the Test Controller for the following conditions:

a. Movement of a Rescue Train into a block occupied by a disabled train.

b. Cab signal failure.

c. Adding or cutting cars during consist changes.

221 Regulated speed is illustrated by:

Aspect	Indication
00, 09, 25, 40, 45, 55, 70	ATP Speed limit adjusted by performance level.

222 Modes of Operation

Mode	Indication
a. Auto (ATO)	Mode selector switch in AUTO position with operation under ATP.
b. Manual (MTO)	Mode switch in MANUAL position with speed regulation and station stopping under control of the Train Operator. Train speed limit is enforced by ATP. MTO operations requires authorization of Test Control.
c. Restricted Manual Operation (RMO)	Mode selector switch in manual position; RMO Mode may only be used in cab signal territory (Segment - 2A Test Operations area) when authorized by Test Control or in accordance with Test Operation Procedures. Maximum speed limit is 10 MPH.
d. Emergency Manual Operation (EMO)	Mode switch in MANUAL position and EMO switch enable. Maximum Speed limited to 25 mph. EMO operations requires completed clearance card authorized by Test Control.
e. Wash/Couple	Mode switch in MANUAL position, manual controller in full service brake position, and wash/couple pushbutton held depressed. Train speed limited to 2 mph.

223 FLAGGING

Whenever Wayside work requires a work permit, wayside restriction or slow zone orders are in effect on the mainline, Proper Flag protection will be established in accordance with Test Operations Procedure No. 14, page 81.

The supervisor or work crew leader will be responsible for the proper placement of the protective flagging devices (flags and flagperson) in accordance with Test Operations Procedure No. 14, page 81.

The Train Operator must be familiar with and obey all flagging rules and procedures.

Train Operators will observe the outer yellow flag 1500 feet from the work/slow/impassable zones and must operate at Restricted Speed to enable vehicle to come to a complete and comfortable "controlled stop" at the inner yellow flag located 200 feet from the protected area.

Should no flagger be present at the inner yellow flag location (200 feet) the Train Operator will stop the train, sound two short horn sounds and then proceed at restricted speed until reaching the green resume speed flag unless receiving a signal to stop.

With a flagger present, follow the appropriate hand signal from the flagger.

Train Operator will operate through the work area at a speed dictated by the wayside restriction for the protection area after proper hand signal is received. In the absence of a proper hand signal, Train Operator will proceed at restricted speed or as directed by the Test Controller.

SECTION V: OPERATING RULES

RAIL OPERATIONS -

300 Test Controller will have absolute authority over rail vehicle equipment movements on all tracks on the Segment-2 Mainline.

301 Test Controller and all other test personnel must be knowledgeable of all rules and procedures as well as emergency procedures. Test Controller must have a working knowledge of all systems and facilities of the Metro Rail System.

302 Only approved train or hi-rail equipment movements will be permitted. (See Test Operations Procedure No. 1; page 52).

303 No train or hi-rail equipment shall be operated on the Segment-2 Mainline without a written Train Order received from the Test Controller. Procedures for the issuance of Train Orders are covered by the Test Operations Procedure No. 3; page 57.

304 When a train or hi-rail equipment is to be operated on the Segment-2 Mainline, the Test Controller will establish a Test Block in accordance with Test Operations Procedure No. 4; page 60.

305 Rail vehicle movement must conform to Test Block limits, time of expiration, mode of operation, and other restrictions established on the Train Order.

306 Employees operating vehicles or other rail-borne equipment on rail lines and property must be:

a. In possession of a valid, current certificate of qualification for vehicle operation within the Yard and on the mainline track, and the type of equipment being operated, Employee Identification Card, and current book of rules.

b. Student Train Operators will be under the direct supervision of a qualified instructor or other employee designated as qualified.

c. At no time will any unauthorized or unqualified individuals be allowed to operate any rail equipment within the limits of the Metro Rail System.

307 The Train Operator assigned to the movement of track equipment, car or train has full responsibility for its operation as prescribed by the rules.

TEST OPERATIONS -

308 A Train Operator receiving instructions from the Test Engineer that are in conflict with the rules and procedures, or train orders must stop the train and

report the conflict to the Test Controller immediately and follow his/her instructions.

SPEED -

309 Temporary speed signs may be placed at a safe braking distance in advance of restricted speed areas.

310 Train speed will be governed by cab signal indications when operating in cab signal territory, not to exceed the speed designated for a specific section of track.

311 Maximum speed on a Mainline track must not exceed that prescribed by the rules for that track.

312 Speed of any diverging movement through Mainline switches must not exceed five (5) miles per hour, when operating without cab signals.

313 Work trains must operate at a speed authorized by the Test Controller.

314 No part of the train must exceed the authorized speed through a restricted work area.

TRAIN HORN-

315 Train Operators must sound the authorized horn signal as required by the rules and operating conditions.

316 Unnecessary horn sounds are prohibited.

317 Defective horn equipment must be reported to the Test Controller immediately.

318 Authorized audible horn sounds are illustrated by:
a. o = short sound
b. —— = long sound

319 Authorized Audible Sounds:

Audible Sounds		Indication
o	One Short sound	Used prior to entering a station in revenue or Segment 2A test service.
oo	Two short sounds	Used before moving forward except at passenger stations in revenue service. Also to answer all forward moving hand signals.
ooo	Three short sounds	Used before moving backward or uncoupling cars. Also to answer a "back-up" hand signal.

oooo	Four short sounds	Used to request a hand signal.
————	One long sound	Used when passing stations where no stop will be made.
—— ——	Two long sounds	Warning to persons on or about the track.

HEADLIGHTS/TAIL-LIGHTS -

320 Trains entering or operating on Mainline tracks must display white headlights to the front and red taillights at the rear with respect to the direction of travel.

321 All rail vehicles, so equipped, must use the headlights during all hours of operation.

TRAIN OPERATOR RESPONSIBILITIES -

322 Operating rules, train orders or train operating instructions may be examined by the Train Operator in the performance of duties while the train is stopped. No other reading material shall be allowed in train cabs.

323 Train Operator must frequently observe the operational display console's panel indications and report all malfunctions to the Test Controller.

324 Prior to moving a car, train or track equipment, a Train Operator must check all control switches, that are normally sealed, to ascertain that the seals are in place. Seals found broken must be reported to the Test Controller immediately.

325 Train Operator must not begin movement of a train on the Segment-2A Mainline with broken control seals unless a written Clearance Card is obtained from the Test Controller. (See Test Operation Procedure No 12; page 74).

326 Prior to operating train or hi-rail vehicle on the Segment-2A Mainline, the Train/Vehicle Operator must perform a predeparture inspection in accordance with Test Operation Procedure No. 5; page 62.

327 Train Operator must not allow unauthorized persons to ride in the cab or within any test train. Persons authorized by the Test Controller to be in the cab or in a test train must not engage in unnecessary conversation or action which will distract the Train Operator from the proper performance of duties.

BLOCKING Manual controller -

328 The manual controller must not be tampered with in any way to prevent the spring-returned-brake safety feature from operating properly.

COUPLING/UNCOUPLING -

329 Train Operators shall have the responsibility of coupling and uncoupling cars.

330 Train Operators must use care in coupling and uncoupling cars on Mainline or Yard tracks to avoid injury or damage.

331 Before coupling/uncoupling, care must be taken to ensure that car/cars coupling to or uncoupling from other vehicles are properly secured and that persons in or about such cars are notified.

332 A full stop must be made prior to coupling with approximately ten feet between couplers. A second full stop must be made not more than three feet from the point where the coupling is to be made, and the alignment of the couplers must be checked before attempting to couple.

333 Personnel must never stand between car/cars at any time or when cars are being coupled or uncoupled, except when conducting manual uncoupling operations as prescribed by Test Operating Procedure No. 10; page 71.

334 Coupling or uncoupling should be avoided on a curve, if possible. Coupling on a curve requires assistance of another Train Operator.

335 Do not attempt a coupling/uncoupling while car(s) that are to be added to or cut-off from are in motion.

PUSHING/BACKING -

336 Cars or trains must not be pushed or backed unless the controls at the leading end are disabled.

a. When its necessary to push or back a car(s), authorization must be obtained from the Test Controller.

b. The Train Operator must also have a train operator or RTOS at the leading end of the car or train to watch the track, wayside signals, and switches and constantly keep the Train Operator informed of conditions affecting the train movement.

c. If communications with the train operator or RTOS are lost, not understood or not complete, the Train Operator must bring the train to an immediate stop until communications are reestablished.

337 When pushing a train, a Train Operator or RTOS shall position themselves in the lead cab of the train being pushed; and shall watch the track, wayside signals and switches. If communications with the employee on the disabled train is lost, not understood, or not complete, the Operator shall stop until communications are restored.

When pushing a disabled train EMO must be enabled, and Train Operators must not operate at speeds in excess of 10 mph.

When pulling a disabled train, Train Operators must not operate at speeds in excess of 15 mph.

338 Live (energized) cars may be used to move dead (de-energized) cars with traction motors or brakes cut out at a minimum one-to-one ratio. The maximum number of cars moved together must not exceed twelve (12) cars (Three (3) live pairs, Three (3) dead pairs).

OUTSIDE INDICATOR LIGHTS -

339 White indicator lights, located on the exterior of each cab, on either side, indicate the possible unauthorized use of a sealed EMO switch. Train Operator may be subject to challenge in accordance with Rule No. 448 and Test Operations Procedure No. 12, page 74.

340 Blue indicator lights, located on the exterior of each cab, indicate vehicle trouble. Test operating personnel must immediately report any illuminated blue outside indicator lights on a moving train to the Test Controller immediately.

341 Red indicator lights, located over each side door opening, illuminates when either of the door leafs are open or unlocked. Test operating personnel must report any illuminated red outside door indicating lights on a moving train to the Test Controller immediately.

342 Flashing red indicator lights, located above each door will illuminate and flash when the Passenger Assistance Intercom nearest the door is in use.

DEFECTIVE AIR SPRINGS -

343 A car with defective air bellows must not be operated at a speed exceeding 25 mph.

SECTION VI: MAINLINE OPERATIONS

TRACK IDENTIFICATION -

400 Metro Rail System has two (2) tracks, designated AR westbound and AL eastbound. The most northerly track is AR. See mainline diagram on page 50A.

a. Normal direction of traffic on AR/YR track is westbound from Yard Limit to Wilshire/Vermont.

b. Normal direction of traffic on AL/YL track is eastbound from Wilshire/Vermont to Yard Limit.

c. Normal direction of traffic on the BR Track is westbound from Wilshire/Vermont to Wilshire/Western.

d. Normal direction of traffic on the BL Track is eastbound from Wilshire/Western to Wilshire/Vermont.

CHANGING DIRECTION -

401 The designated direction of movement on a Segment-2A main track must not be changed without authorization from the Test Controller.

402 Before establishing opposing movements, the Test Controller must ensure that the intended movement is properly understood by all Train Operators involved.

EMERGENCY REMOVAL OF POWER -

403 The following will govern when necessary to de-energize the Segment 2A Mainline traction power in an emergency:

In the event of an emergency, press the ETS immediately, then call the Test Controller. Identify yourself by name, occupation, and location. Give the exact area where power has been removed, and state that the Emergency Trip has been activated and locked out.

The person who requested the power removal is the only person authorized to notify the Test Controller when it is safe to restore power. If the person who caused the power removal is required to leave, he/she must advise the Test Controller of the individual designated with the responsibility for authorizing the restoration of power to the affected area.

Upon receiving the authorization to restore the power, the Test Controller will advise the Power Supervisor that it is safe to restore power to the affected area. When the power Supervisor is prepared to restore power, the Test Controller will authorize release of the Emergency Trip Push Button from the lock-out position and issue a "Power On" request.

SWEEP TRAIN -

404 The first train to operate over any section of the Mainline right-of-way each day or after an interruption of service for a definite time (ie: 1 hour) must be operated at restricted speed. A Train Operator must be especially alert and stop short of: any trespasser or obstruction on the track; any damage to track, contact rail, wayside signals; improperly lined switches; or any condition which could be hazardous to the operation of trains. Should any hazardous condition exist the train must be stopped and the condition reported to the Test Controller.

STATION STOP -

405 No Segment 2A station is to be passed without prior authorization from Test Control.

a. When authorized to pass a station, one long audible horn sound must be made in approach to the station.

b. When authorized to run through a station in the manual mode, Train Operators must not exceed 25 mph while any part of the train is occupying the station.

c. When authorized to run through any station, the Train Operator shall make a public address announcement to passengers that the train will not stop and advise passengers of the reason.

d. Whenever a station run through is authorized, Test Control shall ensure appropriate P.A. announcements are made at affected stations.

LOCKING CAB -

406 Doors and windows of inactive cabs must be closed and locked whenever that cab is not in use. Cab door and windows may be open when a Train Operator is occupying an active cab.

407 Before leaving the cab in a situation considered abnormal, the Train Operator must request permission from the Test Controller, report the vehicle's location, the reason for leaving the train, and the estimated return time. The Train Operator must keep his radio with him/her at all times.

408 When permitted to leave the cab, Train Operator must take his/her radio, secure the train against moving, place the manual controller in the full service brake position, turn the mode selector to the off position, remove the train key and lock the cab door. If conditions require that the cab door remains unsecured, Train Operator on returning will observe the position of the switches and controls in the cab before resuming train movement.

TRACKWORK AND/OR REMOVAL OF POWER -

408 Permission from the Test Controller must be obtained before entering, working adjacent to, or fouling any track and/or de-energizing any section of the traction power.

a. If work does not require speed to be reduced, "flagging" rules may not apply. In these instances, hand signal rules will apply.

410 Personnel engaged in work activities, approved on the Track Allocation Notice, on or about the tracks must be provided with flag protection.

411 The Test Controller may permit a specific individual to use or foul a track and/or remove power at or between specific locations.

a. Authorization will be granted for a specific period of time. This time period must not be exceeded without further authorization from the Test Controller.

b. When the request for track includes removal of power, the Test Controller must not grant authorization for work until power has been removed, power section tested to assure power removal is complete and grounds have been applied to the contact rail when required by the situation causing the need for power removal.

412 After receiving authorization from the Test Controller, working limits must be protected by displaying signals and flags in accordance with the rules.

a. The individual who requested authorization must notify the Test Controller when the protection signals are in place. Work may then begin. When work has been completed, the protection signals must be removed.

413 The individual who received authorization must report completion of work, all personnel clear, and the removal of all protection signals and grounding devices to the Test Controller in accordance with Test Operations Procedures.

a. If power was removed, the Test Controller may then order its restoration.

SLOW ZONES -

414 If conditions require that train speeds be reduced, the Test Controller must be advised of the allowable speed limits, and the portion of track affected by the person requesting the slow zone, and if the slow zone will affect both tracks.

415 In order to protect the area in which speed must be reduced, "slow" orders must be implemented and appropriate flags utilized in accordance with flagging. Test Operations Procedure No. 14; (page 81).

416 All trains will be notified of the track limits in which speed must be reduced and the allowable speed permitted while moving through the slow zone area.

417 Only the person imposing the temporary slow zone or their designee may remove it.

418 Speed limit signs or flags will be placed at a safe braking distance in advance of the slow zone in both directions (i.e., normal and reverse traffic) in accordance with Test Operations Procedure No. 14, page 81.

419 A Flagperson assigned to a slow zone will take up a position at least 200 feet in approach to the slow zone where he/she can be clearly seen by approaching Train Operators. Only the Flagperson is authorized to give a "proceed" signal to the Train Operator.

420 Lighted lamps of the prescribed color will be used in the underground section of the Metro Rail System, and above ground between sunset and sunrise.

421 Flags of the prescribed color will be used between sunrise and sunset on the above ground sections of the Metro Rail System. When vision is obscured, lighted lamps will be used along with flags.

422 When operating in flag-protected track areas, the Train Operator must:

a. Approach the designated work area at restricted speed ready to stop. At first sight of a Flagperson in the track area, the Train Operator must acknowledge the presence of the Flagperson by sounding the horn as prescribed in the rules.

b. Bring the train to a full stop short of the Flagperson. Do not proceed if the workers fail to move to a point of safety or if the Flagperson does not give the "Proceed" signal.

c. Upon receiving a "Proceed" signal, the Train Operator must acknowledge by sounding the horn and proceeding with caution at restricted speed, as prescribed by the rules.

TRACTION POWER -

423 Only the Test Controller can authorize Segment-2A traction power for the contact rail system to be de-energized or energized in accordance with Test Operation Procedure No. 7; page 66.

424 Until Traction Power Substations can be monitored and controlled from the Central Control Facility, each substation providing power to a track section must have an Emergency Trip Station in service or an attendant on duty while the track sections(s) are energized.

425 Any Traction Power Substation that can not be de-energized by an Emergency Trip must have an attendant on duty when the contact rail is energized. The attendant must be knowledgeable about operations of the substation and follow instructions from the Test Controller.

426 A lock or approved blocking device and a DO NOT OPERATE tag must be applied to breakers, disconnect switches, or push buttons governing the power supply to track sections de-energized for work crews, defective equipment, or other purposes.

427 A push button, disconnect switch or breaker having a lock or approved blocking device and DO NOT OPERATE tag must not be operated.

AUTOMATIC TRAIN PROTECTION (ATP) -

430 Automatic Train Protection shall be cut in at all times for movements governed by cab signals, except when authorized by the Test Controller.

431 If ATP and/or cab signals fail, the Test Controller must be notified immediately. Test Controller may authorize EMO enabled mode and the train to proceed by fixed signals, operating at reduced speed not to exceed 25 mph, or as otherwise ordered by the test controller.

IRREGULAR STOPS -

432 The Train Operator of a train stopped by a zero cab signal or loss of power must contact the Test Controller immediately.

NOTE: Rules 433 through 438 are Reserved for future use.

REVERSE TRAFFIC -

439 The Test Controller shall be the only person authorized to allow rail equipment to operate in the reverse traffic/direction on the Segment-2A Rail System.

440 Before operating reverse traffic, the Train Operator must have a clear and proper understanding from the Test Controller as to where the train will be routed back to normal traffic. The Test Controller must not change this understanding without first contacting the Train Operator and assuring that he/she fully understands the change.

