

Rules & Procedures for Conducting Test Operations



LACTC

The Los Angeles County
Transportation Commission

TRANSCAL Transit Consultants of Southern California

**RULES AND PROCEDURES
FOR
CONDUCTING TEST OPERATIONS**

FOREWORD

This Book of Rules and Procedures has been formulated for three purposes:

- 1. To identify the Light Rail System's operating practice and standards.**
- 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.**

**Prepared for -
THE LOS ANGELES COUNTY TRANSPORTATION COMMISSION**

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**Foreword
JM**

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RULES AND PROCEDURES

FOR CONDUCTING TEST OPERATIONS

INTRODUCTION

This Rules and Procedures for Conducting Test Operations Manual 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 LB - LA LRT. 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.

The LACTC will conduct training in these Rules and Procedures initially and will provide additional training in the Rail Operating Rulebook at a later date prior to pre-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 which will be involved in testing of the LB - LA LRT system. Contractor employees, SCRTD employees and LACTC 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 a violation of the rules contained herein shall be considered sufficient cause for discipline for LACTC and SCRTD employees and a request that Contractor employee, be removed from LB - LA LRT project when warrantable. Employees in doubt or uncertain in any situation must take the safe course of action and then contact the designated authority.

Safety must always be the first consideration. The results of unsafe practices on the rail system can be extremely serious. All employees are required to exercise care to prevent injury to persons or damage to property.

SECTION 2

GENERAL RULES

APPLICATION OF RULES -

- 200 Safety is of the first importance in the discharge of duty.
- 201 Employees whose duties are affected by train operations or rail maintenance operations must have a current copy of the Rules and Procedures for Conducting Operations Manual immediately available for reference while on duty.
- 202 Employees must be familiar with and obey all rules and instructions and must attend required classes.
- 203 When in doubt as to the meaning of any rule or instruction, employees must apply to a Supervisor for an explanation.
- 204 Employees in doubt or uncertain in any situation must take the safe course of action and then contact the designated authority.
- 205 Employees must pass the required examinations.
- 206 Employees must engage in only LACTC/SCRTD business while on duty and perform their duties thoroughly, efficiently and in compliance with the rules and instructions.

BULLETINS AND NOTICES -

- 207 Bulletins will be numbered consecutively from January 1 of each year. They will contain permanent changes or additions to the Rule Book. Bulletins will be issued under the signature of the Manager of Rail Activation.
- a. Employees must correct their Rule books as directed by Bulletins by the end of their work day.
- 208 Special Orders will be numbered consecutively from January 1 of each year. They will contain temporary changes to the Rule Book for special conditions for a specific period of time. Special Orders will be issued over the signature of the Manager of Rail Activation.
- 209 Notices and Procedure Notices will be numbered consecutively from January 1 of each year. They will contain instructions to test operating personnel. Notices and Procedure Notices will be issued over the signature of the Manager of Rail Activation.
- 210 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 Notice on the Bulletin board will insert time and date posted and his/her initials in the space provided.
- 211 Employees returning from a period off duty are responsible for compliance with Bulletins, Special Orders, Notices and Procedure Notices posted during their absence.

PERSONAL CONDUCT -

- 212 Employees are governed by the Comprehensive Alcohol & Drug Abuse Policy of LACTC/SCRTD.
- 213 Employees taking any prescribed medication that may affect their judgement or faculties must not operate a LACTC 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 LACTC property is prohibited.
 - b. Employees must not report for duty under the influence or have in their possession while on LACTC 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.
- 214 Employees must keep fully alert at all times. Sleeping or assuming an attitude of sleep while on duty is prohibited.
- 215 Employees are forbidden to eat, drink, smoke or read unauthorized materials in the operating cab of LRV's.
- 216 Employees must conduct themselves in a respectful, courteous and civil manner. Boisterous actions and profane language is prohibited.

- 217 Soliciting by employees for political, religious, social or other causes while on LACTC property is not permitted without the written consent of the proper LACTC representative. Distributing or displaying unauthorized materials on the property or vehicles is prohibited.
- 218 While on LACTC 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-defence device including a stun gun or any object which, when used as a weapon, is capable of inflicting substantial bodily harm.
- 219 Employees must keep their immediate Supervisor advised of their current home address and telephone number.
- 220 Employees are responsible for LACTC property issued to them and must return such property when scheduled or requested. Employees must not convert LACTC property to their personal use and must promptly report lost or defective items to their immediate Supervisor.
- 221 Employees must be dressed as is appropriate for their duties. Clothing worn while on duty must be kept clean, pressed and in good condition.
- 222 Employees must maintain a high standard of personal cleanliness and neatness. Any style that creates a hazard is prohibited.
- 223 While on duty, employees designated by LACTC must have a regulation railroad approved watch, adjusted to the correct time by obtainig a time check from the Test Control Dispatcher.
- 224 Employees are not to participate in gambling in any form while on or about the LACTC premises.

225 Employees are prohibited from fighting, "horseplay" or any form of practical joking on or about the LACTC premises, on or off duty.

226 Employees must not duplicate or cause to be duplicated any LACTC keys.

227 Employees must 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.

228 All LACTC business, instructions and communications must be conducted in the English language.

229 Employees must report on time ready for duty, at the place assigned.

230 Employees must not commit any act tending to bring reproach or discredit upon LACTC.

PERSONAL RESPONSIBILITY -

231 Employees must 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 LACTC property, to exercise good judgement and take necessary precautions at all times.

232 Employees must promptly report all incidents and injuries to the immediate Supervisor no matter how minor and request first aid or medical attention, if necessary.

233 Employees must promptly inform the immediate Supervision of any unsafe condition or defective equipment and take necessary precautions if an immediate safety hazard exists.

- 234 Trespassers, including persons on or near the trackway, must be reported immediately to the immediate Supervisor
- 235 Consider any electrical wire or apparatus to be energized ("live") at all times. Never allow any part of the body, article of clothing, objects being carried or attached to such objects to come in contact with live electrical equipment or circuits.
- 236 Never enter electrical power enclosures or substations unless authorized while in the performance of duty.
- 237 Keep away from all dangling wires and any foreign objects in contact with any electrical conductor. Promptly report such conditions to the immediate Supervisor.
- 238 Do not wear loose, ill-fitting, unfastened or unbuttoned apparel while on duty.
- 239 Keep fire alarm, fire extinguisher, water hydrant or other fire fighting facilities or equipment clear of obstructions at all times.
- 240 Employees must 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 instruction.

EMPLOYEES ON OR ABOUT THE TRACKS -

- 241 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.
- a. Never step or stand on the track switches or components when on the track structure. Remote controlled switches can be expected to move at anytime.

- 242 Employees must expect train movement at any time, on any track and in any direction. Look in each direction before entering upon or standing close to a track.
- 243 Stop 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.
- 244 Walk against the flow of 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.
- 245 Walk or stand clear of tracks when conditions permit. Use established road or pedestrian crossings, overpasses, underpasses or pathways to cross tracks whenever possible.
- 246 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.
- 247 Employees shall not cross tracks directly in front of or behind a standing train or equipment. Allow not less than ten (10) feet clearance ahead of or behind the standing train or equipment before crossing.
- 248 Use extreme caution when passing between or crossing in front of standing trains or equipment while observing the adjacent tracks.
- 249 Do not cross between standing coupled cars by climbing over or under couplers.

250 Do not board or leave any car or any other equipment while it is in motion. Never lean against standing equipment.

251 Enter and leave system property only at approved entrances and exits.

252 Employees must wear prescribed safety apparel.

REMOVE REFUSE -

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

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

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

256 Look for and avoid slipping, tripping and falling hazards. Remove slipping or tripping hazards whenever possible; if unable to do so, promptly notify a Supervisor.

REQUIRED CONDITIONS -

257 Employees must not utilize or operate any LACTC vehicles or equipment without authorization by the Test Control Dispatcher.

258 Employees are not to alter or render inoperative any safety devices unless specifically authorized by the Test Control Dispatcher.

259 Seals on control switches must not be broken without authorization by the Test Control Dispatcher.

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

SECTION 3

DEFINITIONS

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

Aspect - The appearance of a signal conveying an indication as viewed by an operator.

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

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

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.

Block, Absolute - A specific section of track which while occupied by a train no other train is permitted to enter. This block is strictly governed by the Test Control Dispatcher.

Block, Permissive - A method whereby a train operator is authorized by signals or Test Control Dispatcher, to enter a block already occupied by another train in accordance with the rules.

Block, Test - A section of main track between two signals governed by fixed signals, cab signals or the Test Control Dispatcher.

Blue Flag - A portable blue flag, light or marker placed on or near each end of a rail vehicle for protection against it being moved or coupled with another rail vehicle.

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

Brake, Friction - Controlled air blended systems applying stopping forces to brake discs on each axle.

Brake, Track - An electro-magnetic brake located between the wheels of each truck which function through friction contact with the running rail.

Braking (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 made.

Braking (Full Service) - The maximum braking that can be obtained without going into an emergency stop condition. The train's forward motion can be resumed by repositioning the Manual Controller.

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

Cab - The operating compartment of a rail car from which manual control is achieved; the Train Operator's position.

Car - A self propelled vehicle operating on tracks.

Catenary - A system of overhead wires, in which the contact wire is supported from one or more longitudinal messenger wires either directly by hangers or by hangers in combination with auxiliary conductors and clamps.

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

Contact Wire - The electrical conductor which provides the 750 volts direct current to the LRV through contact with the pantograph.

Couple - Connecting rail vehicle units 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.

Deadman Control - A device used on the LRV console which must be held in the operating position before movement can occur and while in motion will bring the LRV to a stop when released.

De-Energize - To shut off electrical power.

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

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

Dual Control Switch - A track switch controlled automatically by the approach of a train, a route selector or manually when required.

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

Electric Switch Lock - A device which restricts the movement of a specific manually operated switch.

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

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

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.

Flagging Protection - Used by work crews for protection while working on or about the track.

Fouling Point - The location on a track beyond which movement or storage of a rail vehicle will interfere with movement on another track.

Grade Crossing - A crossing over the track at grade level for a roadway or footpath.

Guard Rail - A rail mounted to the inside of the running rail designated to keep the car wheels in line with the track.

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

Headway - The time separation between two trains, both traveling in the same direction on the same track, measured from the time the head end of the leading train passes a specific reference point to the time the head end of the train immediately following passes the same reference point.

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

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

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 the operator from a fixed, a cab or hand signal.

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

Light Rail Vehicle (LRV) - An electrically propelled passenger carrying vehicle characterized by high acceleration and braking rates and frequent stops for fast loading and unloading.

Mainline - The territory controlled by the Test Control Dispatcher, consisting of main tracks. Interlockings, turnback tracks or controlled sidings tail tracks and yard leads.

Main Track - A designated track on the mainline upon which trains are operated by cab signals, fixed signals or both when authorized by the Test Control Dispatcher, in a manner prescribed by the Rules.

Mode: Automatic Train Protection (ATP) - Train movement is controlled by the Train Operator governed by cab signals and fixed signals with speed regulation, monitoring and protection.

Mode: Automatic Train Protection By-passed (ATP)-Bypass - Train movement is completely controlled by the Train Operator in compliance with the Rules without speed regulation, monitoring or protection.

Mode: Street Running - Train is controlled by the Train Operator to the posted speed limit in city streets governed by LRV and Traffic Signals. Train Speed is regulated to a maximum of 35 mph.

Mode: Close-In - Train movement is controlled by the Train Operator in specific conditions when cab signals are not available and in the yard limits. Speed is regulated to a maximum of 10 mph.

Pantograph - A roof mounted device over the cab of the "A" section of an LRV for collecting the 750 V.D.C from the catenary.

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

Red Tag - A two part Red Tag issued by the Test Coordinator to the designated individuals of construction, testing or maintenance personnel that have been approved in the Track Allocation Meeting to work in an area where overhead catenary could be energized and train operations conducted. Test Coordinator 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 Coordinator will reassignment be permitted by the Test Coordinator.

Red Tag Area - The Area where the potential exists for train testing and overhead wire energization. It will change weekly during rail activation. Rail Activation Manager will advise every Thursday what the Red Tag Area will be for the following week.

Red Tag Desk - Where Red Tags are distributed and returned. The Test Coordinator is located at the Red Tag Desk.

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

Route - The path a train is to follow.

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

Section Insulator - A device used in the contact wire at specific locations to isolate the flow of traction power within a defined track section.

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

Signal - A method of conveying a visual message to the Train Operator concerning conditions affecting the train movement. The signal as viewed by the operator is the ASPECT. The information conveyed is the signals INDICATION.

Signal Audible - A sound producing device used for attracting attention.

Signal Cab - Indication on the Train Operator's console which conveys a visual message and indicates the prevailing speed command.

Signal Fixed - A signal at a specific location along the track area. It could be a traffic or interlocking signal, slow speed sign, switch indicator or other device for indicating conditions affecting movement of Rail Vehicles.