TRAIN IDENTIFICATION CONTROL UNIT (TICU) -

441 Train Operator shall enter required information such as Badge Number, Train Run Number, Work Run Number, Destination Code, and Train Length into the TICU prior to dispatch from the yard and terminal station.

INTERLOCKINGS -

442 Interlocking controls must be kept in automatic control unless otherwise required by operating conditions.

443 Interlocking controls must not be operated so as to cause a conflict in commands to wayside interlocking equipment governing the operation of any switch, signal, or traffic block.

444 When a route is established through an interlocking for an approaching train, the route must not be changed until the train is stopped at the interlocking signal governing the route and the Train Operator is properly instructed.

445 Prior to changing any route through an interlocking, it must first be established that the train is clear of all switches associated with the interlockings.

446 Train Operator must stop the train before passing a "stop" indication at an interlocking signal and must not move until the aspect to "proceed" is displayed. If the aspect fails to change within one minute, the Train Operator must call the Test Controller.

STOP SIGNAL -

447 A train must not pass an interlocking signal that is not illuminated or displaying a "stop aspect", except as authorized by the rules.

a. The movements governed by valid cab signals will proceed according to the cab signal indication at an interlocking signal that is not illuminated. The Train Operator will report the condition to the Test Controller immediately. If, however, the train is in RMO mode, the Train Operator must stop and contact the Test Controller for instructions. Clearance Card must be issued for train movement passing a Red Interlocking Signal.

b. The Clearance Card must be properly completed by both the Test Controller and the Train Operator. The Test Controller must ensure that the intended movement is completely understood by the Train Operator before the Test Controller authorizes movement and gives a "time repeated" to the Train Operator.

CLEARANCE CARD -

448 The Clearance Card, when properly filled out, authorizes a Train Operator to operate the train or a rail vehicle with sealed switches in the bypass mode or to pass an interlocking signal displaying a "stop" indication.

a. A train must be stopped at the interlocking signal which can not be cleared before the Test Controller will issue a Clearance Card.

b. A separate Clearance Card must be issued for each interlocking signal to be passed, unless otherwise prescribed by the rules.

c. A Clearance Card may authorize a train to pass two (2) interlocking signals within the same interlocking to allow for one continuous movement.

d. The Train Operator must personally complete the Clearance Card as directed by the Test Controller.

e. The Clearance Card is invalid until the Train Operator receives a "time repeated" from the Test Controller.

f. The "time repeated" will not be given by the Test Controller until the Train Operator has repeated the completed Clearance Card correctly and has given an accurate summary of the instructions and verbal orders to the Test Controller.

PASSING A STOP SIGNAL -

449 When authorized by Test Control to pass a stop signal displaying "stop" and enter a block behind another rail vehicle, a clearance card shall have been completed and movement must proceed as prescribed by the rules.

a. Following movements will be made at restricted speed, unless otherwise ordered by the Test Controller.

b. Any opposing movement into a block past an interlocking signal displaying "stop" is prohibited, except to assist a completely disabled train and then only after instructing the Train Operator of the disabled train to remain stopped where the train is standing.

c. No opposing movement will begin until all Train Operators involved have a full and complete understanding of their orders as issued by the Test Controller.

450 Train Operator must stop the train and immediately report to the Test Controller an unauthorized passing of a "stop" indication displayed on an interlocking signal, stating: the train number; location; interlocking signal number; and direction of travel. The Train Operator must stop his/her train and await instructions from the Test Controller and must submit a written report to the MTA Start-Up Manager on the day of the occurrence.

451 When the Test Controller is aware that interlocking signals on the Test Track are not operational or are out of service, he/she will order those signals to be covered with a signal bag. Switches for signals that are bagged must be clamped and blocked in the appropriate switch position. The Test Controller will keep records of which signals are bagged and when switches are clamped and blocked.

452 Before starting a crossover movement on the Mainline without signals, a Train Operator must ensure that the switches at the crossover are properly aligned.

The crossover move must be completed before the switches are restored to their proper position.

453 Employees must not change the position of a Mainline switch unless directed by the Test Controller. (See Test Operations Procedure No. 8 for Hand-Cranking and Hand-throwing Switches; page 68).

454 Trailing a switch point set against the move must not be made through switches unless otherwise prescribed by rules.

455 Rail cars or hi-rail vehicles must not be operated through any interlocking when it is observed that the switch points or other parts of a turnout or crossover are damaged or broken. The Test Controller must be notified immediately.

456 Vehicles so equipped, must not use sand over the switches unless an emergency stop is required.

LOCAL CONTROL PANELS -

457 Local Control Panels shall be key-locked to the central automatic position unless otherwise required by operating conditions.

458 Local Control Panels will not be taken out of central automatic position without specific authorization from the Test Controller.

459 All interlocking controls operated from a Local Control Panel shall only be operated under the direction of the Test Controller.

460 Approved blocking devices must be applied to switch and/or signal controls when prescribed by the rules.

461 A control with a blocking device applied must not be operated nor the blocking device removed until it is safe to do so.

a. Blocking device shall be applied to signal controls governing access to a track where an absolute block has been established.

b. Blocking device must be applied to any defective interlocking control or any control governing the use of an out-of-service track.

c. In both the above conditions, wayside signals governing the use of the track will be placed in manual operations and a stop signal displayed in both directions to approaching trains or other rail equipment.

WRONG ROUTE -

462 If misrouted, a Train Operator must stop his/her train short of the signal governing the route, call the Test Controller, and follow his/her instructions.

DIVERTING A TRAIN -

463 Before diverting a train from its prescribed route, the Test Controller must assure the train is stopped at the interlocking signal governing the use of the diversionary route and assure the Train Operator is properly instructed and has a clear understanding with the test controller regarding the route. ie: where train will be diverted and where train will be returned to normal route.

OPPOSING MOVEMENT -

464 Opposing movements must not be made within an interlocking unless required by emergency operating conditions. Before establishing opposing movements, the Test Controller must ensure the intended movement is completely understood by all Rail Operators involved in the movement. One train must be instructed to hold its position.

ABNORMAL ROUTE -

465 Movements within an interlocking for which a signal can not be displayed must not be permitted, except in an emergency.

a. When authorized by the Test Controller, train movements may proceed on proper hand signals over a route within an interlocking for which a signal can not be displayed. Train operator must be certain of the proper route, and stop at each facing and trailing switch point to determine proper closure and alignment. Speed of movement must not exceed five (5) mph.

TOTAL SIGNAL FAILURE -

466 In the event of partial or total failure of both the cab and wayside signals, trains will operate governed by the rules and Test Controller's orders.

a. Trains will be governed by proper hand signals at interlockings. Absence of a hand signal will indicate "stop". Clearance Cards will not be issued.

b. Trains will proceed after stopping, through and between interlockings at not to exceed 5 mph, and be prepared to stop within one of the Train Operator's range of vision.

SECTION VII: VEHICLE

STORAGE OF CARS -

512 All cars being stored must be properly secured with parking brakes applied, keys removed and end doors locked. Cars on grades or cars with inoperative parking brakes must be stored with at least one wheel chocked in the down-grade direction or in each direction, whichever is appropriate. The Yard or Test Controller respectively must be made aware that a rail vehicle has been chocked to prevent movement in the yard or on the Segment-2A main track.

513 Train Operators storing trains in the yard or on Segment 2A main track must stop their train so that the couplers are approximately five (5) feet from those of other trains.

514 A Train Operator must never leave a car(s) standing in contact with a bumping post.

515 Switches, tracks, roadways and walkways must not be fouled when storing rail vehicle equipment.

PROTECTION OF PERSONS WORKING ON CAR(S) -

527 A blue flag or blue light, displayed at both ends of a rail vehicle or rail vehicles, or on a track is an indication that employee's are on or about the vehicle. A rail vehicle or rail vehicles so protected must not be coupled to or moved. Other rail vehicles must not be placed where they obstruct the view of these blue signals without first securing permission from the employee in charge. (Test Operations Procedure No. 6; page 64).

a. Employees must place the blue signals where they are plainly visible, a distance of 5 feet in front and 5 feet behind the train. Blue flags will be used by day. Blue lights, alone or with blue flags, will be used at night whenever visibility dictates.

b. "DO NOT OPERATE" tags for each working maintenance employee will be placed on manual controller handle in each cab of the vehicle.

c. Employees on rail vehicles protected by blue signals must verbally be notified when the signals have been displayed and when removed.

d. Only the employee in charge, or his\her designee (if more than one shift involved), displaying the blue signals can remove them.

e. The Test Controller must be notified when blue flags are displayed or removed on the Segment 2A Mainline Tracks. The Yard Controller will be notified when blue flags are displayed or removed on the yard tracks.

TRAIN OPERATORS RESPONSIBILITIES

528 The Train Operator is obligated to perform, but is not limited to the following responsibilities:

a. Train Operators must have the appropriate equipment and forms on their person when reporting and while on duty.

b. The Train Operator must have the cars in his/her train under control at all times.

c. Train Operator must be at the operators console prepared to operate one minute prior to the trains departure time.

d. Train Operator must know the number of cars in the train consist and leading and trailing car numbers.

e. Train Operator must insure he/she is operating the correct door control switch when making station stops at all times, and especially when running reverse traffic.

f. Train Operator will insure vehicle doors are kept open a sufficient period of time to insure passengers get on and off the train safely.

g. Train Operator must exercise care to insure passengers are clear of sliding doors at all times and in particular when running train in reverse traffic operation.

h. Train Operator will make appropriate public address announcements aboard his train.

i. Train Operator will not bypass any sealed switch without authority of the Test Controller.

j. Train Operator will not run through any passenger station without authority of the Test Controller.

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SECTION VIII: COMMUNICATIONS

600 Employees using the radio must be certain a clear channel is available except in an emergency. They must identify themselves by train number or job title, whichever is applicable. Messages may be repeated when needed to promote a proper understanding.

601 Train Operators will turn on the portable radio when leaving the active cab to continue communications. Disabled radio equipment must be reported to the Test Controller immediately by alternate means.

602 All radio transmissions must comply with Federal Communications Commission rules.

603 The Test Controller will be the base for all communications on the Test Control channel.

604 Employees must not use obscene or profane language, false or deceptive transmissions.

605 Unnecessary use of radio communication is prohibited. Conversations or announcements must be brief, business-like and to the point. Communications equipment must be used only for rail system business.

606 Communications pertaining to emergencies take priority. Falsely labeling a communication as a emergency, for any reason, is strictly prohibited.

607 Emergency messages may be transmitted over the most expedient means of communication consistent with clear understanding.

608 All communications will be conducted on the assigned channel unless otherwise directed by the Test Controller. A communication in progress must not be interrupted except in emergency.

609 Employees must ensure that radios used during their shift are continuously turned on, the proper channel selected, and set at sufficient volume to receive all transmissions clearly.

610 If radio communications is lost, employee must stop activity and report promptly to the Test Controller by alternate means.

611 The Test Controller will monitor and record communications from the test track area concerning tests, runs, inspections, emergencies and requests pertaining to test operations.

612 The use of any sort of unauthorized audio or visual device while on duty, except for authorized devices (ie; used for instructional purposes, etc.), is strictly prohibited.

613 When initiating an emergency radio transmission it should be in the following described manner. ("Emergency, emergency, emergency. Train No. _____ or Employee No. _____"). State reason for emergency transmission. The Test Controller will give priority to emergency calls. All employees and trains receiving the emergency transmission will clear the radio channel immediately and approach the emergency location prepared to stop and proceed by the emergency location at restricted speed if required.

PHONETIC ALPHABET

A...Adam	H...Henry	O...Ocean	V...Victor
B...Baker	I...Ida	P...Paul	W...William
C...Charles	J...John	Q...Queen	X...X-Ray
D...David	K...King	R...Robert	Y...Young
E...Edward	L...Lincoln	S...Sam	Z...Zebra
F...Frank	M...Mary	T...Tom	
G...George	N...Nora	U...Union	

METRO

SAFETY • COURTESY • SERVICE

IMPORTANT PHONE NUMBERS

Bus Operations Control Center	1-800-252-5282 *Toll Free*
	(213) 972-6111 *Direct*
Transit Police Dispatch	(213) 583-5280
Rail Operations Control Center	1-800-396-2166 *Toll Free*
	(213) 563-5280 *CCF Direct*
Test Control	(213) 383-3606
Customer Information	(213) 626-4455
Customer Lost & Found	(213) 937-8920

5301 Wilshire Blvd., Los Angeles

CODE 1	General Alert from Control
CODE 2	Serious Accident. Police/ambulance responding
CODE 3	Crime emergency/disturbance at stated location
CODE 5	Community Emergency
CODE 6	Transit Police need assistance
CODE 9	Digital Communications System Down (Voice Only)
996-T	Bomb Threat. Limit Radio Transmissions
10-3	Stop Transmitting/emergency traffic only
10-4	Message Acknowledged
10-11	In Service
10-13	Repeat message
10-16	Call by Telephone
10-19	Time Check
10-20	What is your location?
10-21	B.O Farebox
10-22	B.O. Equipment

MTA RADIO CODES

10-24	Employee stop at Operator's platform (Light Rail)
10-25	Dirty Vehicle
10-26	Graffiti at stated location
10-29	B.O. Radio
10-31	Blockade or unusual condition
10-32	Fire at stated location
10-37	Blockade or problem cleared
10-40	How do you read this transmission?
10-41	Operating over 10 minutes late
10-42	Radio signal good
10-43	Passenger Overload
10-48	Flood at stated location
10-52	Lost passenger
10-53	Missile struck vehicle
10-54	Sick Passenger
10-55	Sick Operator
10-56	Damage assessment
10-57	Marijuana smokers
10-58	Drug/Alcohol Screen
10-59	Wheelchair/Disabled Customer Activity
10-71	Collision of an MTA vehicle and an object
10-72	Collision of an MTA vehicle and a pedestrian
10-73	Collision of an MTA vehicle and another vehicle
10-74	Collision of MTA vehicles
10-76	Derailment
10-81	On assignment
10-85	Return to your district
10-86	Have I any calls?
10-89	Out of service
10-93	(Unit to unit) Available for previous call
10-390	Intoxicated Passenger

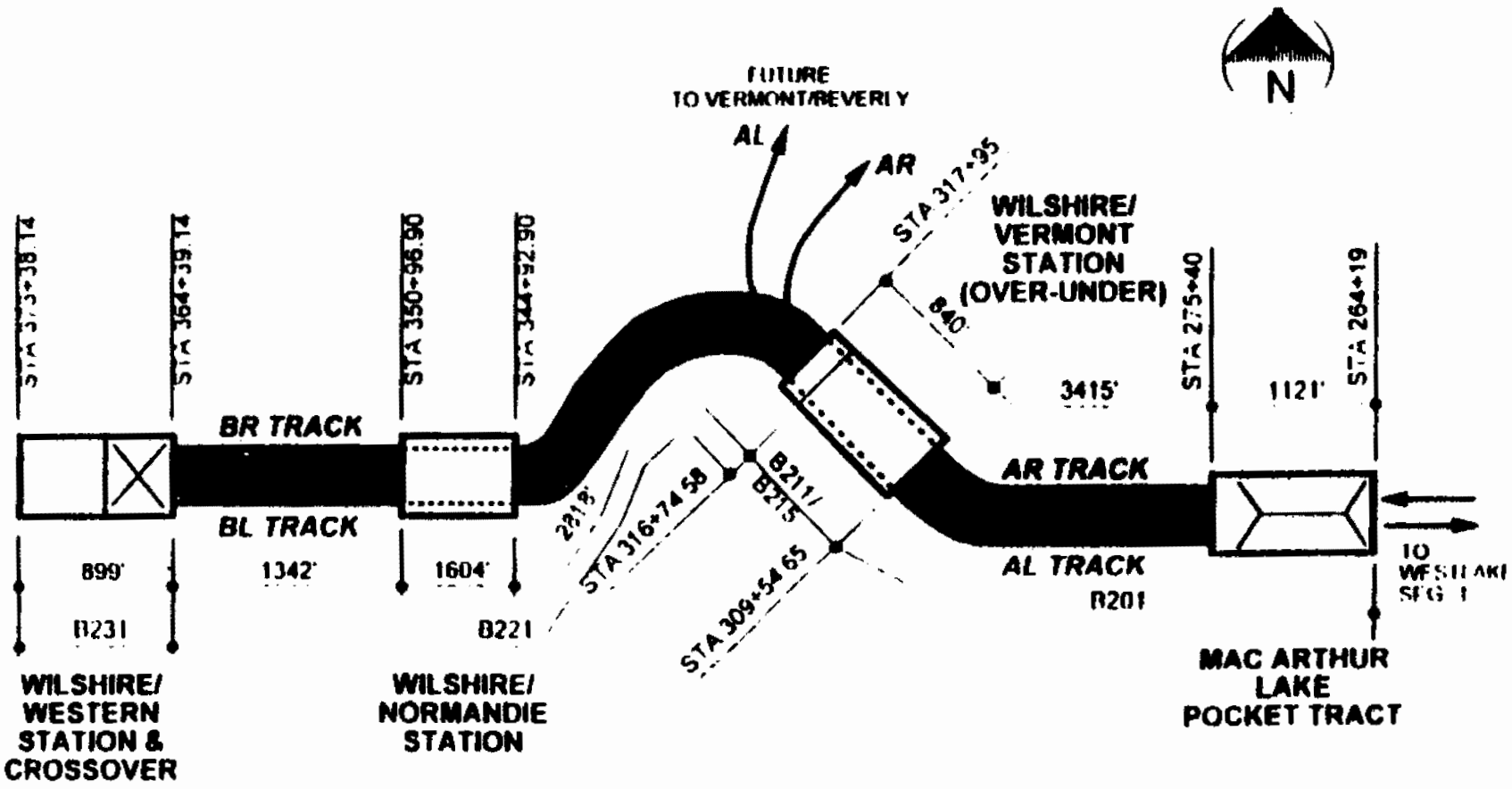
SECTION IX: **INSTRUCTIONS**

SPEED -

700 Unless otherwise indicated with a more restrictive speed, maximum allowable train speeds in manual mode are as follows:

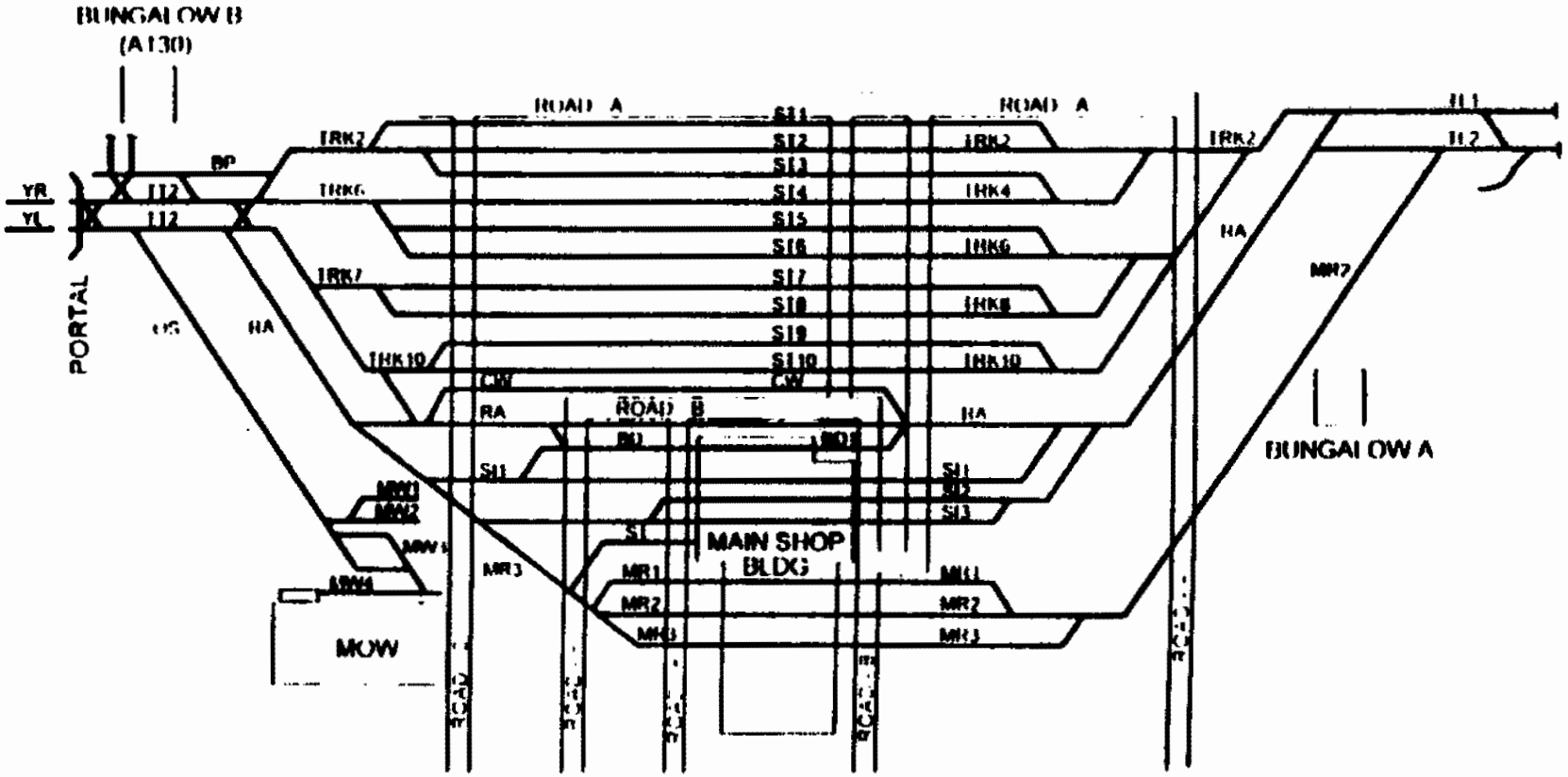
Maximum Speed	Location
Yard Track	
2 mph	in car wash.
5 mph	on shop tracks.
10 mph	in the yard; or other auxiliary tracks.
Mainline	
5 mph	Diverging route through switches.
10 mph	Manual Restricted (RMO).
25 mph	Manual Emergency (EMO) and proceeding through a station platform.
55 mph	On the Mainline or as enforced by Automatic Train Protection.

Segment 2A - Metro Red Line
Main Line Schematic

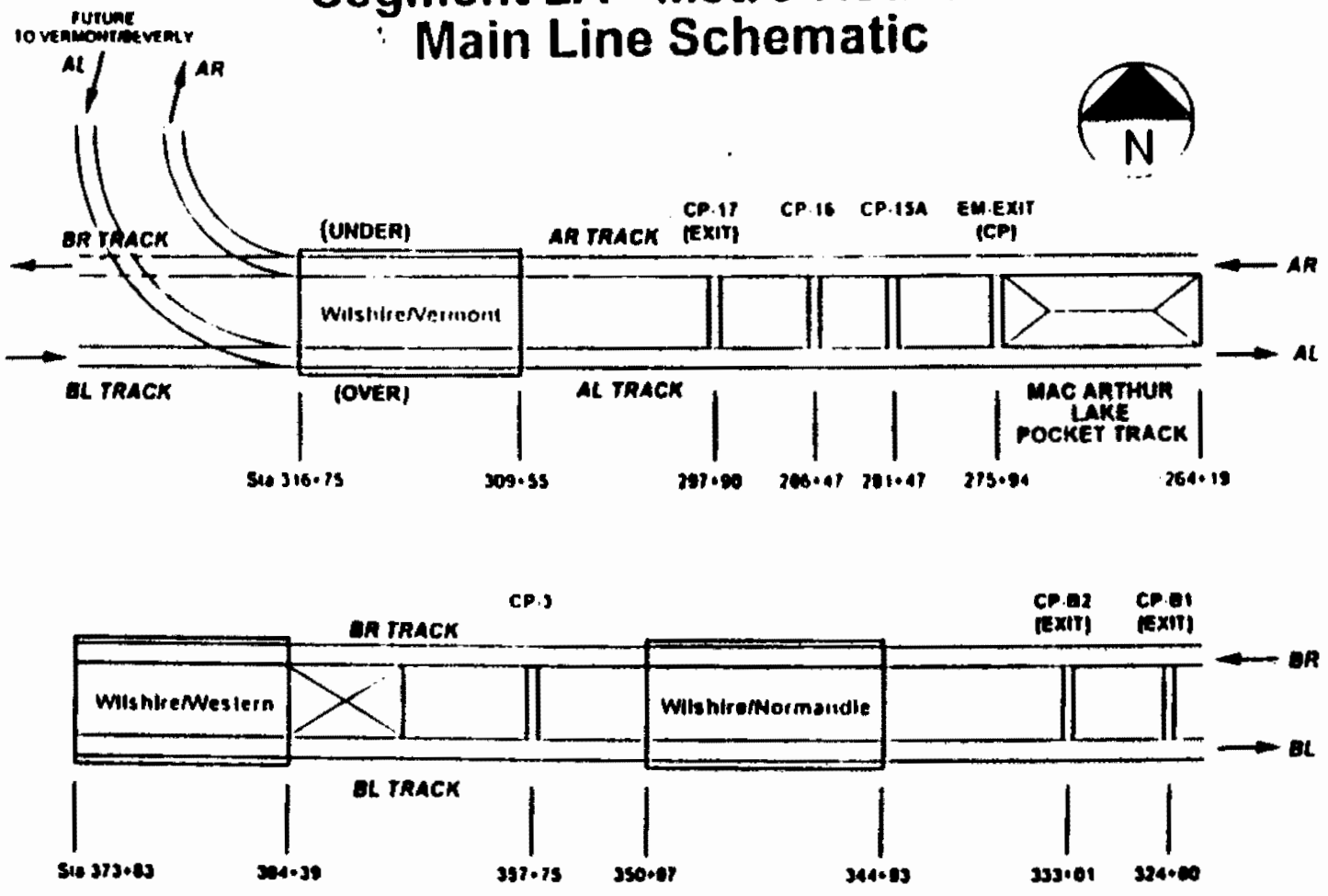


Metro Red Line

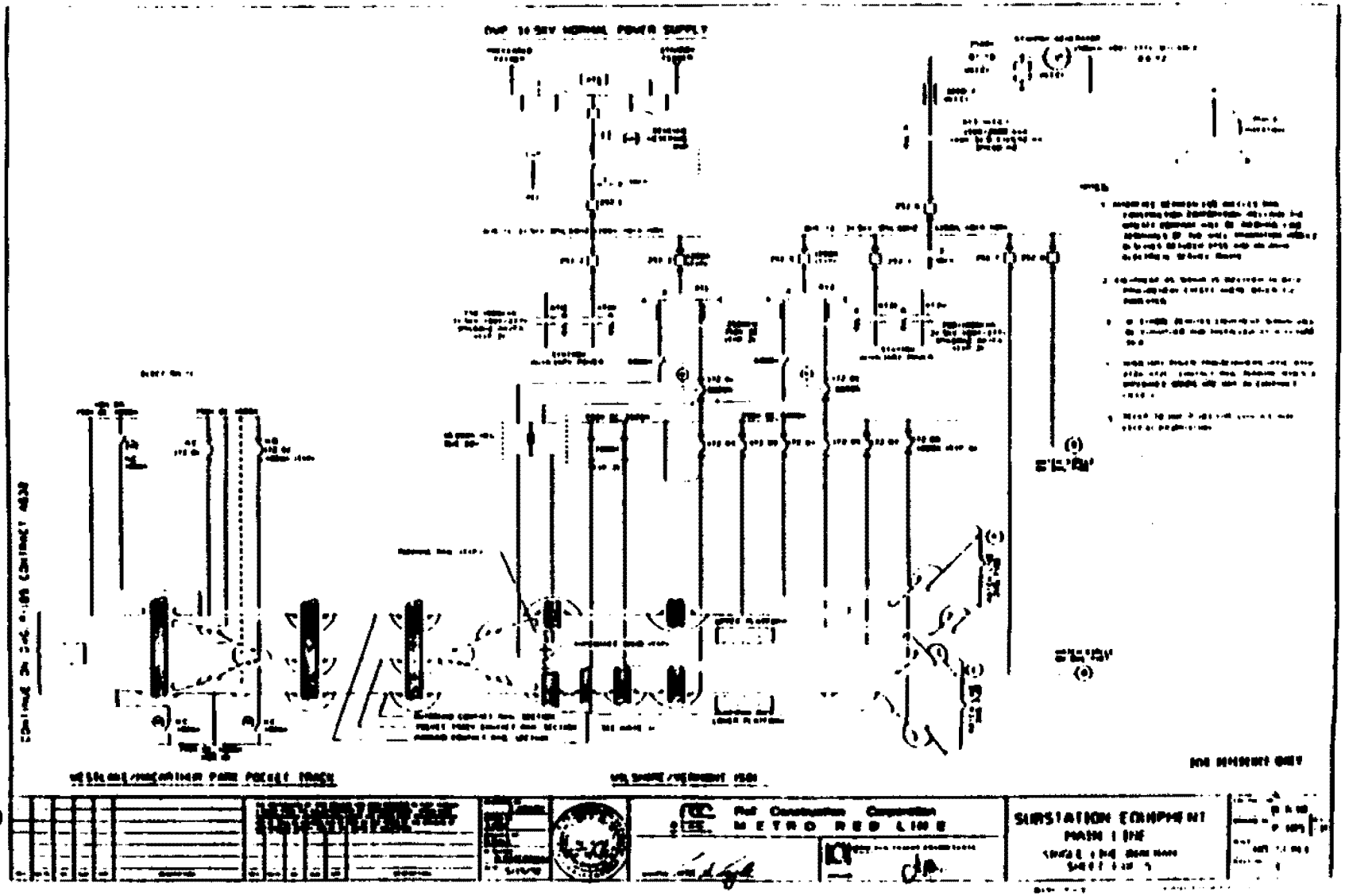
YARD TRACK DIAGRAM



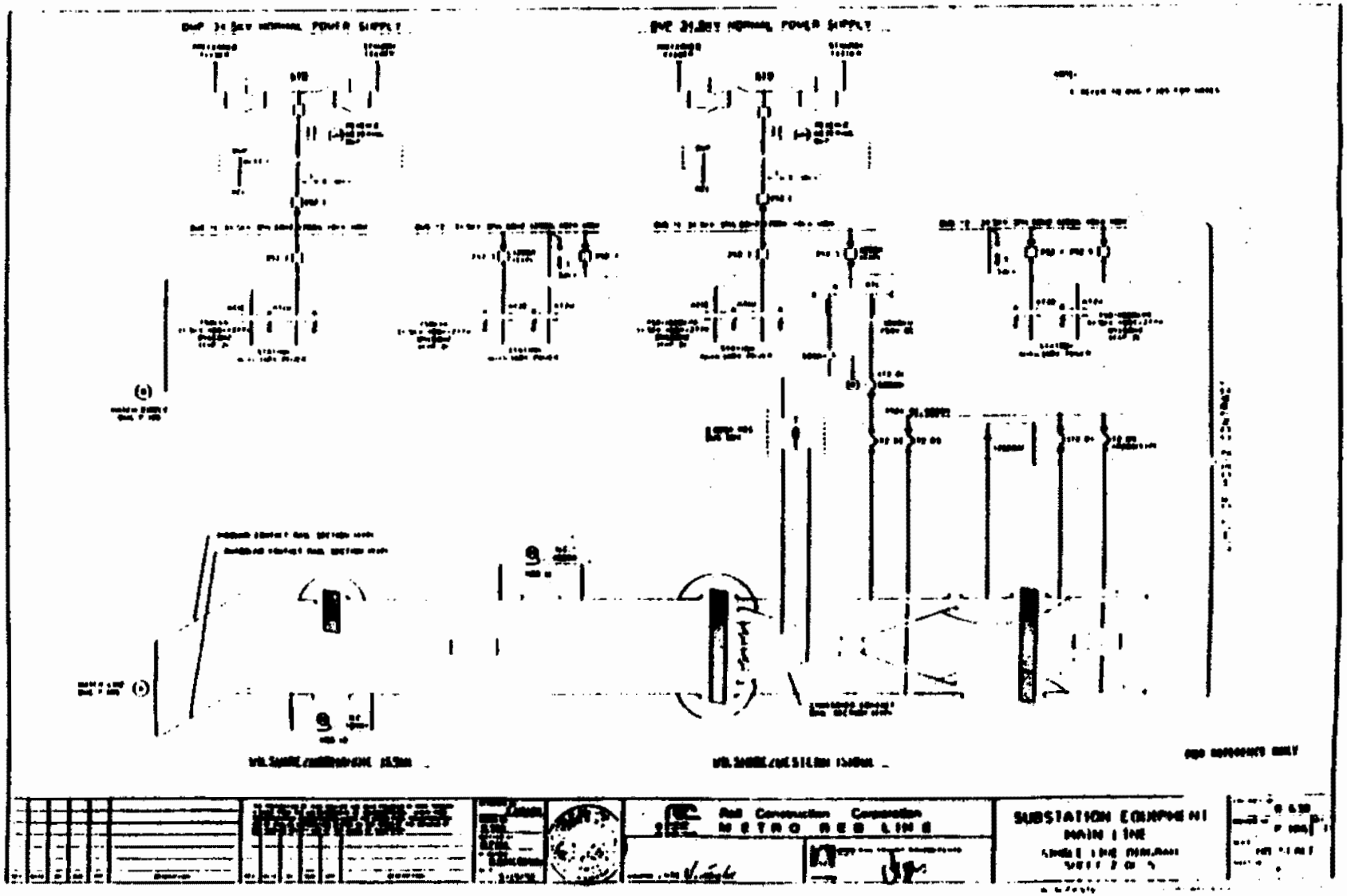
CROSSPASSAGE
Segment 2A - Metro Red Line
Main Line Schematic



POWER DISTRIBUTION SCHEMATIC



POWER DISTRIBUTION SCHEMATIC



TEST OPERATIONS PROCEDURES GOVERNING THE TESTING OF MRL SEGMENT-2A

TEST OPERATIONS PROCEDURE NO. 1

I. TITLE: **TRACK ALLOCATION NOTICE**

II. PURPOSE

Track Allocation meetings will be held Tuesday of each week and will develop a schedule in the form of a Track Allocation Notice which allows both construction/installation operations and testing activities to be coordinated and accomplished safely and efficiently. Anyone requiring track time must attend the track allocation meeting and make their work requirements known to allow for proper scheduling.

III. REQUIREMENTS

1. Red Tag Areas will be defined every Tuesday at the Track Allocation Meeting and distributed to all REs, Contractors, LACMTA and employees engaged in construction, equipment installation or testing activities on the Metro Rail System. It will be the responsibility of each of the above to assure all of their employees are aware of the weekly change affecting their staff.

2. Contractors or others desiring to perform any work or tests in the Red Tag Area must submit track occupancy and access requirements on the Allocation Request form by the prior Thursday at 3:00 P.M. and attend the weekly Track Allocation Meeting on Tuesday at 9:30 A.M., location to be determined at previous weeks meeting.

IV. PROCEDURES AND RESPONSIBILITIES

RESPONSIBILITY		TASK
Track Allocation Coordinator	1.	Define and distribute the limits of the Red Tag Area to all Contractors and RE's every Friday for the following week's work.
Fixed Facility, System RE's, Test Personnel	2.	Submit in writing occupancy and access requirements no later than Thursday 3:00 p.m. of the week prior to the Track Allocation Meeting. Requirements are to be defined by: civil Stationing Limits; Westbound Track AR/BR or Eastbound Track BL/AL; Time of day; and traction power needs for each day. An approved request form secured or obtained from the Red Tag office must be used for this purpose.

Track Allocation Coordinator	3.	Finalize the composite schedule of all track allocation requirements on Thursday using the daily approved Track Allocation Notice (one set of Notice Sheets for each day of the week).
Track Allocation Coordinator	4.	Discuss conflicting issues in track occupancy requirements with personnel having specific needs. Attempt to resolve any conflict on a mutually satisfactory basis.
Track Allocation Coordinator	5.	Resolve any remaining conflicts and achieve a consensus for each day of the following week listed on the Track Allocation Notice.
Track Allocation Coordinator	6.	Complete draft Track Allocation Notice for each day and copy for distribution by Tuesday meeting.
Track Allocation Coordinator	7.	Develop a distribution list as required and retain a file copy of each weekly approved Track Allocation Notice.
Track Allocation Coordinator	8.	Reproduce and distribute copies of the final Track Allocation Notice for the following week by no later than Wednesday noon.
Track Allocation Coordinator	9.	Prepare Red Tags for the following week based on the Track Allocation Notice.