Signal Hand - A signal indication used to govern vehicle movement by the motion or position of a persons hand.

Signal, Home - An interlocking signal at the entrance of a route governing the use of the interlocking and track block beyond. (Conjunction with verbal instructions of the Test Control Dispatcher.)

Signal, Interlocking - A fixed signal governing the use of an interlocking.

Single Track Operation - The operation (within defined limits) of trains in both directions on a single track on the mainline.

Slip/Slide System - An onboard system for detecting rail car wheel slips and slides.

Speed Limit - A rate at which a train or car may travel.

Speed, Restricted - The maximum operating speed that will permit stopping a train short of an improperly lined switch, track defect, car on track and any obstruction, not exceeding 10 mph.

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

Substation - A facility for distributing electricity identified by an exterior blue light.

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

- a. Remote controlled; - Operated from a distant panel or track impulse.
- b. Semi-Automatic; - Operated from a pole mounted control along side the track, by hand or by a device actuated by the passage of a train.

c. **Spring Switch;** - A switch with a spring device incorporated in the operating mechanism. This device returns the points to their original position after the wheels have passed through the switch in a trailing movement.

Switch Position, Normal - The lead through position of a track switch allowing a straight through movement.

Switch Position, Reverse - The diverging position of a track switch allowing a crossover movement.

Test Control Dispatcher - The designated employee on duty at the Test Control Facility having authority over all movements in the Red Tag Area and Yard.

Test Control Facility - The location where Control and Supervision is accomplished for the Red Tag Area. The command center before Central Control Facility starts operation.

Track Allocation Notice - A schedule published weekly by the Test Operations Group that indicates the specific Contractors, maintenance and testing personnel that will be scheduled to work in the Red Tag area the following week. It indicates time, limits and day of the week for these activities.

Track, Tail - A designated track auxillary 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.

Track, Yard - All tracks within defined limits for storage of cars and other functions.

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.

Train - A consist of one or more rail cars combined into an operating unit.

Train Length - The number of rail cars in a train; its overall length in dimensions of distance.

Trainline - Electrical and pneumatic functions are routed through and between cars by means of the couplers so that signals may be transmitted to all cars of the train.

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

Truck - The under car frame containing the wheels, motors and braking components of the LRV.








SECTION 4

SIGNALS

CAB SIGNALS -

- 400 Cab signal rules are in effect for normal and reverse traffic mainline movements in designated cab signal territory.
- 401 Cab signals are located on the Operator's console and are color coded to speedometer indications.
- 402 Cab signal aspects are displayed by the color and maximum authorized speed indicated on illuminated Operator's console lights.
- 403 If cab signal and fixed signal indications conflict, the most restrictive will govern. Operator must notify the Test Control Dispatcher immediately.
- 404 Close-in mode of train operation will be used in cab signal territory only when authorized by the Test Control Dispatcher 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.

405 Cab Signal Illustrated By:

| <u>Aspect</u> | <u>Indication</u> |
|---------------------------------------------------------------------------------------|----------------------------------------------|
| a.  | Operate; not to exceed 55 mph. |
| b.  | Operate; not to exceed 45 mph. |
| c.  | Operate; not to exceed 35 mph. |
| d.  | Operate; not to exceed 25 mph. |
| e.  | Operate; not to exceed 10 mph. |
| f.  | Stop; Contact the Test Control Dispatacher . |
| g.  | ATP; speed limit has been exceeded. |

406 Automatic Train Protection (ATP) Functions:

Aspect

| | |
|---|--------|
| a | Green |
| b | White |
| c | Yellow |
| d | Red |

Indication

display when button is depressed that the cab signal mode has been selected.

display when button is depressed that the street running mode has been selected.





display when button is depressed that the close-in mode has been selected.

display when the ATP system has been manually bypassed.

HAND SIGNALS -

- 407 Hand signals may be given by a hand-held flag or light of the prescribed color.
- 408 A white light will be used by night, in subways or when required by poor visibility.
- 409 Hand signals must be clearly given in the prescribed manner while facing the train Operator of any track equipment, car or train.
- 410 Employees must not use a red flag or red light for a "proceed" signal, the Operators must stop and call the Test Control Dispatcher.
- 411 Employees giving hand signals must locate themselves so that the signals will be clearly understood. Operators must insure the signals are intended for them.
- 412 Operators must stop for any signal that is unclear or for anyone waving violently on or near the trackway.
- 413 The disappearance of a hand signal governing the movement of any track equipment car or train, including pushing or backing, must be regarded as a "stop" signal. Employees must assure visibility of hand signals before moving the train.

414 AUTHORIZED HAND SIGNALS ARE ILLUSTRATED BY:

| | <u>ASPECT</u> | <u>INDICATION</u> |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| a. |  Swing horizontally at right angle to the track | Stop |
| b. |  Slight vertical movement at arm's length at right angle to the track | Reduce Speed |
| c. |  Raised and lowered vertically at right angle to the track | Proceed |
| d. |  Swung slowly in a circle at right angle to the track | Back Up |

415 **FLAGGING SIGNAL APPLIANCES** of the prescribed color will be used to display the following aspects and indications:

- a. Red - Stop.
- b. Yellow - Caution; proceed at restricted speed prepared to stop at next signal or flagperson.
- c. Green - Resume authorized speed.

INTERLOCKING SIGNALS

416 Train Operator must stop the train before passing a stop indication on an interlocking signal and must not proceed until the indication is clear. If the indication fails to clear in one minute the Operator must call the Test Control Dispatcher.

417 Train Operator must stop the train and report immediately to the Test Control Dispatcher an unauthorized over-shoot of an interlocking signal stop indication stating the train number, location, interlocking signal number and direction of travel. The Operator will be directed by the Dispatcher and must submit a written report to the Test Control Manager on the day of the occurrence.


418 Train Operator may pass an interlocking signal not illuminated or displaying a Red over Red indication only when authorized by the Test Control Dispatcher with a Clearance Card. (Test Operations Procedure No. 12.)

419 When the Test Control Dispatcher is aware that interlocking signals on a Red Tag Area (where testing is to be conducted) are not operational or are out of service, he/she will order those signals covered with a bag. The Test Control Dispatcher will keep records of which signals are bagged. Switches for signals that are bagged must be blocked in the appropriate switch position.


420 INTERLOCKING SIGNAL ASPECTS -


Aspect


Indication

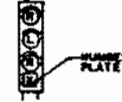
a  Proceed on mainline route governed by cab signals.

b  Proceed on diverging route governed by cab signals.

c  Block clear. Proceed on mainline route prepared to stop at next interlocking home signal.

d  Block clear. Proceed on diverging route prepared to stop at next interlocking home signal.

e  Block occupied. Proceed in close-in mode on main route at restricted speed.