Los Angeles County Metropolitan Transportaion Authority

Track Allocation Reques

METRO RAIL LINE

ALL TRACK REQUESTS DUE BY CLOSE OF BUSINESS TUESDAY *OFFICE FAX*

METRO RAIL TRACK BLUE LINE ☐ GREE LINE ☐ RED LINE ☐

CONTRACTOR _____ OFFICE TEL # ( ) -

CONTRACTOR _____ OFFICE TEL.# ( ) -

CONTRACTOR _____ OFFICE TEL.# ( ) -

DAY	DATE	HOURS	LOCATION		POWER DOWN		CREW SIZE
			TRACK	STATION/FACILITY	YES	NO	
SUN							
MON							
TUE							
WED							
THUR							
FRI							
SAT							

DESCRIPTION OF WORK AND EQUIPMENT USED

TEST OPERATIONS PROCEDURE NO. 2

I. TITLE: **RED TAG PROCEDURE**

II. PURPOSE

Contractors will be engaged in performing work on the right-of-way with dynamic testing taking place. It is essential that a disciplined procedure be implemented to control access to the property to protect all personnel from the hazards of moving trains and energized contact rail power.

III. REQUIREMENTS

Contractors and others requiring access to any Test Operations areas for any activity must:

1. Complete Red Line Safety Training course.

2. Receive permission at the Track Allocation Meeting to perform the activity and be included in the Track Allocation Notice.

3. A contractor/appropriate designated individual will be responsible for picking up and returning Red Tags. All Red Tags must be returned daily before power will be restored to work location foreman/appropriate designated individual in charge of work is responsible to assure all Red Tags are returned to the Test Controller.

4. The designated MTA/Contractor individual with the responsibility of energizing and de-energizing the contact rail must either have a portable radio or other means to establish communications with the Test Controller.

IV. RESPONSIBILITIES

1. The Red Tag Desk on a daily basis shall, under the control and responsibility of the MTA Rail Activation Manager shall:

   a. Issue Red Tags for approved schedules (Track Allocation Notice).

   b. Maintain a record of all Red Tags issued.

   c. Ensure that all personnel required to work in Red Tag areas understand the procedure and return all Red Tags daily at the prescribed time and location as required by the Test Controller

   d. Maintain a visual display board showing all Red Tags issued.

e. Clear Red Tag Log and display board as Red Tags are returned.

f. Maintain contact with the Rail Activation Manager as required.

2. Contractor, MTA, R.E.'s and Test Personnel:

a. Obtain Red Tags from Red Tag Desk daily.

b. Distribute Red Tags to workers involved in activity.

c. Return Red Tags to Red Tag Desk when all activity is completed, in accordance with the Test Controller instructions.

V. PROCEDURES

1. Contractors and others that have been scheduled to work in the Test Operations Area, per the Track Allocation Notice, will have the designated individual in charge of the work party procure Red Tags from the Red Tag Desk prior to access to the area. A Red Tag will be issued for each person in the work party by the individual in charge.

2. When the scheduled work has been completed each day, the individual in charge of the work party will return all Red Tags to the Red Tag Desk. After all the Red Tags distributed that day are returned and accounted for, the Test Controller will notify all concerned that train testing and/or energizing the traction power system can resume.

3. Work crews in the trackway are subject to challenge by Security/MTA Safety Personnel or designee. When challenged, they must produce the Red Tag/Train Order and their Safety and Security Badge or Pink Badge - Safe Clearance Identification (see Note below) authorizing their presence.

NOTE: Certain individuals, because of the nature of their work and their knowledge of the activities taking place, will be issued a pink badge (Safe Clearance Identification) which allows them to be in the Red Tag Area without a Red Tag. Those individuals will be identified by the Test Controller and must keep the pink Safe Clearance Identification badge in their possession and present it to authorized Safety Personnel upon request.

4. The designated individual in charge of the work party must be familiar with station locations along the line, so that he/she can safely locate and mark the limits of the work area. If the individual is not familiar with the limits, then he/she must request an escort from the Track Allocation Coordinator or designee to guide and accompany the work party to the work area and mark its limits.

5. It is mandatory that the designated individual secure Red Tags from and return those tags to the Red Tag Desk promptly when the work is completed. Failure to return a Red Tag will seriously disrupt work and test schedules. It shall be the policy of this project that an individual's failure to obtain and return a Red Tag promptly shall be cause for discipline up to an including removal from the Metro Rail System Project.

TEST OPERATIONS PROCEDURE NO. 3

I. TITLE: **TRAIN ORDERS**

II. PURPOSE

Train Orders are issued in written form by the Test Controller to protect and govern Test Operation movements of any rail vehicle entering upon the Segment-2A Mainline. All train or hi-rail equipment movements require a written Train Order. Train Orders protect rail vehicles' rights on dedicated tracks for the purpose of conducting tests or the rights of other track equipment performing functions on a specific track.

III. REQUIREMENTS

1. No rail vehicle can move on, or occupy, the Segment-2A Mainline without a written Train Order.

2. Train Orders must be issued in the proper format and numbered in consecutive order for each day of issue.

3. Train Orders must be made in duplicate and signed by the Rail Vehicle Operator and Test Controller. Repeat written instructions on train orders required by rail vehicle operator to secure both signatures.

4. One copy of the Train Order must be in the possession of the Rail Vehicle Operator and one copy must be retained by the Test Controller and secured by the test control files.

5. The Rail Vehicle Operator must read and understand the Train Order issued and remain within the specific limits of track governed by the Train Order. If the Rail Vehicle Operator does not fully understand the Train Order, he/she must contact the Test Controller for clarification.

6. Once a Train Order is in effect, it will continue in effect until fulfilled, or annulled. No train order will be issued to exceed 0600 of the following day.

IV. PROCEDURES

1. Test Controller shall remain informed of Segment-2A Mainline moves occurring during his/her tour of duty from the Track Allocation Notice and from incoming communications on mainline moves. The Test Controller will retain Train Orders for each move and sign them. Train Orders will not conflict with the Track Allocation Notice.

2. Rail Vehicle Operators will, after reporting for duty, pick up their Train Orders at the Test Control office. They must read the Train Order, sign it, and enter the readback time on the form.

3. When it is required to issue Train Orders via radio or telephone, due to the distance from Test Control, the following procedure will be followed:

a. Rail Vehicle Operator will receive the order from Test Controller via radio or telephone and write it on the approved Train Order form. If rail vehicle is involved it must be stopped prior to issue of the train order.

b. Rail Vehicle Operator will read back the Train Order satisfactorily to the Test Controller.

c. If Train Order is repeated correctly, the Test Controller will sign his copy of the train order and give the Rail Vehicle Operator the following information:

Order No.

Test Controller "L" Number

Signed by (Test Controller's Name)

At (Time)

d. Rail Vehicle Operator shall write the above information on his/her copy of the Train Order.

e. Train Order forms will be of standard format for all employees; see following for standard train order format.

SEGMENT 2-A
TRAIN ORDER

ORDER NUMBER_____ DATED_____

FROM: _____:_____HRS TO: _____:_____HRS

CONSIST ____/____ : ____/____ : ____/____ TRAIN NO._____

OPERATOR NAME:_____ CALL SIGN_____

OPERATOR NAME:_____ CALL SIGN_____

TRAIN NUMBERS:INSTRUCTION 60-69 MAINTENANCE 70-79 SPECIAL 90-99

TRAIN NO._____HAS AN: ABSOLUTE BLOCK_____PERMISSIVE BLOCK_____

BETWEEN_____AND_____ON THE AR TRACK

AND/OR

BETWEEN_____AND_____ON THE AL TRACK

UNDER THE FOLLOWING INSTRUCTIONS:_____

_____

_____

UNDER THE FOLLOWING RESTRICTIONS:_____

_____

_____

ISSUED BY:_____ DATE___/___/____ TIME____:___
(TEST CONTROLLER)

RECEIVED BY:_____ DATE___/___/____ TIME____:___
(TRAIN OPERATOR)

RECEIVED BY:_____ DATE___/___/____ TIME____:___
(TRAIN OPERATOR)

READ BACK TIME ----:----
READ BACK BY: ---------
CONTROLLER: ---------

TEST OPERATIONS PROCEDURE NO. 4

I. TITLE: **TEST BLOCK OPERATION**

II. PURPOSE

Because of the nature of the final acceptance test and/or integrated test activity while construction and installation operations may still be underway, a Test Block is to be established every time rail vehicle testing is being performed on the right-of-way, to protect the safety of the test/work crews as well as other employees.

III. REQUIREMENTS

1. Test Blocks will be Absolute Blocks or Permissive Blocks.

2. Test Block will be in accordance with the Train Order.

3. Test Block Limits will be marked by red flags or red lights even if interlocking signals are operational in the Test Block.

ABSOLUTE BLOCK

4. Test Controller will set up an Absolute Test Block. If interlocking signals are operational, both interlocking signals in approach to the Test Block will be set at "STOP" (Red) and in manual control.

5. Non-operational fixed signals within the Test Block will be bagged.

6. The Train Operator upon entering the Test Block will place a red flag/light (red light when visibility is reduced/in tunnel) to mark the beginning of the Test Block.

7. The Train Operator will then operate the train at **"Restricted Speed"** to unmark the end of the Test Block and place red flag/light (red light when visibility is reduced/in tunnel) to complete marking of the Test Block.

8. Train movements and test speed within the Test Block will be specified in the Train Order.

9. If the Test Block specified in the Train Order includes both main line tracks, the Train Operator will follow procedures specified requirements in #2 through #7 for both main line tracks.

10. Upon completion of testing, the Train Operator will notify the Test Controller and follow his/her instructions. The Test Controller will record all necessary times.

11. Before leaving the Test Block, the Train Operator will pick up all red flags/lights and notify the Test Controller when flags/lights are removed. The Test Controller will record the time.

PERMISSIVE BLOCK

When necessary, due to an emergency or equipment malfunction, the following Permissive Block procedures will be followed to send a second train into the Absolute Test/Work Block:

The Test Controller will:

a. Determine the exact location of the disabled Test Train or Rail Equipment in the Test/Work Block. Instruct the Train Operator to remain standing and "do not move" the Train or Rail Equipment. Annul the Train Order for the disabled Test Train/work equipment.

b. Issue the Rescue Train Operator a Train Order which will include the disabled Test Train/Work Equipment location.

    1) When the Rescue Train/Rail Equipment to be used is already operating under a Train Order, that Train Order must be annulled prior to the issue of a new Rescue Train Order.

c. Order a Permissive Block for the Rescue Train/Rail Equipment. The Permissive Block order will direct the Rescue Operator to move from its present location directly and progressively toward the disabled Test Train/Rail Equipment.

d. The Permissive Block order shall not be issued until both Train/Rail Equipment Operators have satisfactorily repeated their instructions to the Test Controller and have a full understanding of the required movement.

e. Control Line Verification Test.

To permit the accomplishment of the "Control Line Verification Tests," the following temporary measures shall be implemented:

1. The established test block being utilized for the ATC "Control Line Verification" will be a "Permissive Block" (see page 10 Block Permissive of the "rule and Procedures for Conducting Test Operations"). Two trains will be assigned to this test, and the Test Controller will maintain the exact location and positive control of both trains within the permissive test block during test operations.

2. Restricted Speed will be the maximum closing speed authorized by the moving Test Train when approaching the stationary Test Train may return to its starting point operating away from the stationary Test Train in accordance with posted, reverse traffic speed signage for that particular track section.

3. Reverse traffic movement will be accomplished in accordance with Rules 439 and 440 on page 40 of the "Rules and Procedures for Conducting Test Operations".

4. 'Blocking' and 'clamping' of mainline switches/interlocks in accordance with Test Operations Procedure No. 8 will be suspended during the scheduled time frame of each day's Control Line Verification Tests only. The train operator will remain responsible for observing all switch points for proper alignment and will notify the Test Controller when each movement is complete. Upon conclusion of each night's testing, the test crew will restore switch alignment to normal position, as directed by the Test Controller and reinstall all blocks and clamps.

f. Ventilation Tests

To permit the accomplishment of the "Ventilation Tests," the following temporary measures are implemented:

1. The established test block being utilized for the Ventilation Tests will be a "Permissive Block" (see page 10, Block Permissive, of the "Rule and Procedures for Conducting Test Operations"). Two trains will be assigned to this test, and the Test Controller will maintain the exact location and positive control of both trains within the permissive test block during test operations.

2. Restricted Speed will be the maximum closing speed authorized by the moving Test Train when approaching the stationary Test Train utilized during testing operations. When Ventilation Testing is complete, the Test Train involved will follow Test Controllers instructions for movement back to the Yard Facility.

3. There are several locations for the Ventilation Test. The locations will be addressed and executed by the Test Controller as distinctive, individual events:

4. The Test Controller may adjust the stationing of the stationary train to best accommodate the Ventilation Test, but will, in all cases, cause only a single train to move within the Permissive Test Block area at any given time.

TEST OPERATIONS PROCEDURE NO. 5

I. TITLE: **PRE-DEPARTURE INSPECTION**

II. PURPOSE

During the Test Operations period, rail vehicles are subject to modifications, retrofits or other work involving many Contractors and Subcontractors. The number and variety of people working on the rail vehicles increases the possibility of overlooking potential hazards to the safety of the Test Crew or to the rail vehicles. The following procedure for a PRE-DEPARTURE inspection must be followed:

III. REQUIREMENTS

Train operators will be responsible for performing a walk-around inspection before moving a rail vehicle stored on the Segment 2A main track.

IV. PROCEDURES

1. Perform a walk-around inspection. Check the following:

   a. Insure the vehicle is clear of all personnel in or around the rail vehicle.

   b. There are no obstructions or hanging equipment.

   c. All exterior safety appliances are intact.

   d. Couplers and electrical heads are not damaged.

   e. All electrical equipment boxes are closed and secured.

   f. All dents/scratches on the exterior are reported to the test controller.

   g. Exterior headlights and taillights are on.

   h. Inquire from Test Engineer (if one is available) about any connections or apparatus which are not a part of the car. If no Test Engineer is available, notify a Test Controller and follow his/her instructions.

   i. Check for wheel chocks.

2. Inside the rail vehicle cab, perform the following inspections:

   a. Check all control switches that are normally sealed to make sure seals are intact. Report broken seals to Test Controller and follow his/her instructions. Check for proper clearance forms.

   b. Ensure that all doors operate properly.

   c. Ensure that brakes apply and release.

   d. Ensure the horns, cab lights, and windshield wipers are operating properly.

   e. Perform a radio test by contacting the Test Controller.

   f. Make a running brake test before departure.

   g. Report any problems to the Test Controller.

   h. Ensure safety equipment is on board and properly stored (fire extinguisher, flags, etc.).

   i. Check general condition of seats, windows, lights, and interior. Report damage or problems to the Test Controller.

   j. If cab signals are operational and being used, a PRE-DEPARTURE cab signal test must be conducted.

TEST OPERATIONS PROCEDURE NO. 6

I. TITLE: BLUE FLAG/BLUE LIGHT PROCEDURE

II. PURPOSE

To provide protection for employees working on, under, or about rail vehicles in Yard storage tracks, Segment 1 mainline or Segment 2A mainline.

III. REQUIREMENTS

1. Employees performing work between, on, under or about rail vehicles in the yard or Mainline tracks must provide themselves blue flag/blue light protection according to this procedure and as prescribed by the rules.

2. A Train Operator observing a blue flag/blue light on a track must not operate his/her train over any track switch leading to the work area without first securing permission from the Test Controller (Yard Controller if in yard). The protected rail vehicle(s) must not be coupled to or moved. No rail equipment will be placed where they obstruct the view of the blue flag/light protection without first securing permission from the employee in charge.

IV. PROCEDURES

Employees intending to perform work between, on, under or about rail vehicles in the Yard storage tracks or Segment 1 and Segment 2 Mainline, tracks must follow this procedure:

1. The employer in charge must contact Test Controller or Yard Controller and inform him/her of the work to be performed, including details such as: name; rail vehicle number(s); track number/location; and nature of the work.

2. If Test Controller or Yard Controller approves, the request authorization must be indicated in his/her records. Inform the employee that he/she is to perform this work under blue flag/blue light protection rule.

3. The employee in charge of the work must place blue flags where plainly visible (if during daylight hours) or blue lights (during night) at a distance of 5 feet in front and 5 feet behind where the rail vehicle(s) are located. The blue flag/lights must be placed on the running rail further away from the contact rail.

4. Each employee working on the rail vehicle(s) will then place red DO NOT OPERATE tags with his/her name on the manual controller handle in each cab of the train.

5. Only the employee in charge of the work or the authorized designee, will notify the Test Controller or Yard Controller that the proper flags/lights and tags are in place. The Test Controller or Yard Controller will then authorize the work to begin.

6. Only the employee in charge or the authorized designee(if more than one shift is involved), is authorized to remove the blue flags/lights after ascertaining that all the red **DO NOT OPERATE** tags have been removed from the manual controller handles and all employees are clear.

7. Notify the Test Controller or Yard Controller when work is finished and all tags, flags or lights are removed.

V. TEST BLOCK PROTECTION

Blue Flag/Blue Light protection, when within the limits of a Segment-2A Test Block, is not required for personnel working about or under a vehicle on the Mainline while testing is being conducted. The following procedure, however, will be adhered to when personnel are to work around or under a train when Test Block Protection is available:

1. Employee performing work will inform Train Operator of work he/she is about to perform.

2. Train Operator will set the mode control switch to the "off" position on the console prior to an individual going outside to work about or under the vehicle.

3. Only the same employee or the authorized designee, initially requesting to perform the work will notify the Train Operator that work is complete and it is safe to continue testing.

TEST OPERATIONS PROCEDURE NO. 7

I. TITLE: **TRACTION POWER ON/OFF PROCEDURE**

II. PURPOSE

The purpose of this procedure is to safely control the Segment-2A Traction Power Supply System (TPSS) operations prior to Central Control having the capability of monitoring and the equipment for controlling the substations.

III. REQUIREMENTS

1. The Segment-2A traction power system will be de-energized when necessary to perform any construction or maintenance activity where the potential exists for personnel to come in contact electrical power.

2. An employee must request power removal and re-energization through the Test Controller.

3. Open breakers at the substation must be tagged and locked or blocked out by MTA Traction Power person.

4. Test Controller will maintain written records of power outages and requests as well as a board indicating which sections are energized, including the status of all substation breakers for the Test Operations Area being controlled.

IV. PROCEDURES

1. The request for de-energizing traction power should be a scheduled activity and part of the weekly Track Allocation Meeting, as per Test Operations Procedure No. 1. Unscheduled requests to de-energize traction power in a certain section will be made through the Test Controller.

2. It will be the Test Controller's decision to grant the request for power removal, if it is not scheduled as part of the weekly Track Allocation Notice. The Test Controller shall contact the proper personnel to operate the required substation equipment should the request be granted. (NOTE: In an emergency, the request for removal of power will be granted immediately.)

3. The Reg Tag Procedure, as described in the Test Operations Procedure No. 2, will be in effect and Red Tags will be prepared and issued to the designated individual in charge of the work party, except in an emergency.

4. Test Controller will initiate the outage by contacting the Traction Power personnel and requesting that the particular electrical breakers feeding this section be opened, locked out, tagged DO NOT OPERATE, and grounded. Test Controller will record the date and time the power removal was completed and the name of the of the Traction Power personnel performing the work. Test Controller will also make the necessary changes to his/her power status board.

5. Once the de-energization is completed through the Test Controller, the individual that requested the outage witness the testing of the contact rail to confirm that the contact rail is in fact de-energized. The traction power personnel will apply a ground cable between contact rail and running rail at each end of the de-energized section. The individual can then receive his Red Tags and proceed with his/her work.

6. Upon completing the work, the designated individual will verify that all personnel and equipment are clear of the track. The individual will then return his/her Red Tags, as per Test Operations Procedure No. 2.

7. When Test Coordinator is in possession of all Red Tags, he/she will physically turn the tags over to the Test Controller and the Test Controller will make a personnel announcement to contact Train Operators on every channel that power is to be restored on a particular track section. Test Controller will then give clearance to the Traction Power personnel to restore power. At the time of restoration, the names of the designated individual and Power Supervisor name will be recorded by the Test Controller. The Test Controller will insert the necessary information on the power request form.

TEST OPERATIONS PROCEDURE NO. 8

I. TITLE: **HAND-CRANKING AND HAND-THROWING OF TRACK SWITCHES**

II. PURPOSE

During Segment-2A Test Operations, it may become necessary to operate trains through track switches that are not electrically operational or before switch machines have been installed. It is essential that special attention is given the following procedures in order to prevent derailments and damage to track switches.

III. REQUIREMENTS

1. Train Operators are responsible for checking the switch point alignment for proper rail vehicle movement.

2. When Train Operators or designated personnel are required to operate switches by hand, they must do so following the procedures outlined in section IV below.

IV. PROCEDURES

1. Track switch points will be considered aligned when the following is performed:

   a. Switch points are positioned either "normal" or "reverse" as instructed by the Test Controller.

   b. Switch points must be positioned to fit properly against both the stock and switch point rail to allow the wheels to pass over the switch points.

   c. Notify Test Controller if switch points are found to stand open more than 3/16".

2. When hand cranking or hand throwing Segment-2A switches, the following will be performed:

   a. The open switch point must be securely **BLOCKED** with wooden block(s), while the rail clamp is being attached or removed.

   b. The closed switch point must be clamped to the stock rail with a clamp wheel nut tightened by a wrench. Clamp must be placed under both the stock and switch point rails with the wheel nut on the field side of the stock rail.

c. If the switch points cannot be closed to 3/16" or less but can be done by the use of a clamp, it need not be removed from service but must be reported to the Test Controller who will inform Rail Facilities Maintenance personnel.

d. If the switch cannot be closed to 3/16" or less, it must be reported to Test Controller to be taken OUT OF SERVICE and protected as prescribed by the rules.

TEST OPERATIONS PROCEDURE NO. 9

I. TITLE: **PERSONNEL IDENTIFICATION BADGE**

II. PURPOSE

Because of the numerous safety hazards involved in the Segment-2A Test Operations process and in order for Security personnel to be able to better control the access to Rail System, a Personnel Identification Badge will be issued to all MTA, Consultant, Contractor and Subcontractor personnel.

III. REQUIREMENTS

Personnel working or visiting the Segment-2A Rail System must wear a Personnel Identification Badge.

IV. PROCEDURES

1. Resident Engineers will obtain from their respective Contractors a list of all the employees working on the Segment-2A Metro Rail System. The list will include the person's name, occupancy and occupation. Submit the list to the Rail Activation Manager

2. MTA and Consultants will also submit a list to the Rail Activation Manager including the names and occupation of those employees that are likely to visit the Rail System facilities frequently in the performance of their duties.

3. The Rail Activation Manager will supply Personnel Identification Badges for all required employees. The badges will be color coded as follows:

BADGE COLOR	COMPANY/INDIVIDUAL AFFILIATION
Blue	MTA Construction, Consultants
Orange	MTA Operations
Green	Contractors
Pink	Any individual designated as "Safe Clearance"
Yellow	Visitors

4. New employees starting subsequent to the initial issue of badges must obtain their badges, after satisfactorily completing a safety class conducted by the Rail Activation Safety Instructor.

TEST OPERATIONS PROCEDURE NO. 10

I. TITLE: **RAIL VEHICLE OPERATION IN YARD**

II. PURPOSE

To provide requirements for rail vehicle movements by Train Operators, operating within the Segment-2A Yard limits.

III. REQUIREMENTS

1. All Segment-2A Yard movements will be governed by the Yard Controller.

2. All Segment-2A Yard movements will be performed in the Restricted Manual Mode (RMO) of operation.

IV. PROCEDURES

1. Train Operators will receive instructions from the Yard Controller as to the rail vehicle numbers and the train movements that will be performed within the Segment 2-A Yard limits.

2. No Segment-2A Yard moves will be performed without the knowledge and authorization of the Yard Controller.

3. All Segment-2A Yard moves will be performed exactly as instructed by the Yard Controller.

4. When operating in the Segment-2A Yard, Train Operators must be particularly alert to the following conditions:

   - Broken or damaged contact rail coverboard.
   - Obstacles or tripping hazards in the ballast and along the track.
   - Persons on foot or in maintenance vehicles.
   - Tracks/vehicles protected with blue flags/blue lights.
   - Persons or vehicles entering or leaving the Yard.
   - Position of all switch points and aspects of all signals.

5. Initiate the proper horn sound prior to initiating train and rail vehicle movements in the Yard.

6. Never foul switch points. Stop behind the track yellow foul marker so as not to block the vision of the switch points by the front overhang of the vehicle and fouling the adjacent track.

7. Be aware of other train and rail vehicle movements in the area and do not move beyond the signal if another train is moving on an adjacent track.

8. When storing cars, assure that rail vehicles are secured with parking brakes and/or chocks, if necessary, and that front and rear of cars do not foul adjacent tracks by storing beyond the track yellow foul marker.

9. When leaving cars be sure that:

- Windows are closed.
- Doors are locked.
- Master key and mode control switch is in the "off" position and key is removed, as required.

10. MANUAL UNCOUPLING

The employee designated to manually uncouple will assure the vehicle operator has received and acknowledged their "**STOP**" signal. When all vehicles are stopped, proceed with the manual uncoupling operation. After manual uncoupling is initiated, signal vehicle operator for required vehicle movement.

TEST OPERATIONS PROCEDURE NO. 11

1. TITLE: **RESERVED FOR FUTURE USE**

TEST OPERATIONS PROCEDURE NO. 12

I. TITLE: **CLEARANCE CARD**

II. PURPOSE

The Clearance Card, when properly completed authorizes a Train Operator to operate the train or a rail vehicle with sealed switches in the bypass mode or to pass Segment-2A interlocking signal displaying a "stop" indication.

III. REQUIREMENTS

1. A train must not be operated on the Segment-2A Mainline with any sealed switches bypassed unless a written Clearance Card is issued to the Train Operator permitting him/her to do so.

2. A Train Operator must not pass a Segment-2A interlocking signal not illuminated or displaying a "stop" indication unless a Clearance Card is issued to him/her by the Test Controller.

3. Train Operators must carry blank Clearance Cards with them at all times while on duty. Clearance Cards will also be kept in all vehicle cabs.

IV. PROCEDURES

1. Clearance Cards will be issued by the Segment-2A Test Controller when, either because of a malfunction or because of the type of test being performed, it becomes necessary to:

   a) Pass a Segment-2A Red Signal displaying a Stop indication.
   b) Bypass the ATP.
   c) Bypass Door Closed.
   d) Bypass Movement Detection.
   e) Bypass Zero Speed.
   f) Bypass "Audible Alert."
   g) Bypass "Regenerative Brake" (Electric Brake).
   h) Bypass Service Friction Brake.

2. Train Operators will request Clearance Cards from the Test Controller, when necessary, during the performance of their duties.

3. When a Clearance Card is issued (either in person or over the radio/telephone), the Train Operator must satisfactorily repeat the necessary clearance information to the Test Controller. Only when instructions are repeated correctly will the Test Controller provide the Train Operator with his/her MTA Radio Call Sign and the time at which the information was repeated correctly. The "repeat time" represents the authorization time to proceed.

Both the Test Controller and Train Operator will enter the "repeat time" on their respective copies of the Clearance Card. If no "repeat time" is given, the clearance card is void.

4. Trains observed operating with a lit exterior bypass indication are subject to be inspected by Safety or Supervisory personnel and will be reported to the Test Controller for verification and necessary action. The Train Operator will be required to produce his/her copy of the Clearance Card to the appropriate MTA Supervisor.

5. All properly completed Clearance Cards must be returned by the Train Operator to the Test Controller at the end of his/her workday.

LACMTA CLEARANCE CARD

NO.____

DATE: __/__/__ TRAIN NO. ____

OPERATOR:

_____

YOU ARE AUTHORIZED TO:

[ ] PASS INTERLOCKING SIGNAL

_____

[ ] USE ATP/EMO BYPASS SWITCH

[ ] ENTER BLOCK OCCUPIED BY HI-RAILER

[ ] OPERATE WITH _____
SEALED SWITCH BYPASSED

[ ] OPERATE WITH _____
SEALED SWITCH BYPASSED

AND PROCEED TO: _____

READ BACK TIME: __:__

CONTROLLER: _____

TEST OPERATIONS PROCEDURE NO. 13

I. TITLE: **POWER PERMITS**

II. PURPOSE

To establish requirements, responsibility and procedures for employees working on **ENERGIZED CIRCUITS**, apparatus or control devices without jeopardizing personal safety or Metro Rail Property.

III. REQUIREMENTS

The Power Permit Record Form shall be completed prior to authorizing work on any energized circuit, apparatus or control device.

Transfers of power permits shall be understood by all employees involved and properly recorded on the Power Permit Transfer Form.

IV. PROCEDURE

PREPARATION:

1. Employee in charge will request permission from Test Controller to work on energized equipment stating the type of work that is to be accomplished.

2. Test Controller will issue a power permit number, date, time requested and time received.

3. Employee requesting permit will define work limits and controls to be cut-out or affected.

4. The Test Controller will read back to employee the above information and if correct the Test Controller will log the time and Test Controllers name.

TRANSFER

To be used if responsibility for work is passed to another employee.

1. Insert new employee's name, time of transfer and the name of the Test Controller who authorized the transfer. See reverse side of Power Permit for additional transfer requiring the names of the employee in charge of the work and the Controller authorizing the transfer.

COMPLETION OF WORK

1. Employee will insert Test Controllers name and what equipment has been returned or not returned into service including time and date.

2. Controller will read back information to employee and if correct will log time and the name of employee in charge.

SIDE 1 **METRO RAIL SYSTEM POWER PERMIT RECORD**

Has the Test Controller been advised of this request and authorized working on the energized circuit or apparatus _____
Yes No

Work Authorized on circuits/apparatus _____

Remarks _____

Permit No. _____ _____ _____ _____
(Date) (Time Requested) (Time Received)

Issued to _____ (Employee in charge of repairs/work) has permission to work on _____
(List Circuit Apparatus)

Permit repeated and received correct at _____ _____
(Time) (Test Controller's Name)

Permit transferred to _____ _____ _____
(Name) (Time) (Date)

Reason for Transfer _____

Permit transferred at _____ _____
Time (Test Controllers Name)

Above listed circuit/apparatus is: O.K. for Service _____ Not O.K. for Service _____

Date: _____ Time: _____

Permit repeated correctly and released at _____ _____
(Time) (Employee in Charge of Work)

NOTE: See other side for additional transfer space is required.

SIDE 2

POWER PERMIT TRANSFER RECORD

Permit No. _____ Date: _____

Circuit or Apparatus _____

Permit explained and understood by:		Permit explained and understood by:	
1.	16.	1.	16.
2.	17.	2.	17.
3.	18.	3.	18.
4.	19.	4.	19.
5.	20.	5.	20.
6.	21.	6.	21.
7.	22.	7.	22.
8.	23.	8.	23.
9.	24.	9.	24.
10.	25.	10.	25.
11.	26.	11.	26.
12.	27.	12.	27.
13.	28.	13.	28.
14	29.	14.	29.
15.	30.	15.	30.

TEST OPERATIONS PROCEDURE NO. 14

I. TITLE: **FLAGGING PROCEDURES**

II. PURPOSE

To establish procedures, responsibility and proper flagging protection whenever work permits, wayside restrictions or slow zones are in effect on the Segment 2-A maintrack.

III. REQUIREMENTS

Flagging protection shall be required:

1. Whenever employees or contractors are working within ten feet of track centerline.

2. Whenever any condition exists which restricts train movement.

3. Whenever work permits, wayside restrictions, or slow zones are in effect on the mainline right-of-way.

4. Work shall not commence until all flags and warning appliances are in proper location.

5. The Supervisor or work crew leader shall notify the Test Controller when flagging protection is established.

6. Flaggers assigned to flagging duties shall be the only individuals authorized to give a proceed signal to a Train Operator.

7. When curves or grades obstruct the view of the flagger and the work party, another individual shall be positioned between the flagger and work party to relay when the work area is clear for movement through the work zone.

IV. PROCEDURES

1. The Supervisor or work crew leader is responsible for the proper placement of flagging protective devices, and providing proper equipment to the flagger. (See V. Number 3)

2. Flags of prescribed color and type shall be used between sunrise and sunset above ground.

3. Lighted lamps of prescribed color and type will be used underground or above ground when vision is obscured by darkness, fog, or environment.

4. Flagging protection shall be implemented by installing the proper flagging appliances at the prescribed distances required in accordance with Diagrams A, B, C, and D in the Rules and Procedures for conducting Test Operations.

5. Lamps and flags shall be placed adjacent to the track structure (left side Running Rail if possible) but always on the side opposite the contact rail, clearly visible to the Train Operator.

6. Test Controller shall use the first train through the area to inspect the placement of the flags. If flags are not properly located, the train operator will notify the Test Controller and appropriate action will be taken.

7 Upon completion of work, the Supervisor or Work Crew Leader shall inspect the entire work area and inform the Test Controller of track and area condition for train movement.

8. If condition restricts train movement, flagging protective devices shall remain in place, and no rail vehicle movement will be allowed through the restricted area.

9. If work is completed and no train movement restrictions are present, the Supervisor or Work Crew Leader shall remove the flagging protective devices and inform the Test Controller.

V. RESPONSIBILITIES

"FLAGGER"

1. Employees or person assigned as Flagger must be properly trained and in possession of a valid certification.

2. Employees or persons assigned as "Flagger" shall not be assigned to perform any other duties.

3. Flaggers shall wear the proper safety equipment - reflective orange vest, and be in possession of a red hand flag, white light, and a portable air horn.

4. "Flaggers" shall be positioned 200 feet in approach to the protected area.

5. When a train approaches, the Flagger shall display a red flag indicating work STOP at the inner yellow (200 ft in advance of the protected area.

6. When the work crew and equipment is clear of tracks, the Flagger shall remove the red flag and give a proceed signal with the white flag or light to the Train Operator.

7. When the train has passed, the red flag shall be readied for the next train.

TRAIN OPERATOR

- Train Operators must be familiar with and obey flagging rules and procedures.

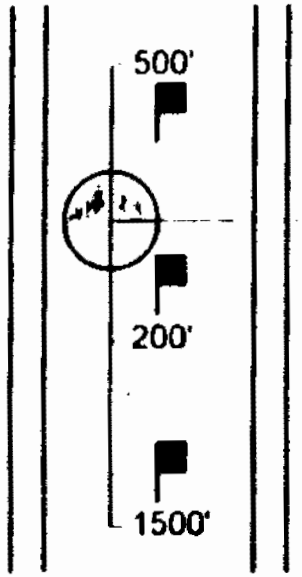
- When flags or lamps are in conflict with other wayside or cab signals, the most restrictive shall be followed.

- Reduce speed at outer yellow flag to enable a complete and comfortable "STOP" at the inner yellow flag. If no Flagger or speed flag is present, after stop, notify Test Controller and follow his/her instructions. If unable to contact Test Controller proceed at restricted speed until reaching the green resume flag.

- If speed sign is present, proceed at indicated speed until reaching the green resume flag.

- When "Flagger" is present, follow appropriate hand signals from Flagger only.