Key: L/R = Lunar White over Red
 R/L = Red over Lunar White
 FL/R = Flashing Lunar White over Red
 R/FL = Red over Flashing Lunar White
 FR/R = Flashing Red over Red
 R/FR = Red over Flashing Red
 R/R = Red over Red

Ⓜ

f

Ⓜ

Block occupied. Proceed in close-in mode on diverging route at restricted speed.

Ⓜ

g

Ⓜ

Stop. Contact Test Control Dispatcher.




INTERLOCKINGS SWITCHES -

- 421 Operators must observe switch points and are responsible for checking the switch point alignment. The Operator must stop short of a switch point found open which is not properly aligned. Report to the Test Control Dispatcher immediately. See Test Operations Procedure No. 8 for hand cranking/throwing switches.
- 422 Operators must not exceed the designated speed while operating over turnouts and crossovers. The rear truck in the train must clear the last switch before resuming normal speed.
- 423 Employees must not change the position of a mainline switch unless directed by the Test Control Dispatcher
- 424 Before starting a manual crossover movement on the mainline, an Operator must insure that the switches at the crossover are properly aligned. (The crossover move must be completed before the switches are restored to their proper position.)
- 425 Trailing a switch point set against the move must not be made through switches unless otherwise prescribed by rules.
- 426 When trailing through a spring switch the Operator must not reverse direction until all trucks in train have completely cleared the switch points.
- 427 Rail cars or hi-rail vehicles must not be operated through the interlocking when it is observed that the switch points or other parts of a turnout or crossover are damaged or broken. The Test Control Dispatcher must be notified immediately.
- 428 Sand must not be used over switches unless an emergency stop is required.

429 LRT SIGNAL ASPECTS -

Aspect

Indication

- a. White  Proceed. Continue through intersection watching for automobiles and pedestrians.
- b. Yellow  Caution. Unless stop can be made before entering intersection, continue at reduced speed watching for automobiles and pedestrians.
- c. Red  Stop. Do not enter intersection.

FIXED SIGNALS -

- 430 Fixed signals of various types are installed in specific locations along with train cab signals commands, to promote safe operations under varying conditions. Operators must be completely knowledgeable regarding the indications and observe all aspects governing train movement.
- 431 Fixed signals which are damaged, missing or displaying an improper or dark indication must be considered in its most restrictive aspect. The Operator must report the condition to the Test Control Dispatcher immediately and be governed by the Dispatcher's Orders.
- 432 Fixed signals apply to trains running in both the normal direction of traffic and in the reverse direction of traffic.

433 Flags or lights of the prescribed colors may be used as temporary fixed signals as required on the trackway as prescribed by the rules.

434 FIXED SIGNALS -

Aspect

Indication

a.



RED FLAG

Stop, track out of service. Call Dispatcher

Note: Clamped to the left hand running rail at stopping distance from both directions in advance of work areas.

b.

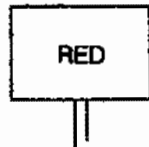


BLUE FLAG

Men working on cars, be governed by the Rules.

Note: Blue light may be attached to the car, instead of the flag staff.

c.



STOP SIGN

Stop, as prescribed by the rules.

d.



SLOW SIGN

Reduce speed, in advance of a restricted speed area.



RESUME SIGN

Resume speed, after operating cab passes sign following a restricted speed area.



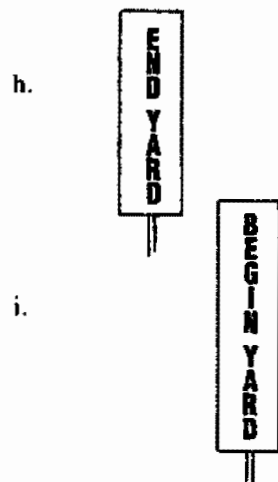
FOUL MARKER

Clearance point at the turnout into an adjacent track.



SPEED SIGN

Speed beyond the sign should not exceed that indicated. (Required speed will be displayed).



END YARD SIGN

Operate governed by the Test Control Dispatcher. (Located between the tracks governed).

BEGIN YARD SIGN

Operate governed by the Test Control Dispatcher. (Located between the tracks governed).



COAST SIGN

Begin coasting though section insulator at this sign.

k.



POWER SIGN

Power position may be resumed at this sign.

h.



HORN SIGN

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

YARD SWITCHES -

- 435 Yard switch facing and trailing movements are activated by post mounted pushbutton control boxes for power operated switches and hand throw mechanisms for manually operated switches when authorized by the Test Control Dispatcher.
- 436 Operator must contact the Test Control Dispatcher for instructions if a dark unlock light is encountered on a control box.
- 437 Operator must not make facing or trailing movements through yard switches unless the switch points, properly fit the stock rail.

SECTION 5

OPERATING RULES

RAIL OPERATIONS -

- 500 Test Control Dispatchers will have absolute authority over all train movements and hi-rail equipment movements on all tracks within the yard and on the mainline.
- 501 Test Control Dispatchers and all other test personnel must be knowledgeable of these rules and procedures as well as emergency rules and procedures. Test Control Dispatchers must have a working knowledge of all LB-LA systems and facilities.
- 502 Only train or hi-rail equipment movements that have been approved and/or appear on the Track Allocation Notice will be permitted. (Test Operations Procedure No. 1.)
- 503 No train or hi-rail equipment shall be operated on the mainline without a written Train Order. Procedures for the issuance of Train Orders are covered by the Test Operations Procedure No. 3.
- 504 When a train is to be operated on the mainline the Test Control Dispatcher will establish a Test Block in accordance with Test Operations Procedure No. 4.
- 505 Rail vehicle movement must conform to Test Block Limits, time of expiration, mode of operation and other restrictions established on the Train Order.

506 Employees operating LRV's or other railborne equipment on rail lines and property must be:

- a. In possession of a valid current certificate of qualification for the type of equipment being operated and Employee Identification Cards;
- b. A student operator under the direct Supervision of a qualified Instructor or other Employee so designated.

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

FLARES AND TORPEDOES -

508 The Southern Pacific Transportation Company uses burning red flares as a signal for trains to stop. They also use torpedo devices which explode under the wheels of a car to warn Train Operators to be on the lookout for a flagman.

509 Train Operators observing a flare burning on or adjacent to their track must stop, notify the Test Control Dispatcher and follow his/her instructions.

510 An explosion of one or more torpedoes will alert Train Operators to operate at restricted speed and look ahead for a flagman for at least 2 miles and report immediately to the Test Control Dispatcher.

BLOCKING MASTER CONTROLLER -

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

OPERATOR RESPONSIBILITIES -

- 512 Operating Rules, Train Orders or train operating instructions may be examined by the Operator in the performance of duties while the train is stopped. No other reading material shall be allowed in train cabs.
- 513 Operators must observe the console display panel indications and report all malfunctions to the Test Control Dispatcher.
- 514 Prior to moving track equipment, car or train, Operators 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 Control Dispatcher.
- 515 Train Operators must not begin movement of a train on the mainline with broken control seals unless a written Clearance Card is obtained from the Test Control Dispatcher. (Test Operation Procedure No 12.)
- 516 Prior to operating car or train on the mainline Train Operators must perform a pre-departure inspection in accordance with Test Operation Procedure No. 5.

LOCKING CAB -

- 517 Doors and windows of inactive cabs must be closed and locked when a train is being used for testing or other demonstrations. Cab windows and door may be open when an Operator is occupying an active cab.
- 518 Operators must request permission from the Test Control Dispatcher when they are leaving the cab, reporting the estimated return time the location and the reason for leaving the train.

- a. When permitted to leave the cab, Operators must secure the train against moving, remove the master controller key and lock the cab door.
- b. If conditions require that the cab door remains unsecured, the Operator on returning will observe the position of the switches and controls in the cab before continued testing.

519 Operators must not allow unauthorized persons to ride in the cab. Persons authorized by the Test Control Dispatcher to be in the cab must not engage in unnecessary conversation or action which will distract the Operator from the proper performance of duties.

HEADLIGHT/TAIL LIGHTS -

520 Trains entering or operating on the mainline tracks must display white headlights and amber marker lights at the front and red tail lights and red marker lights at the rear with respect to the direction of travel.

521 Operators may use the high beam headlights only during night hours and must dim headlights to low beam when approaching on-coming trains, street traffic or when the safety of the public or employees so requires.

GRADE CROSSINGS -

522 When operating a train with cab signals disabled, grade crossings with automatic gates must be approached with caution; Operators must observe the position of the gates in advance of the grade crossing.

523 The train must be stopped before entering the grade crossing when the gates are not in the down position. The Operator must inform Test Control Dispatcher of the failed gate and proceed when permission is granted and when safe through the unprotected crossing or proceed with a flagperson when instructed.

524 No part of a train shall be allowed to stop in a public crossing or intersection at grade except in emergencies or for the purposes of performing specific Tests. If the train must occupy a crossing for longer than one minute for any reason, the Operator must notify the Test Control Dispatcher.

PUSHING/BACKING -

525 Cars or trains must not be pushed or backed unless the controls at the leading end are disabled. When necessary to push or back car(s) authorization is required from the Test Control Dispatcher. The Operator must have a Train Operator or Supervisor as a flagperson on the leading end of the car or train; the flagperson must watch the track, wayside signals and switches and constantly keep the Operator informed as to the distance of proceeding. If communications with the flagperson are lost, not understood or not complete the Operator must bring the train to a stop until communications are reestablished.

526 When pulling or pushing disabled rail cars, movements must be made not to exceed 10 mph.

527 Live (energized) car/cars maybe used to move dead (de-energized) car/cars with traction motors or brakes cutout, at a minimum one-to-one ratio. The maximum number of cars moved together must not exceed six (6) cars.

TEST OPERATION -

528 Train Operators may adhere to instructions from the Test Engineer on board the train regarding tests to be performed. A train Operator receiving instructions from the Test Engineer that are in conflict with the Rules and Procedures must stop the train and report the conflict to Test Control Dispatcher and follow his/her instructions.

TRACK IDENTIFICATION

529 Mainline Tracks are numbered as follows:

- a. Track 2 - Normal southbound track from downtown Los Angeles to downtown Long Beach.
- b. Track 1 - Normal northbound track from downtown Long Beach to downtown Los Angeles.

CHANGING DIRECTION -

530 The direction of movement on a main track must not be changed without authorization from the Test Control Dispatcher.

531 Before establishing opposing movements, the Test Control Dispatcher must insure the intended movement is properly understood by all Train Operators involved.

YARD MOVEMENT -

532 the Test Control Dispatcher will give instructions for yard movements.

533 Test Control Dispatcher must insure yard movements do not interfere with trains entering the yard from the main track.

534 Operators of pull-in and pull-out trains must stop at the Yard Sign and request instructions from the Test Control Dispatcher.

535 Side mirrors must be retracted and doors, windows and vents must be closed on all cars before entering the car washer.

STORAGE OF CAR(S) -

536 All cars being stored must be properly secured with parking brakes applied, keys removed and 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, as appropriate.

537 Operators storing trains in the yard must stop with couplers approximately ten (10) feet from those of other trains.

538 Operators must never leave cars standing in contact with a bumping post.

539 Switches, tracks, roadways and walkways must not be fouled when storing cars or equipment.

COUPLING/UNCOUPLING -

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

541 Operators must use care in coupling and uncoupling cars on mainline or yard tracks to avoid injury or damage.

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

543 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.

544 Personnel must never stand between car/cars that are being coupled or uncoupled.

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

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

ENTERING/LEAVING SHOPS -

546 Operator must conduct an LRV inside and outside pre-departure inspection before leaving the shop or other storage location for testing as per Test Operations Procedure No. 11.

547 Within the confines of the maintenance shop, train movements are governed by the Maintenance Supervisor.

548 Employees must ground inspect the car or train and inform other employees in the area before moving out of the shop.

549 Shop doors must be fully opened and a safety stop must be made at the shop door before operating cars or equipment into or out of the shop buildings.

550 Before moving a train forward entering or leaving the shop, Operators must sound the gong as prescribed by the rules.

551 Operators must notify the Test Control Dispatcher before moving the train out of the shop.

SWEEP TRAIN -

552 The first train to operate over any section of the mainline right-of-way each day (or after an interruption of service) must be operated at restricted speed. The Operator must be especially alert and stop short of: trespasser or obstructions on the track, damage to track, overhead wire, wayside signals or crossing gates, improperly lined switches, or any condition which could be hazardous to the operation of trains.

TRACTION POWER -

553 Only the Test Control Dispatcher can authorize traction power for the Overhead Catenary System to be deenergized or energized. In accordance with Test Operation Procedure No. 7.

554 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 attendant on duty for the duration of the test. The attendant must be knowledgeable on the operations of the substation and follow instructions from the Test Control Dispatcher.