FIGURE A
FLAG AND LANTERN LAYOUTS
WORK ZONE AFFECTING ONE TRACK ONLY



GREEN FLAG OR LANTERN - 500 FEET FROM WORK ZONE

RESUME AUTHORIZED SPEED AT THE GREEN FLAG OR LANTERN

WORK ZONE

INNER YELLOW FLAG OR LANTERN AND A FLAGPERSON - 200 FEET FROM WORK ZONE

STOP AND PROCEED ON PROPER HAND SIGNAL FROM FLAGPERSON

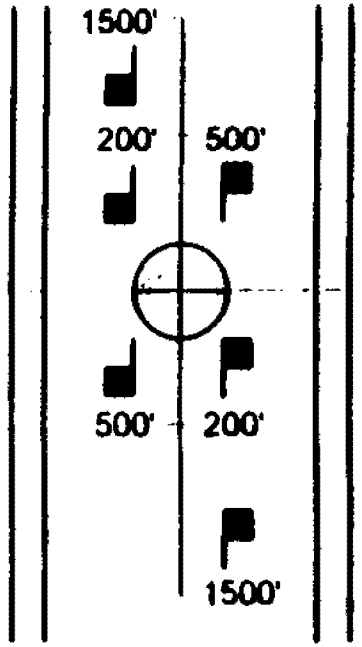
OUTER YELLOW FLAG OR LANTERN - 1300 FEET FROM INNER FLAG

APPROACH SIGN-PROCEED AT RESTRICTED SPEED PREPARED TO STOP AT THE NEXT SIGNAL OR FLAGPERSON

NOTE: SHOULD A PASSENGER STATION BE LOCATED WITHIN THE LIMITS OF THE PROTECTED (FLAGGED) ZONE, AN ADDITIONAL YELLOW FLAG SHALL BE PLACED AT THE DEPARTING END OF THE STATION PLATFORM.

FIGURE B

FLAG AND LANTERN LAYOUTS
WORK ZONE AFFECTING BOTH TRACKS



GREEN FLAG OR LANTERN - 500 FEET FROM WORK ZONE

RESUME AUTHORIZED SPEED AT THE GREEN FLAG OR LANTERN

WORK ZONE

INNER YELLOW FLAG OR LANTERN AND A FLAGPERSON - 200 FEET FROM WORK ZONE

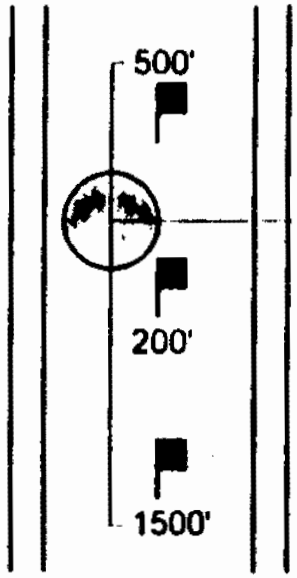
STOP AND PROCEED ON PROPER HAND SIGNAL FROM FLAGPERSON

OUTER YELLOW FLAG OR LANTERN - 1300 FEET FROM INNER FLAG

APPROACH SIGN-PROCEED AT RESTRICTED SPEED PREPARED TO STOP AT THE NEXT SIGNAL OR FLAGPERSON

NOTE SHOULD A PASSENGER STATION BE LOCATED WITHIN THE LIMITS OF THE PROTECTED (FLAGGED) ZONE, AN ADDITIONAL YELLOW FLAG SHALL BE PLACED AT THE DEPARTING END OF THE STATION PLATFORM

FIGURE C
FLAG AND LANTERN LAYOUTS
SLOW ZONE



GREEN FLAG OR LANTERN - 500 FEET FROM WORK ZONE

RESUME AUTHORIZED SPEED AT THE GREEN FLAG OR LANTERN

SLOW ZONE

INNER SPEED SIGN OR FLAG - 200 FEET FROM SLOW ZONE

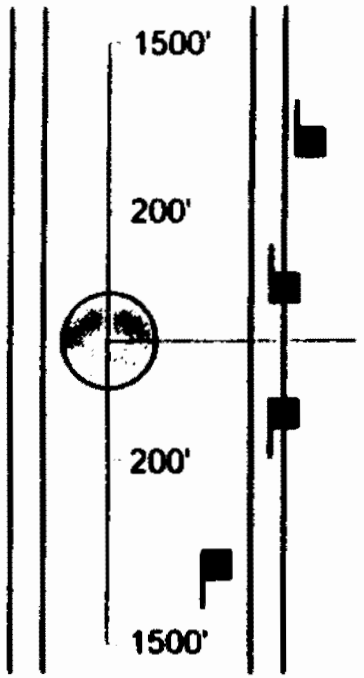
TEMPORARY SPEED SIGN - PROCEED AT POSTED SPEED LIMIT OR AS PER THE TEST CONTROLLERS ORDERS

OUTER YELLOW FLAG OR LANTERN - 1300 FEET FROM INNER FLAG

APPROACH SIGN-PROCEED AT RESTRICTED SPEED PREPARED TO STOP AT THE NEXT SIGNAL OR FLAGPERSON

NOTE: SHOULD A PASSENGER STATION BE LOCATED WITHIN THE LIMITS OF THE PROTECTED (FLAGGED) ZONE, AN ADDITIONAL YELLOW FLAG SHALL BE PLACED AT THE DEPARTING END OF THE STATION PLATFORM.

FIGURE D
FLAG AND LANTERN LAYOUTS
IMPASSABLE WORK ZONE



OUTER YELLOW FLAG OR LANTERN - 1300 FEET FROM INNER RED LANTERNS

INNER DOUBLE RED LANTERNS BETWEEN THE RAILS - 200 FEET FROM THE IMPASSABLE TRACK ZONE

STOP AUTHORIZED VEHICLES MAY PROCEED INTO THE WORK ZONE ON PROPER HAND SIGNAL FROM THE FLAGPERSON

IMPASSABLE TRACK ZONE

INNER DOUBLE RED LANTERNS BETWEEN THE RAILS - 200 FEET FROM IMPASSABLE TRACK ZONE

OUTER YELLOW FLAG OR LANTERN - 1300 FEET FROM INNER RED LANTERNS

APPROACH SIGN-PROCEED AT RESTRICTED SPEED PREPARED TO STOP AT THE NEXT SIGNAL OR FLAGPERSON

NOTE: SHOULD A PASSENGER STATION BE LOCATED WITHIN THE LIMITS OF THE PROTECTED (FLAGGED) ZONE, AN ADDITIONAL YELLOW FLAG SHALL BE PLACED AT THE DEPARTING END OF THE STATION PLATFORM

TEST OPERATIONS PROCEDURE NO. 15

I. TITLE: **TRAIN IDENTIFICATION CONTROL UNIT**

II. PURPOSE

The purpose of this procedure is to provide a guideline for the use of the T.I.C.U. Equipment.

III. REQUIREMENTS

Train Operator will be required to use the T.I.C.U. under the following circumstances.

1. Prior to movement from Segment-1 Maintrack to Segment 2-A Maintrack.

2. At each Segment-2A Terminal Station.

3. Prior to movement from Segment-2A Maintrack to enter Segment-1 Maintrack.

IV. PROCEDURES

A. PRE-OPERATIVE CHECK BEFORE ENTERING SEGMENT-2A MAINTRACK

Before entering the Segment-2A maintrack, Train Operators must complete three pre-set preoperative checks using the Train Identification and Control Unit (TICU) in the operating cab. After completing the preoperative checks, the Train Operator will move the train to the Segment-2A maintrack from the Segment-1 Maintrack under the direction of the Test controller.

The TICU will function when the cab is keyed up. When using the TICU, note that:

a. Prompt messages will be displayed on the TICU's scratch pad screen.

b. When the prompt is answered correctly, the TICU will go to the next prompt until all the required preoperative checks have been completed.

1. Entering Identification Data

The TICU will prompt the Train Operator to enter the following identification data.

- Badge number
- Train Run number
- Work Run number
- Destination Code
- Train Length

When these prompts appear on the scratch pad screen:

- Use the keypad to enter the appropriate data.
- Check the scratch pad screen to verify correct entry.
- Depress the ENT (Enter) key to record data in TICU.
- Depress the (TBD) key to erase an incorrect entry on the scratch pad.
- If an error message appears, wait for the screen to clear, then enter the correct data.

2. Verifying Status of Train Equipment Status

The TICU will display prompts to verify the status of the train equipment, as follows:

- Car (vehicle) number
- Status of sealed switches
- Status of auxiliary annunciator panel
- Status of trainline indicators

When each of these prompts appear on the scratch pad screens:

- Visually check the status of the equipment identified in the prompt.
- Depress ENT (Enter) key after each prompt to verify satisfactory status.
- Report any problem with equipment status to the Test Controller.

3. Checking Emergency Brake

The TICU will display a prompt to check the emergency brake. When this prompt appears on the scratch pad screen:

- Depress the red mushroom-shaped pushbutton located below the air pressure gauge.

- Verify that the emergency brake message on the scratch pad has erased.

- Repeat all preoperative checks if emergency brake message does not erase. If emergency brake message does not erase after the checks are repeated, notify the Test Controller.

To reset the emergency brake after the emergency brake message has erased from the scratch pad:

- Pull up on the red mushroom-shaped pushbutton.

- With Control Handle in the FULL SERVICE BRAKE position, depress the emergency stop RESET pushbutton to re-energize trainline braking functions. After completing the brake check, notify the Test Controller that the train is ready to move and await instructions.

B. AT EACH SEGMENT-2A TERMINAL STATION

1. Entering Identification Data

The TICU will prompt the Train Operator to enter the following identification data.

- Badge number
- Train Run number
- Work Run number
- Destination Code
- Train Length

When these prompts appear on the scratch pad screen:

- Use the keypad to enter the appropriate data.

- Check the scratch pad screen to verify correct entry.

- Depress the ENT (Enter) key to record data in TICU.

- Depress the (TBD) key to erase an incorrect entry on the scratch pad.

- If an error message appears, wait for the screen to clear, then enter the correct data.

TEST OPERATIONS PROCEDURE NO. 16

I. TITLE: **WORK PERMIT PROCEDURE**

II. PURPOSE

To ensure that all work on or near the Segment-2A right of way is properly coordinated and protected. It is essential that a disciplined procedure be implemented to control access to the property to protect all personnel from the hazards of moving trains and energized traction power. Work Permits will be issued when power removal is not required for the completion of work.

III. REQUIREMENTS

Employees or contractors requiring access to any Test Operations area, other than RED TAG AREAS, for any activity shall:

1. Attend the Track Allocation meeting during the week prior to scheduling work.

2. Receive a work permit from the Test Controller, to be scheduled at least 48 hours in advance, except in emergency.

3. Designate an employee to be responsible for receiving the work permit. The employee in charge is responsible for notifying the Test Controller when all members of the work party have departed the Right-Of-Way.

4. The individual in charge must have a portable radio and establish communications with the Test Controller.

5. Work permit limits and conditions must not be exceeded without the authorization from the Test Controller.

IV. RESPONSIBILITIES

A. TEST CONTROLLER:

1. Issue all work permits.

2. Maintain a record of all work permits issued.

3. Ensure that a sufficient number of copies are available for each member of the work party.

4. Issue radio equipment.

5. Notify Rail Vehicle Operators of work permits in effect, including location, slow zones, and the type of work being performed.

B. EMPLOYEE OR CONTRACTOR:

1. Employees will contact the Test Controller to schedule the work permit at least 48 hours in advance of the work request, except in an emergency.

2. Contractor will coordinate all request for work permits at Track Allocation Meeting.

3. Obtain the work permits from the Test Controller prior to the work party entering the Segment-2A Right-Of-Way.

4. Distribute copies of the work permit to all members of the work party.

5. Ensure that all members of the work party adhere to all rules, procedures and conditions applicable.

V. PROCEDURES

1. Employees of contractors that have been scheduled to work on the Segment-2A Right-Of-Way will have a designated individual in charge of the work party secure sufficient copies of the work permit for all members of the work party prior to receiving access to the work area.

2. When work has been completed, each day, the employee in charge of the work party shall return radio's and inform the Test Controller that all members of the work party have departed the Segment-2A Right-Of-Way.

3. All members of the work party are subject to challenge by Security or Safety Personnel. When challenged, they must produce their copy of the work permit and their green contractors identification badge.

4. The individual in charge of the work party must be familiar with the work area, so he/she can safely locate and mark the limits. If not familiar with the work area, then an escort must be assigned by the Test Controller to guide the work party to the work area and assure the limits are marked correctly.

5. The Metro Rail Flagging Procedure must be adhered to when working on the Metro Rail Right-Of-Way.

6. The Metro Rail Radio Procedures must be adhered to and remain in effect.

LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

METRO RAIL WORK PERMIT
_____ LINE

Permit Number_____ Effective From: _____ To:_____

No. in Work Party ____ Day(s): S M T W T F S

Date:_____ Beginning:_____ Ending:_____

ISSUED TO: _____

AUTHORITY TO OCCUPY:_____

AT/BETWEEN:_____

AND: _____

POWER STATUS: AC * ON OFF OFF AND GROUNDED

DC * ON OFF OFF AND GROUNDED

BREAKERS: OPENED_____

RACKED OUT __NO __YES _____

POWER INSPECTOR/SUPERVISOR:_____

TAGS ISSUED:_____ TAGS RETURNED:_____ TIME CLEAR:_____

EQUIPMENT BEING USED: _____

_____

_____

SPECIAL CONDITIONS/INSTRUCTIONS: _____

_____

_____

_____

ISSUED: DATE:_____ TIME:_____ BY:_____

RECEIVED: DATE:_____ TIME:_____ BY:_____

READ BACK TIME:____:____

READ BACK BY: _____

CONTROLLER: _____

TEST OPERATIONS PROCEDURE NO 17

I. TITLE. **POWER CLEARANCE**

II. PURPOSE

The purpose of this procedure is to safely control the Traction Power Supply System (TPSS) and to establish the procedures that will be followed when a person is working on, or in contact with electrical circuits or apparatus requiring power removal/restoration.

III. REQUIREMENTS

1. The Test Controller will maintain written records in their log of power outages and requests as well as a display board indicating which sections are energized, including the status of all substation breakers for the Test Operations Area being controlled.

2. An employee must request power removal and re-energization through the Test Controller.

3. The circuit or apparatus to be de-energized must be tested and grounded with grounding devices. "DO NOT OPERATE" tags will be attached to the de-energized equipment/apparatus.

4. Anyone entering a Traction Power Substation and observing "DO NOT OPERATE" tags must not attempt to energize the tagged equipment. The Test Controller must be notified at once and their instructions followed.

IV. PREPARATION OF POWER CLEARANCE FORM

All Power Clearances will be numbered in numerical order starting with the number 1000 (1001 - 1002, 1003, etc.) beginning at the start of each new day's work. The starting time and ending time of each day will be the 24 hour period designated by LACMTA as one complete day. At the start of the new day's work the Power Clearance numbers will revert back to (1000 - 1001 - 1002, etc.). If two substations are to be removed from service (de-energized) for work simultaneously, it will be the responsibility of the employees removing the power in the field to coordinate the Power Clearance numbers that will be used for each substation with the Test Controller (i.e., SUB-19 lists Clearance # 1000 and SUB-20 lists Clearance # 1001).

The following information will be recorded on the Power Clearance Record.

1. Power Clearance Number

2. Location: Use designated name and/or number for where the work will be performed. (i.e., substation name and number.)

3. Date

4. Circuit/Apparatus: List circuit or apparatus to be worked on.

5. Time Requested for de-energization.

6. Reason: List reason for Power Removal/Restoration

7. Apparatus: Use designated number of apparatus. (i.e., 170-B02, 170-B03, etc., Rectifier DC/SUB-170, etc.)

8. Open and Tag Number: Record the apparatus is opened and tagged. If apparatus is normally open, indicate the time the apparatus was checked open in the field, and under REMARKS, list "normally open" or "checked open in the field". The same process will apply when closing the apparatus.

9. By: Initials and L # of the employee that opened/checked the apparatus.

10. Voltage: Record voltage reading after breaker is open.

11. Closed: Record the Tag Number apparatus is closed. If apparatus is left open, note this information in the space provided, and the reason left open, under "Remarks". (i.e., BO-1 breaker will be checked in a.m.)

12. By: Initials and L # of the employee that closed/checked the apparatus. Record the repeated time.

13. Voltage: Record voltage reading after breaker is closed.

14. Traction Power: Insert the name of employee removing the power.

15. Power Has Been Removed From: Insert the circuit or apparatus de-energized.

16. Status Statement: This allows the contractor to test and observe placement of ground for the listed circuit or apparatus isolating the designated work area before proceeding with the work.

17. Test Controller: Will sign in the space provided, with the time and date.

18. Release of Clearance: The Contractor/employee responsible for the work will release the Power Clearance, by number, to the Test Controller reporting all personnel are clear of the designated work area affected by the circuit or apparatus.

19. Release Repeated Correctly: After the traction power employee has given the information in Item 18 to the Test Controller, the Test Controller will read the information back to employee, and if all information is correct, the Test Controller will insert the time and date and sign in the space provided.

    NOTE: All switching involved, and information required, must be listed in the spaces provided on the Power Clearance Form. The Test Controller will use this form for the purpose indicated and the form will remain on file in the Red Tag Office.

20. Equipment Status: If the circuit or apparatus is OK or NOT OK to be energized. If the circuit or apparatus is NOT OK to be energized, the reason MUST be listed on the Power Clearance in the space provided. "State reason if NOT OK to energize". Any circuit or apparatus that is not to be energized or restored to normal operating status MUST be listed on the Test Controllers Daily Log Report, with the reason the apparatus or circuit must remain blocked an tagged "Out of Service", and carried daily, until released by the Power Department.

21. Transfer: List the name of the employee to whom the Power Clearance was transferred, the time, date, reason, and the name of the Power Supervisor completing the transfer.

POWER CLEARANCE RECORD

Power Clearance #: [1]______________________ Date:[3]__ __ : __

Location: [2]____________

Circuit or Apparatus: [4]______________________________

Time De-Energized: [5]___ : ______ Reason: [6]______________

Apparatus	Open & Tag No	By L # & Init.	Read Volt	Closed	By L # & Init.	Read Volt	Remarks
[7]	[8]	[9]	[10]	[11]	[12]	[13]	

DE-ENERGIZE

I, [14]______________________ verify power has been removed from the
(Traction Power Employee)

[15]______________________________________. Your designated work area
(Circuit/Apparatus)

is ready for Red Tag access. Contractor(s) may test, and observe grounds placed onto the circuit/apparatus isolating the designated work area. [16]

Clearance repeated correctly [17]______________________________
(Time & Date) (Test Controller)

- -

ENERGIZE [18]

I______________________________ report all contractors/personnel Clear
(Contractor)

Of______________________________ and Release Clearance Number ________
(Circuit Apparatus)

You, [19]____________________ have my authorization to remove your grounds and
(Traction Power Employee)

Re-energize____________________ Repeated correctly______________________
(Circuit/Apparatus) (Time & Date)

____
(Test Controller)

Circuit/Apparatus is [20]________ to be Energized______________________
(OK/Not OK) (Reason, If not OK to be Energized)

- -

CLEARANCE TRANSFER [21]

Clearance transferred to ______________________ at ________________
(Employee) (Time & Date)

Reason______________________ Completed by________________ L-________
(Controller L#)

TEST EMERGENCY PROCEDURE NO. 1

I. TITLE: **TRAIN DERAILMENT/COLLISION SEGMENT-2A MAINLINE AND/OR YARD**

II. PURPOSE

The purpose of this procedure is to provide guidelines for emergency response and personnel action in the event of a derailment on the Segment-2A Mainline/Yard.

III. PROCEDURES

1. Notification

a. A Train Operator becoming aware that his/her train is derailed shall stop the train immediately, if not already stopped, and notify the Test Controller by radio or telephone, whichever is available, and provide the following information:

1) Caller's identification
2) Reason for the call.
3) Location (track number, milepost, street crossing or nearest station).
4) Need for medical assistance
5) Conditions at incident scene
6) Presence of smoke or fire

b. The Test Controller shall instruct the Train Operator to:

1) Secure the train and apply brakes on all cars.
2) Notify passengers/Test Personnel of the problem and action to be taken.
3) Report any passenger or employee injury or the presence of smoke or fire to the Test Controller immediately.
4) Investigate and note extent of visible damage, obstructions and report information to Test Controller.

c. The Test Controller shall immediately notify the appropriate Law Enforcement Agency in CCF, giving them the Train Operator's name and the location of the derailment. They shall be advised of any injuries, fire, or other pertinent data.

d. The Test Controller shall cause the traction power to be removed in the area of the derailment on both tracks, until it has been determined by supervision on the scene that it is safe to restore power for train movement.

e. The Test Controller shall instruct the Train Operators of trains approaching the accident site from either direction to stop their trains and report their position. If the accident occurs in the Segment-2A Pocket Track West of the Wilshire/Alvarado Station, CCF shall be notified.

f. The Test Controller shall cause the interlocking signals (if operable) at adjacent interlockings on both sides of the collision site, to display "stop", to prevent trains from moving into the affected areas.

g. Test Controller shall notify the appropriate response personnel by instituting the Emergency Call Out list.

2. Chairman of the Accident Investigation Team (CAIT)/On Scene Coordinator

a. Upon arrival at the site to investigate the accident, the CAIT, who shall function as the on-scene coordinator (OSC), shall establish communications with the Test Controller, be responsible for coordinating transit system activities, and cooperate with the Fire or Police Department, if present.

b. The CAIT shall check the track adjacent to the affected track for train clearance and report the condition to the Test Controller.

c. When the CAIT determines and reports that the adjacent track is not obstructed, the CAIT may advise the Test Controller to restore traction power to the unobstructed track to proceed at restricted speed past the accident area. The Test Controller shall control Train Operations on Red Line Segment 2A as required by the conditions.

d. The CAIT shall inspect the operating cab(s) of the train(s) involved in the accident and note any irregularities or defects on the cab displays or train operating controls. The CAIT shall obtain testimony from the Train Operators involved as to the cause of the accident and, at the same time, observe their physical appearance and general behavior to determine their fitness to operate. Medical examination of train operators involved in the accident will be required immediately after incident and shall be supplied to the CAIT upon release of the information by the attending physicians or hospital.

e. After investigating the collision or derailment, the CAIT shall provide the Metro Red Line Accident Investigating Team with an informative report regarding the following:

1) Any irregularities found in the operating cab(s)
2) Braking capability of the cars being moved
3) Description of the train movement as furnished by the Test Controller
4) Cause of the collision or derailment as furnished by the Train Operator(s) and their fitness to operate
5) Presence and length of fresh skid marks on the rails
6) Rail condition (wet, slick, oil covered)
7) Evidence of a track switch run-through
8) Number of trucks or cars derailed
9) Damage to equipment, car and wayside
10) Impact of collision or derailment on train movement.
11) Effect on car availability
12) Medical Test Result of Train Operator(s) involved in the accident.
13) Any other pertinent information relative to the collision or derailment.

f. The CAIT is responsible for notifying appropriate MTA Construction staff, who will in turn notify pertinent regulatory agencies of any reportable accidents. MTA will be the focal point for any dealings with regulatory agencies (e.g., CPUC, NTSB)

3. Medical Assistance

a. Medical assistance for employee or passengers shall be requested through the Test Controller. The employee requesting medical assistance shall provide or estimate the number of people requiring assistance and, if possible, determine the quickest access point to the scene.

b. The Test Controller shall request aid through the MTA Transit Police in CCF, providing the location, cross street and location of nearest access via station or emergency egress to the scene.

c. The names and addresses of the people requiring medical assistance, and the names of the medical agencies and personnel notified shall be included in the accident and unusual occurrence reports.

4. Removal of Damaged Cars

a. Traction power shall be removed from the involved track before the Rail Facilities Maintenance personnel can begin work.

b. The Metro Rail Transportation Operations Supervisor (RTOS) shall arrange for proper flagging protection for the work group, in accordance with the Rules and Procedures for Conducting Test Operations.

c. When the RTOS in charge of the work group advises that the train movement on the adjacent track is hazardous to the operation, the Test Controller shall suspend train operations on the adjacent track for the duration of the operation.

d. Collisions with vehicles other than LACMTA vehicles and the rescue of injured persons in those vehicles is the purview of the local police and fire departments. On occasion, however, they may require assistance from transit system personnel or equipment. This assistance shall be provided as requested or needed. Certain operations, such as jacking of rail cars, require specialized equipment and skills, and should not be performed by fire department personnel. Effective liaison between the RTOS, fire department, CAIT, and the Maintenance Supervisor is vital to avoid any situation which may further endanger personnel or result in excessive damage to LACMTA equipment.

e. After any damage to track and other wayside equipment has been repaired and the damaged/derailed cars are safely secured and approved for safe train movement by the Test Controller and the MTA Start-Up Program Manager (in conjunction with Metro Rail personnel at the scene), the MTA Start-Up Program Manager shall request the Test Controller to coordinate the restoration of Segment 2A power. The Test Controller shall alert all personnel in the area that traction power will be restored.

f. After power has been restored and the damaged cars are in route to the yard, the Test Controller shall request a test train be operated through the area at restricted speed to determine that right-of-way conditions are acceptable.

TEST EMERGENCY PROCEDURE NO. 2

I. TITLE: **PERSON HIT BY TRAIN**

II. PURPOSE

The purpose of this procedure is to provide guidelines for emergency response and personnel action in the event of a person being struck by a train in Segment-2A.

III. PROCEDURES

1. Initial Actions

   a. Whenever a Train Operator observes an unprotected person on the tracks ahead of a train, every effort shall be made to avoid hitting the person, including applying brakes, pushing the "emergency stop button", and sounding the train horn.

   b. The remainder of this procedure is to be followed if efforts to avoid hitting the person are unsuccessful.

2. Train Operator's Responsibilities

   a. Notify Test Controller of the accident by using the train radio and reporting the accident. Should attempts at radio contact be unsuccessful, utilize the nearest available communication.

   b. Furnish Test Controller with the train identification, track number, milepost, and the train location.

   c. Request Test Controller to remove traction power and confirm removal.

   d. Secure the train by setting the brakes.

   e. Leave the train and ascertain the location and condition of the person.

   f. Notify Test Controller of the person's condition and, if possible, assist the person until medical assistance arrives.

   g. If any part of the train is in a station, discharge passengers through the doors that are in the station.

   h. Attempt to obtain the names and addresses of any witnesses to the accident.

i. Assist the public emergency service personnel who respond to the accident whenever possible

j. Prepare a report of the accident and submit it to the Chairman of the Accident Investigation Team (CAIT).

3. Test Controller

a. Initiate removal of traction power and verify the removal to the Train Operator.

b. Notify the MTA Transit Police Department appropriate Law Enforcement Agency and request assistance. Provide them with as much specific information as possible (i.e., nature of the emergency, location, nearest points of entry, conditions known at the time).

c. Notify the following

1) CAIT (Chairman of the Accident Investigation Team)
2) Manager of CCF
3) MTA Start-Up Program Manager
4) MTA Transportation Operations Supervisor
5) MTA Superintendent of Rail Equipment Maintenance
6) MTA Superintendent of Rail Facilities Maintenance
7) CM Rail Activation Manager (if not functioning as the CAIT)

d. Alert Train Operators approaching the area.

e. Initiate action to close the affected area to unauthorized personnel with assistance from transit system security.

4. CAIT/On-Scene Coordinator

a. Upon arrival, functions as the On-Scene Coordinator (OSC) and contact the Test Controller and establish a command post to manage on-the scene information. All personnel involved in the accident shall make their presence known to the Accident Investigation Team on the scene.

b. Take charge of coordinating all transit system activities and liaison with Fire and Police Department Officers in charge.

c. Notify appropriate MTA Construction, and Operations staff. MTA will notify pertinent regulatory agencies of reportable accidents and serve as the focal point for any dealings with regulatory agencies (e.g., CPUC, NTSB).

5. Transit System Security

The first officer(s) on the scene of an accident of this nature will take the following actions:

a. Determine if:

1) Test Controller has been notified.
2) Removal of the traction power has been accomplished.
3) Notification has been made to Police, Fire, rescue and appropriate personnel and they are responding.

b. Render or assist in rendering first aid to the victim pending arrival of competent medical authorities.

c. As soon as practicable, furnish Test Controller with train identification, track number, milepost, and accident location.

d. Assist with clearing area of unauthorized personnel.

e. Attempt to obtain names and addresses of witnesses to the accident.

6. Victim shows signs of life or is not obviously deceased

a. Should the victim show signs of life or is not obviously deceased, on-the-scene personnel shall provide whatever assistance is within their capabilities.

b. Actual rescue of victims is the responsibility of the local Fire Department. On occasion, however, they may require assistance from transit system personnel or equipment. This assistance shall be provided as requested or needed. It is recognized that certain operations, such as jacking train cars to elevate and remove a pinned victim, require specialized equipment and should only be done by trained personnel. Effective liaison between the Fire and Police Department Officers in charge and the Accident Investigation Team is vital to avoid any situation which may further endanger Personnel or result in excessive damage to equipment.

7. Victim Obviously Deceased

a. Accidents in which the victim is obviously deceased are the primary responsibility of the Police and Coroner and may be the result of a crime. With this in mind, transit system personnel should not disturb the scene until the arrival of the Police or coroner and should try to identify and detain witnesses, if possible.

b. On-the-scene personnel should be guided by direction of the Police Officer in charge.

8. Traction Power Restoration and Resumption of Testing

a. After the person has been removed, the Test Controller shall instruct the MTA Rail Facilities Maintenance Personnel to clean the area.

b. When all personnel and equipment are in the clear, and permission is given by the Fire/Police Officer in charge, the CAIT/OSC shall notify the Test Controller. The Test Controller will then order traction power restored.

c. Test Controller will restore service and notify all concerned authority (MTA Start-Up Program Manager, MTA Operations and the Construction Manager of Rail Activation.)

9. Removal of Accident Car/Train

a. The CAIT/OSC shall inspect the operating cab(s) of the train(s) involved in the accident and note any irregularities or defects on the cab displays or train operating controls. The CAIT shall question the Train Operators involved as to the cause of the accident and, at the same time, observe their physical appearance and general behavior to determine their fitness to operate. Medical examination of train operators involves in the accident will be required immediately after incident and shall be supplied to the CAIT upon release of the information by the attending physicians or hospital.

b. After power has been restored and any damage to the vehicles repaired, the Test Coordinator and the MTA's Start-Up Program Manager (in conjunction with MTA operations personnel at the scene) shall request the Test Controller to instruct the Train Operator to move the vehicle to the Main Yard & Shops for detailed inspection.

c. After investigating the accident, the CAIT shall provide the Metro Red Line Accident Investigating Team with an informative report regarding the following:

1) Any irregularities found in the operating cab(s)
2) Braking capability of the cars being moved
3) Description of the train movement as furnished by the Test Controller
4) Cause of the collision or accident as furnished by the Train Operator(s) and their fitness to operate
5) Presence and length of fresh skid marks on the rails

5. Transit System Security

The first officer(s) on the scene of an accident of this nature will take the following actions:

a. Determine if:

1) Test Controller has been notified.
2) Removal of the traction power has been accomplished.
3) Notification has been made to Police, Fire, rescue and appropriate personnel and they are responding.

b. Render or assist in rendering first aid to the victim pending arrival of competent medical authorities.

c. As soon as practicable, furnish Test Controller with train identification, track number, milepost, and accident location.

d. Assist with clearing area of unauthorized personnel.

e. Attempt to obtain names and addresses of witnesses to the accident.

6. Victim shows signs of life or is not obviously deceased

a. Should the victim show signs of life or is not obviously deceased, on-the-scene personnel shall provide whatever assistance is within their capabilities.

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8. Traction Power Restoration and Resumption of Testing

a. After the person has been removed, the Test Controller shall instruct the MTA Rail Facilities Maintenance Personnel to clean the area.

b. When all personnel and equipment are in the clear, and permission is given by the Fire/Police Officer in charge, the CAIT/OSC shall notify the Test Controller. The Test Controller will then order traction power restored.

c. Test Controller will restore service and notify all concerned authority (MTA Start-Up Program Manager, MTA Operations and the Consultant Manager of Rail Activation.)

9. Removal of Accident Car/Train

a. The CAIT/OSC shall inspect the operating cab(s) of the train(s) involved in the accident and note any irregularities or defects on the cab displays or train operating controls. The CAIT shall question the Train Operators involved as to the cause of the accident and, at the same time, observe their physical appearance and general behavior to determine their fitness to operate. Medical examination of train operators involves in the accident will be required immediately after incident and shall be supplied to the CAIT upon release of the information by the attending physicians or hospital.

b. After power has been restored and any damage to the vehicles repaired, the Test Coordinator and the MTA's Start-Up Program Manager (in conjunction with MTA operations personnel at the scene) shall request the Test Controller to instruct the Train Operator to move the vehicle to the Main Yard & Shops for detailed inspection.

c. After investigating the accident, the CAIT shall provide the Metro Red Line Accident Investigating Team with an informative report regarding the following:

1) Any irregularities found in the operating cab(s)
2) Braking capability of the cars being moved
3) Description of the train movement as furnished by the Test Controller
4) Cause of the collision or accident as furnished by the Train Operator(s) and their fitness to operate
5) Presence and length of fresh skid marks on the rails

6) Rail condition (wet, slick, oil covered)
7) Evidence of a track switch run-through
8) Number of trucks or cars if derailed.
9) Damage to equipment, car and wayside.
10) Impact of accident on train movement in the Yard.
11) Effect on car availability.
12) Medical Test Result of Train Operator(s) involved in the accident.
13) Any other pertinent information relative to the accident.

TEST EMERGENCY PROCEDURE NO. 3

I. TITLE: **BOMB THREATS**

II. PURPOSE

The purpose of this emergency procedure is to provide guidelines for emergency response and personnel action in the event of a bomb threat in Segment-2A.

III. PROCEDURES

1. Notification

   a. Employees receiving a bomb threat call shall attempt to obtain the following information:

      1) Name of person calling.
      2) Location of the bomb.
      3) Scheduled time of explosion.
      4) Identification of container (size, color, and material).
      5) Type of bomb.

   b. Employees shall promptly relay all information to the Test Controller.

   c. The Test Controller will notify the MTA Transit Police Department and all concerned departments.

2. Known Location and Explosion Time of Bomb

   a. When a bomb is reported on an identified train, the Test Controller will instruct the Train Operator to do the following:

      1) Proceed to the nearest station and evacuate passengers on the train and any workers on or near the platform. Move the train out of the station:
      2) Then, secure the train with the doors open.
      3) Leave the train unattended for inspection by law enforcement personnel.

   b. Test Controller will instruct Train Operators in approach to the station on the adjacent track to stop outside the station and await further instructions.

   c. When a bomb is reported in a station or system building, transit police will be dispatched to the affected facility to evacuate all personnel from the facility.

d. When a bomb is reported on the right-of-way (in a tunnel) the Test Controller will order Train Operators on both tracks in approach to the reported bomb location to stop their trains short of the danger location and await further instructions.

3. Location and Explosion Time of Bomb Unknown

a. When a bomb threat is received and the location and time are not given, the Test Controller will order Train Operators on both tracks to stop their trains at the next passenger station, inspect their trains for any suspicious objects or packages, and report findings to the Test Controller and follow his/her instructions.

1) Transit system security shall inspect all stations and facilities for any unattended objects or packages.
2) Test Train crews should inspect all cars of trains for unattended objects or packages.
3) Train Operators shall observe the right-of-way (tunnels) for unusual objects or packages.
4) Employees discovering suspicious objects or packages shall order the area cleared and notify the Test Controller. If suspicious object or package found on the train at passenger station, notify Test Controller, evacuate passengers from train and station, and remain clear of area until security arrives.

4. Inspection of Area

a. Inspection of the area of a located, suspected bomb shall be performed only by authorized law enforcement personnel.

b. Employees at the scene shall inform law enforcement officials of their findings and remain clear of the scene.

5. Resumption of Testing

a. When the bomb is found or the threat is nullified by law enforcement officials and it is determined to be safe for operations by the authorized personnel, the Test Controller will:

1) Restore test operations and notify all concerned departments.

TEST EMERGENCY PROCEDURE NO. 4

I. TITLE: **EMERGENCY REMOVAL OF SEGMENT-2A TRACTION POWER**

II. PURPOSE

For the removal of traction power in an emergency.

III. REQUIREMENTS

1. Traction power will be de-energized and locked out in emergency conditions for the duration of the emergency or until Test Operations Procedure No. 7 is implemented.

2. Emergency Trip Station (ETS) operation must be activated in accordance with the rules.

3. Test Controller will maintain written records associated with any operation of the ETS push buttons or local remote control of feeder breakers at traction power substations.