555 A lock or approved blocking device and a DO NOT OPERATE Tag must be applied to breakers or pushbuttons governing the power supply to track sections de-energized for work crews, defective equipment or other purpose.

556 A pushbutton or breaker with a lock or approved blocking device and DO NOT OPERATE Tag applied must not be operated.

PROTECTION OF PERSONNEL ON TRACKS -

- 557 Personnel engaged in work activities (approved on the Track Allocation Notice) on or about the tracks must be provided with flag protection.
- 558 Work on or about the tracks on designated Red Tag areas must not be performed without authorization from the Test Control Dispatcher as per Test Operations Procedure No. 1.
- 559 Personnel assigned flag duty must wear high-visibility protective equipment. Flagperson must perform no other duties even momentarily. They must not leave their posts until so instructed by the proper authority.
- 560 Employee working as flagperson must have the prescribed color flagging appliances and keep them in good working order and ready for immediate use;

TEMPORARY SPEED RESTRICTION -

- 561 Speed limit signs or flags will be placed at a safe braking distance in advance of restricted work areas.
- 562 Flagperson will take up a position at least 200 feet in approach to the work crew where they can be clearly seen by approaching Train Operators. Only the flagperson is authorized to give a "Proceed" signal to the Train Operator.
- 563 Lighted lamps of prescribed color will be used in the underground section of the system, also above ground between sunset and sunrise.
- 564 Flags of prescribed color will be used between sunrise and sunset on the above ground sections of the system. When vision is obscured, lighted lamps will be used with the flags.

565 When operating in flag protected track areas the Train Operator must:

- a. Approach the designated work area at restricted speed prepared to stop. At first sight of a flagperson in the track area, the Operator acknowledge's the presence of the flagperson by sounding a 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 Operator acknowledge's by sounding the horn and proceed with caution at restricted speed as prescribed by the rules.

PROTECTION OF PERSONS WORKING ON CAR(S) -

566 Blue Flag or Blue Light protection (as in Test Operations Procedure No. 6) must be provided on yard storage or mainline tracks when employees are working in, on or about rail vehicles.

567 Blue flags or blue lights displayed at both ends of a car/cars, are not to be moved. Other car/cars must not be placed where they obstruct the blue flag/lights without first warning the employees.

568 Flagperson must place blue flags/lights where they are plainly visible. Blue flags will be used by day. Blue light will be used whenever visibility indicates and may be used with blue flags.

569 Employees on car/cars protected by blue flags/lights must verbally be notified when the blue flags/lights have been displayed and when removed.

570 Blue flags/lights must not be removed until all employees are clear of the car/ cars.

571 Only the flagperson displaying the blue flags/lights can remove them.

TRAIN HORN OR GONG -

572 Operators must sound the authorized horn or gong as required by operating conditions.

573 Unnecessary horn or gong sounds are prohibited.

574 Defective horn or gong equipment must be reported to the Test Control Dispatcher immediately.

575 Authorized audible horn or gong sounds are illustrated by:

- a. o = short sound
- b. ____ = long sound

576 Authorized Audible Sounds:

Audible Sounds

Indication

A. oo Two short sounds

Before moving forward while in the yard and shop limits, also to answer a "proceed" or "stop" hand signal.

- | | |
|------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| B. ooo Three short sounds | Before moving back-ward or uncoupling car/ cars, also to answer a "back-up" hand signal. |
| C. oooo Four short sounds | Request for a hand signal. |
| D. __ __ Two long sounds | Warning to persons on or near the tracks. |
| E. __ __ o __ Two long, one short and one long sounds | Warning in approach to public crossing and at grade protected railroad crossing protection devices. (Prolonged or repeated until crossing is occupied). |

SPEED -

- 577 Speed signs will be placed at a safe braking distance in advance of restricted speed areas.
- 578 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.
- 579 Maximum speed on a mainline track must not exceed that prescribed by the Rules for that track.
- 580 Speed of any diverging movement through mainline switches must not exceed five (5) miles per hour, when operating manual control.

581 Work trains must operate at a speed authorized by the Test Control Dispatcher on a main track.

582 No part of the train must exceed the authorized speed through a restricted work area. Train Operator will be governed by the prescribed rules.

SECTION INSULATOR -

583 Signs will be placed in advance of a section insulator and beyond the insulator.

584 Train Operators must not power the LRV through the section insulator in the yard or mainline tracks.

SECTION 6

COMMUNICATIONS

- 600 Employees using the radio must be certain a clear channel is available except in an emergency. They must identify by train number or job title, whichever is applicable. Messages may be repeated, for a proper understanding.
- 601 Operators will turn on the portable radio when leaving the active cab to continue communications. Disabled radio equipment must be reported to the Test Control Dispatcher immediately.
- 602 All radio transmissions must comply with Federal Communications Commission rules.
- 603 The Test Control Dispatcher will be the base for all communication 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 an 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 Control Dispatcher. A communication in progress must not be interrupted except in emergency.
- 609 Employees must insure radios used during their shift are continuously turned on and set at sufficient volume to receive all transmissions clearly.
- 610 If the operator loses radio communications, he/she must stop and report promptly to the Test Control Dispatcher by alternate means.
- 611 The Test Control Dispatcher will monitor and record communications from the test track area concerning tests, runs, inspections, emergencies and requests pertaining to Test Operations.
- 612 Use of any sort of audio or visual device while on duty except for authorized devices is prohibited.

SECTION 7

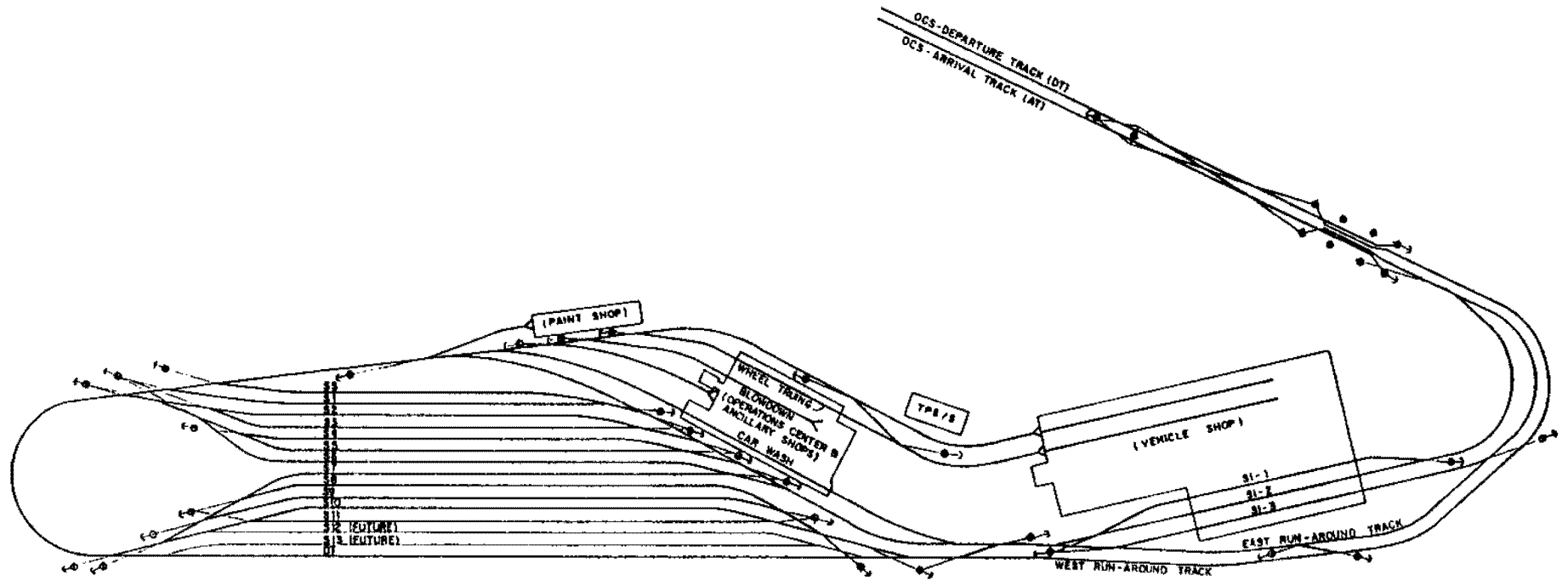
INSTRUCTIONS

SPEED -

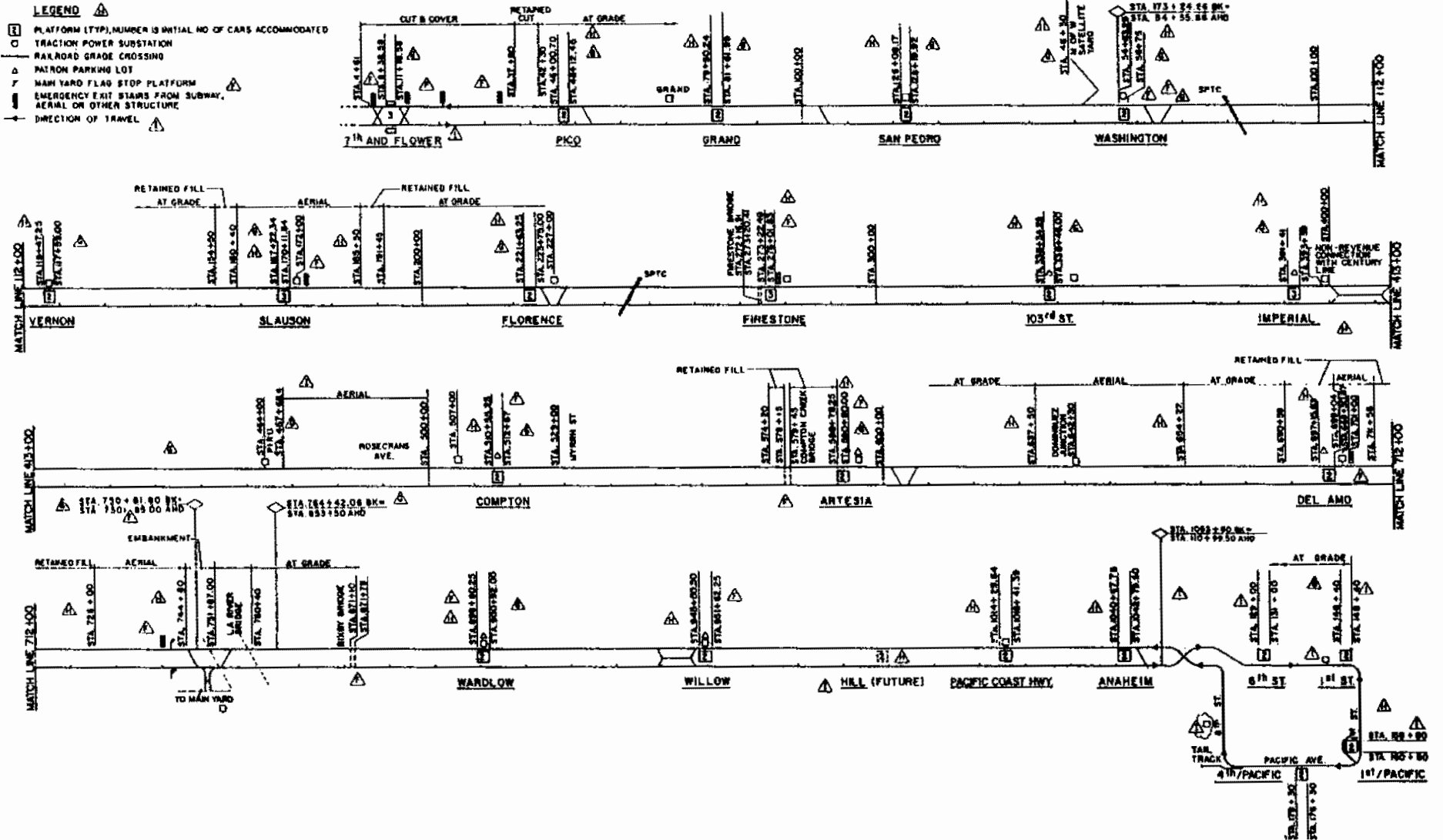
700 Unless otherwise indicated with a more restrictive speed, maximum allowable train speeds are as follows:

- a. 5 mph on shop tracks;
- b. 5 mph on 90 degree curves embedded in city streets;
- c. 5 mph on non-revenue connection track at Imperial;
- d. 10 mph in yard, tail track, pocket track, or other auxiliary track;
- e. 35 mph on tracks embedded in city streets;
- f. 55 mph mainline Mid-Corridor;
- g. 25 mph run-through a station platform;

YARD AND SHOPS



MAINLINE TRACK DIAGRAM



RARAP.MAN
JM

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SECTION 8

MAINTENANCE SAFETY RULES

- 800 Approved safety shoes must be worn at all times. Approved head protection must be worn in designated areas.
- 801 Wear appropriate safety equipment, hard hats, shoes, glasses, face shields, ear protection, aprons, etc., where required.
- 802 Flammable materials, caustics, acids and solvents must be stored in designated areas and in approved containers. They must not be moved or carried in any manner that would create a hazard.
- 803 Where welding, cutting or burning operations are performed, proper fire fighting equipment must be readily available.
- 804 Employees must guard against fires while working in restricted areas or at any location where potential fire hazard exists.
- 805 Use of gasoline or other volatile flammables to start or encourage fires is prohibited.
- 806 Smoking or open flame is prohibited in designated restricted areas.
- 807 Do not make unapproved or unauthorized electrical repairs.
- 808 Use properly insulated tools and equipment for work on or near high or low voltage electrical equipment.