IV. PROCEDURES

1. General

For the purpose of emergency removal of Segment-2A traction power, the Segment-2A maintrack is controlled from each traction power substation, emergency trip stations (ETS) along the Segment-2A right-of-way, or from the test control facility via SCADA, if available. In all instances central control shall be immediately notified by the person activating emergency removal of power.

2. Operation of Emergency Trip Buttons

Each button is a push type with a latching device to hold the button in the depressed position. Once pushed, the power will be de-energized in the designated section. While the push button is in the depressed position, the button will prevent the breakers within the substation from being re-closed and re-energizing power. After the push button is released, the trip circuits are reset locally, and the feeder breakers re-closed to re-energize traction power.

3. Operation by Local/Remote Control

Feeder breakers are operated locally from each traction power substation, or from central control if available for the mainline.

4. Mainline Limit

Traction power for the Segment-2A maintrack is provided by the mainline substations and extends from the Westlake/MacArthur Park station to the Wilshire/Western Station.

5. Reserved for Future Use

6. Reserved for Future Use

7. Emergency Procedure

a. In the event of an emergency, the following will be accomplished:

1) An emergency will be declared.
2) The person declaring the Emergency will notify the Test Controller by name, occupation and location, and specify the location where power should be or was de-energized.
3) The Test Controller will record the caller's name then attempt to determine the extent of the Emergency from the caller and notify the appropriate personnel and agencies, if necessary.
4) The Test Controller will notify the Power Supervisor that an Emergency Trip push button has been activated and that personnel will be needed to respond to the appropriate substation(s) to restore power when required.
5) If power removal will affect Westlake/MacArthur Park Segment-1 revenue operations, notify the Segment-1 Controller.
6) The Test Controller will gather all related information regarding the Emergency including individual reports, complete the appropriate forms, and give these to the investigating supervisor upon his/her arrival.

b. Post Emergency

1) Only the person who caused power to be de-energized or their designee may authorize restoration of power. After the Test Controller is notified he/she will pull the push button out into its normal position.

2) The Test Controller will then authorize the Power Supervisor to reset the trip circuits and close the traction power feeder breakers associated with the de-energized zone and restore power.

TEST EMERGENCY PROCEDURE NO. 5

I. TITLE: **ACCIDENT/INCIDENT INVESTIGATION**

II. PURPOSE

To provide guidelines for investigation activities due to a Segment-2A accident/incident during test operations.

III. REFERENCE

The guidelines described herein are based on material from the MTA Operations "Rail Accident Procedures" manual dated 09/20/90.

IV. REQUIREMENTS

A. Some minor incidents and/or accidents may be handled by the Train Operator or the Test Controller, while other minor incidents and/or accidents will require the Train Operator, the Test Controller, Chairman of the Metro Red Line Accident Investigation Team (CAIT), MTA Manager of Rail Operations, and MTA Construction Safety Representative to provide detail information.

An incident is an occurrence which if not corrected could affect the safety and reliability of the rail transit system. Incidents are events which need support to resolve or eliminate the situation. Some such incidents are:

- Broken or faulty signals (false indications, dark signals, etc.)
- Broken or faulty Control/SCADA indications (false indications or alarms, loss of control or display, etc.)
- Broken or faulty wayside equipment (CCTV's, power, signals, tracks, fencing, stations, etc.)
- Broken or faulty vehicle equipment (ATP's, doors, brakes, propulsion, train lining, PA's, etc.)
- Violations of test instructions, train orders, and/or bulletins (signal violations, disregard of instructions, etc.)

B. Other more serious accidents/incidents will require the efforts of a Metro Red Line Accident Investigation Team consisting of MTA Construction Operations and Maintenance personnel, MTA Construction Safety representative, and MTA's Transit Police Representative.

The more serious accidents/incidents will be known as **Code 2 Accidents**. They may involve one or more of the following events, and are reflected, as a minimum, in the Emergency Test Procedures:

1. Death.

2. Test train vehicle vs. maintenance vehicle or alighting test personnel which results in an accident requiring medical or first aid treatment.

3. Any mainline or yard derailment.

4. Any accident/incident which requires the evacuation of test personnel. (Unloading of test personnel is considered an evacuation due to circumstances which threaten their safety).

5. Fire or explosion on test train/vehicle or at a Metro Red Line facility or construction site.

6. Multiple injuries, two or more serious injuries (a serious injury is one which involves an individual being transported to a medical facility.)

7. Collisions between test trains or between test trains and other track or wayside equipment.

8. Accident/incident involving mainline interlockings (ie. Union Station, McArthur Park, Yard, etc.)

9. Chemical spill involving radioactive substance, solvent, flammable or corrosive liquid, or other toxic liquid or the uncontrolled release of a compressed gas or hazardous substance.

10. Employee involved in a serious injury. (ie, the individual must be transported to a medical facility).

11. Accident/incident involving a runaway Test train/vehicle resulting in damage or injury.

Note: An industrial injury occurring at a Metro Rail Line facility or construction site will be classified as a Code 2 Accident if the incident involves one or more of the above elements.

C. Local and/or Area Police and Fire Departments

If a surface accident along the Metro Rail Line corridor requires police or fire department activity that may block station entrances/exits or ventilation shafts, or obstruct yard tracks, or run hoses across yard tracks, the police and/or fire department will immediately notify the Test Controller as to location, magnitude, type, and conditions at the accident.

V. INVESTIGATION PROCESS

A. Minor Accidents/Incidents

1. For minor incidents the Train Operator will immediately notify the Test Controller, and prepare an appropriate Operators Report. The Test Controller will assign test personnel to assist in rectifying the situation, and to follow-up each incident with a short narrative explaining the findings, nature of the problem, and remedial action taken. A copy of this narrative will be sent to the Rail Activation Manager, MTA Construction Start-Up Program Manager and the MTA Construction Safety Representative within 24 hours of the occurrence.

2. For minor accidents, not determined to be Code 2 Accidents, the Train Operator will immediately notify the Test Controller and prepare an appropriate Operators Report. The Test Controller notifies the Chairman of the Accident Investigation Team (CAIT), and both the MTA Construction Safety Representative and its Construction Start-Up Program Manager and the CM's Rail Activation Manager.

   Upon arriving on the scene, the CAIT takes charge of the investigation. He interviews the Train Operator, test personnel or any other witnesses, takes measurements, photos, and prepares a summary report. A copy of this report will be sent to the MTA Construction Start-Up Program Manager and the CM's Rail Activation Manager within 48 hours of the occurrence.

B. Major Code 2 Accidents

1. The accident investigation process for Code 2 Accidents will consist of three main stages

   a. Preparation
   b. Investigation
   c. Results (Corrective actions)

2. Preparation

a. Advance preparation is essential to ensure that the MTA effectively investigates accidents. This preparation will ensure that adequate resources are available to investigate accidents and that these resources are successfully utilized. The MTA Construction Safety Section will review and recommend changes to the Accident Investigation Procedures as the need arises.

b. Each MTA Construction and Operations department will maintain an adequate supply of investigation equipment and ensure adequate training for its personnel who respond and investigate Code 2 events, accidents, and/or fires. A list of items useful in an accident investigation is provided at the end of this procedure.

3. Investigation

a. In the event of a Code 2 Accident, the Test Controller will initiate the Emergency Callout List to contact members of the Accident Investigation Team and its chairman (CAIT).

The first Team members to arrive at the accident scene should ensure that adequate professional assistance (ie. fire department personnel) are present or have been summoned if need to care for the injured and control any life threatening conditions exist.

b. Investigation activities at the accident scene should then focus on the preservation of evidence. The evidence can later be used in the investigation of the accident. Methods of preserving the evidence include the following:

1) Photography
2) Interviews
3) Measurements and drawings
4) Debris Collection

C. Accidents of extreme severity (ie. Fatalities, major fires, etc.) will be evaluated by MTA Construction Safety Section to determine whether the severity of the accident warrants an investigation utilizing the combined resources of two or more MTA Construction/Operations departments. Such joint investigations will be classified as Multi-Departmental Investigations and will sometimes entail the use of outside consultants. Initiation of Multi-Departmental Investigations will be announced by the MTA Construction Safety Section.

D. Follow-up activities consist of all investigation activities performed after the accident scene has been cleared including the following:

1) Collection and review of equipment specifications, inspection records, maintenance records, etc.
2) Collection and review of reports (ie., police, Vehicle Accident/Incident report, etc.) generated as a result of the accident.
3) Performance and review of Train Operator and witness interviews.
4) Inspection of physical evidence.
5) Accident reenactment.
6) Laboratory testing including information gained as a result of medical examinations.
7) Meetings
8) Participation in the Multi-Departmental Investigation Committee reviews of Special Reports including contributing factors, recommendations and remedial action plans.

E. Special Reports

In Multi-Departmental Investigations, the MTA Construction Safety Section may request that various MTA Construction/Operations departments produce Special Reports which will include the departments analysis of the accident. These reports will focus on specific aspects of the accident (ie., equipment defects, human error, violation of rules, etc.) and will attempt to identify causes and other contributing factors of the accident. The Special Reports will also include recommendations and any actions taken or planned by the department as a means of preventing or mitigating similar accidents in the future and will provide implementation schedules for planned actions.

IV. RESULTS

A. Closing Memo

Upon receipt of the Special Reports, the MTA Construction Safety Section and the CAIT will issue a closing memo that will summarize findings of fact and remedial action plans and implementation schedules agreed upon by various departments. Issuance of this closing memo to the MTA Operations will signify the close of the investigation of the incident for the purpose of preventing or mitigating similar incidents.

B. Implementation Of Corrective Actions

MTA Construction/Operations departments issuing Special Reports will implement corrective actions pertaining to their department necessary to prevent or mitigate similar accidents. In addition, other departments will implement corrective actions pertaining to their department identified by

the Multi-Departmental Investigation Committee as necessary to prevent or mitigate similar accidents.

TEST EMERGENCY PROCEDURE NO. 6

I. TITLE: **HOSTAGE SITUATION - TRAIN AND/OR PASSENGER STATION**

II. PURPOSE

To provide Segment-2A guidelines for emergency action by rail personnel in the event of a reported hostage situation, causing passenger endangerment and injuries.

III. REQUIREMENTS

A. Train Operator or employee shall immediately notify the Test Controller and provide the following information:

1. The caller's name, telephone number, and identification number, if any.

2. Train Operator will give location (track number, direction, station name or mile post marker, cross street, etc.), if possible.

3. Description of the emergency, condition of passengers and the need for emergency assistance, if required or possible.

IV. TEST CONTROLLER

A. Receive report and record name of person reporting emergency, time of incident and location.

B. INSTRUCTIONS TO TRAIN OPERATOR

1. Proceed to station, if allowed, for evacuation.
2. Status updated, if allowed.
3. P. A. announcement to passengers, if allowed.

C. Evaluate facts

D. Select plan

E. Dispatch Line Supervisor to nearest station location to act as On-Scene Coordinator.

F. Isolate immediate location while providing as much service as possible.

V. INITIATE EMERGENCY NOTIFICATION LIST

VI. COORDINATE

1. Train moves

2. Rescue train

3. Bus bridge

4. Hi-rail maintenance vehicle set-on and movement

5. Train operation outside emergency scene boundaries

6. Restoration of Service

VII. LINE SUPERVISOR/ON-SCENE COORDINATOR

1. Assume control until Police Department arrival.

2. Relinquish control to Incident Commander.

3. Coordinate:

   a. Establish emergency boundaries with Central Control
   b. Transit Personnel at scene
   c. Release for restoration of service

4. Assist Incident Commander as requested and furnish pertinent information as necessary.

5. Update Central Control regarding current status.

VIII. TRAIN OPERATOR

When it becomes apparent that a hostage situation is taking place aboard your train:

- Contact Test Control immediately (if possible).
- Give train location, track number, station mile post marker (if possible).
- Description of emergency condition and assistance required (if possible).
- Do not stop train unless instructed to do so. Attempt to reach the next station (if possible).
- Update and provide Test Control with as much information as possible (if possible).

TEST EMERGENCY PROCEDURE NO. 7

I. TITLE: **EARTHQUAKE**

II. PURPOSE

To provide Segment-2A guidelines for emergency action by Test Controller and Train Operators in the event of a rail emergency.

III. REQUIREMENTS

Employees discovering or being notified of any rail emergency will immediately notify the Test Controller and provide the following information:

1. The caller's name, telephone number and identification number, if any.

2. The location of the emergency (by track number, direction, facility station name, mile post marker, cross street etc.).

3. The extent of the emergency condition, and the origin, if known.

A. TEST CONTROLLER

When CCF becomes aware of an earthquake of significant magnitude, stop all trains (at platforms if possible), hold a minimum of five minutes, while Test Controller evaluates the situation.

1. The Test Controller, immediately upon observing or being notified of an emergency situation affecting the Rail Transit System, will notify the MTA Transit Police for appropriate notification of local Police/Fire Departments with jurisdiction for the emergency location.

2. Give the MTA Transit Police Department the exact location of the reported emergency and street access to the nearest station and extent of emergency. Log callers badge or I.D. number.

3. Dispatch a Supervisor to the emergency scene to act as the On-Scene Coordinator, who will transmit all pertinent information to the Test Controller and institute control of the location and whatever emergency action is necessary.

4. Notify all trains approaching the emergency area, to stop and report their location.

5. Cause the interlocking signals (if operable), at adjacent interlockings on both sides of the emergency site, to display "STOP" signal, to prevent trains from moving into the affected area.

6. Coordinate with Segment-1 Controller to determine seismic magnitude. If magnitude is 5.0 or greater, refer to appropriate procedures (facilities personnel callout, sweep train procedures).

7. Implement single tracking or shuttle operations on un-effected portions of rail system, to establish passenger service by use of Local Control Panels at each interlocking

8. Initiate Emergency Call Out List.

B. DE-ENERGIZE THE CONTACT RAIL

When a verbal request is made to remove the Segment-2A traction power by an employee or the Police/Fire Department, the Test Controller will:

1. Obtain the person's name, title, identification number and department.

2. Request time to clear the areas affected by the power removal, of all trains, if necessary.

3. Remove Contact Rail power and confirm that power has been de-energized.

4. Request the reason for power removal.

NOTE: If an extreme emergency, remove power immediately in incident area on both tracks, or request emergency trip station be operated to remove traction power immediately.

C. TRAIN OPERATOR

In the event of an earthquake Train Operators shall be governed by the following:

- FOLLOW INSTRUCTIONS FROM TEST CONTROL

If no instructions are received from Test Control and the earthquake is of sufficient magnitude:

ATO

- Change to MTO mode
- Operate at "Restricted Speed" for track inspection
- Continue inspection to next station stop and contact Test Control

MTO

- Operate at "Restricted Speed" for track inspection.
- Do not enter portal if still above ground.
- Be alert for Track, Contact Rail or structural damage.
- Continue inspection to next station, stop and contact Test Control.

TEST EMERGENCY PROCEDURE NO. 8

I. TITLE: **FIRE AND SMOKE ON TRAIN OR IN THE SEGMENT-2A RIGHT-OF-WAY**

II. PURPOSE

The purpose of this emergency procedure is to provide Segment-2A guidelines for emergency response and personnel action in the event of fire or smoke on a train.

III. PROCEDURES

1. NOTIFICATION

A. Train Operators or Employee's discovering or being notified of smoke or fire shall immediately notify the Test Controller and provide the following information:

1. Caller's name and identification
2. Location (track number, milepost and nearest station).
3. Extent of smoke or fire and origin, if known.
4. Hold short of the area, if on the Right-Of-Way

B. The Test Controller shall instruct employees discovering a fire to make an attempt to extinguish it, if it is possible and safe to do so.

C. If the fire cannot be extinguished, the Test Controller shall immediately notify the MTA Transit Police and all other concerned transit system departments.

D. The MT Transit Police CCF dispatcher shall provide the Fire Department with the following information:

1. Identify the caller
2. Nearest station or cross street
3. Nature and extent of the smoke or fire

E. The security dispatcher shall provide the affected Fire/Rescue communications center with updated information as it becomes available, but only when require.

F. Train Operators who are approaching the area shall stop short and contact the Test Control. Trains within the area shall be alerted and governed by instructions from the Test Controller.

2. MTA ON-SCENE COORDINATOR (OSC)

A. The Test Controller shall dispatch the MTA Line Supervisor to the nearest station to act as On-Scene Coordinator.

B. The OSC shall.

1. Establish communications with the Test Controller and senior Fire Department official at the scene.

2. Be responsible for coordinating all transit system activities and cooperating with the Fire Department and other public assistance agencies.

3. TRACTION POWER REMOVAL REQUEST

A. When a verbal request for the removal of traction power is made by an employee or the Fire Department, the Test Controller shall:

1. Obtain the person's name, title, identification number, and department or unit.
2. Request time to clear the area of trains, if necessary and possible.
3. Remove traction power and confirm the removal.
4. Power will be removed immediately in an emergency.

B. In the field, in an extreme emergency, the emergency trip station should be operated to remove traction power immediately.

4. TRAIN OPERATOR

A. FIRE ON TRAIN - Train Operators discovering fire or smoke on board their train:

- Do not stop the train - continue to next station if possible
- Contact Control
- Give train number, track, mile post and nearest station
- At station, open all platform side doors and evaluate train

B. IF TRAIN STOPS

- Advise Control.
- Give exact location.

- Attempt to extinguish source of smoke or fire.
- If unable, move passengers and/or Test Personnel to unaffected pair.
- Request CCF/initiate Emergency Ventilation Fan Scenario.
- Do not evacuate from train to ground (right-of-way) until notifying Control and follow Test Controllers instructions. Test Controller must know of this requirement to evacuate to the Right-of-Way. This information will allow the Test controller to stop all trains in the effected area and remove power.

- When passengers have been moved away from affected car, attempt to uncouple good cars and move train out of the area.
- Maintain contact with Test Control and update regularly.

5. TRACTION POWER SERVICE RESUMPTION

A. Test Controller shall restore traction power only after the (OSC) at the scene notifies the Test Controller that the fire has been extinguished, that all Fire Department personnel, Police and Employees are in the clear, and it is safe to restore power.

B. The (OSC) shall ascertain that it is safe to resume train operations and shall so advise the Test Controller.

C. The Test controller will notify the Power Supervision of the request to restore power.

D. The Test Controller shall then restore test operations and notify all concerned departments.