- 809 Keep doors or covers of electrical apparatus closed and secured unless making required inspections and repairs.
- 810 Secure wire stranded cable before cutting to prevent ends from unraveling, seperating or whipping.
- 811 Inspect portable extension lights before use. Use non-metallic lamp guards when there is a possibility of contact with exposed electrical circuits.
- 812 Do not clean or refill storage batteries while the batteries are on charge.
- 813 When performing any type of work, approved tools must be used. No unauthorized alterations or modifications will be made to any tool.
- 814 Only authorized Employees will be permitted to operate power tools or machinery.
- 815 Employees must inspect tools and equipment for defects before using and if found defective, they must not be used.
- 816 Plunger type pneumatic tools must not be operated unless equipped with safety snap retainers.
- 817 Tools, equipment and materials, when not in use, must be stored in designated areas in a manner not to constitute a hazard.
- 818 Tools must not be carried in an unsafe manner or in a way which might create a hazard.
- 819 Employees must stay clear of tools operated by other persons. Those using tools must be sure that the work area is clear.

- 820 When using tools requiring leverage, firm footing must be maintained or body braced to prevent fall or strain. Body must be kept clear of tools to avoid being struck.
- 821 Pointed tools and those with a cutting edge may be stored or carried on person only in a protective sheath or when otherwise adequately protected.
- 822 Guards must not be tampered with or removed from any tools or machinery so equipped unless repairs are necessary and then only if tools are made inoperative.
- 823 Power driven tools must not be laid down while activated and must not be placed where they can be accidentally started.
- 824 Use all tools and equipment only in the manner intended and for the purpose for which they were designed.
- 825 Place shovel, fork, rake or any other such pointed or sharp edged tool with point or edge down or against the wall when not in use.
- 826 Use of the finger to determine if a hole is in proper alignment is prohibited. Use drift pin or other suitable tool.
- 827 Perform a visual inspection and test prior to operating powered equipment and machinery. Defective equipment shall be Tagged and not operated until it is in safe condition.
- 828 A lock or DO NOT OPERATE TAG placed on switch, valve or machine controls for the protection of employees must be removed only by the person who placed it in position and then only after verification that all employees are in the clear. Machine, switch, valve or other apparatus with DO NOT OPERATE TAG attached must not be operated.

- 829 Be sure that power supply control switch is in the "OFF" position, and place "DO NOT OPERATE" warning tag on the control switch before making repairs to electrical apparatus or equipment.
- 830 Do not wear jewelry, ties or loose clothing around moving machinery or when handling heavy materials.
- 831 Employees must not ride, sit on or lean against shop machinery.
- 832 Unauthorized Employees are not permitted inside of a safety railing while machinery is in motion.
- 833 Do not use compressed air to blow dirt off your clothes or body.
- 834 Use only authorized cleaning solvents approved for specific applications.
- 835 Continued contact of the skin with oils, greases, solvents, alkalis, acids, cleaning materials, etc. is forbidden.
- 836 Employees must not clean any part of their bodies with gasoline, solvents or with oily or dirty rags.
- 837 Employees must use only approved hand creams and soap for cleaning hands and face.
- 838 Employees must use approved protective hand creams and plastic-coated gloves on all jobs where there is possibility of exposure to oils, greases, solvents and alkaline materials.
- 839 Where gloves are permitted or required, employees must not wear oil soaked, dirty, torn, frayed or otherwise hazardous gloves.

- 840 Employees must not wear clothing soaked with oils, grease or solvents.
- 841 Test for toxic material, explosive gases or oxygen deficiencies before entering manholes, sewer pits or confined spaces. Initiate procedures to make areas safe when contaminated atmospheres are encountered.
- 842 Employees must use only approved standees, ladders, platforms or scaffolds and must use them only for the purpose for which they are intended. This equipment must be inspected by employee before using and if found defective, must be reported to the Supervisor.
- 843 When placing ladders, standees, scaffolds or platforms, Employees must be sure that the legs are placed on firm footing and secured against movement. Base of ladder should be one-quarter (1/4) of height away from object against which top is placed and ladder must be equipped with proper anti-slip device.
- 844 Scaffold boards must be placed or fastened on standees to ensure against sliding or coming off supports. Do not allow ends to extend beyond supports to such degree, boards can upend when stepped on.
- 845 Folding ladders may be used only when authorized by a Supervisor.
- 846 The use of metal ladders or metal scaffolding is prohibited where employees are working and are exposed to possible contact with electric circuits.
- 847 More than one person on a ladder is prohibited.
- 848 Employees using a ladder where persons or vehicles movements are apt to collide with it must assure themselves of adequate protection.

- 849 When working on LRV's it is required that step boxes or ladders must be used to provide safe entrance and exit.
- 850 When getting on or off equipment or ladder Employees must assure themselves of safe footing and know that they are clear of all obstructions, including rocks and other objects.
- 851 Keep alert for falling tools or objects when working in an area where others are working overhead.
- 852 Do not jump across, into or out of pits, trenches or other openings.
- 853 Barricade the work area and take precautionary measures to protect persons below when working on elevated locations.
- 854 Spilled oil or grease must be removed promptly.
- 855 Before jacking up end of rolling equipment, wheels on opposite end of equipment must be blocked in each direction with approved wheel chocks.
- 856 A piece of sound wood, not over one inch thick, must be inserted between jack head and load when jacking against metal.
- 857 Employees must not go under any raised equipment unless it is properly secured to prevent it from falling.
- 858 Unless raised on portable electric screw type jacks or hoists, equipment must not be left standing on jacks stands.
- 859 Do not stand or work under overhead load on cranes.
- 860 Employees must not ride on any load being handled by a crane or other mobile equipment.

- 861 Crane operators must not move loads unless they are sure that all persons are in the clear.
- 862 When lifting objects hold the load as close to your body as possible and lift with your legs.
- 863 When moving material or equipment by hand, employee must push whenever practicable and maintain control to the stopping point.
- 864 When placing material on or removing it from a pile, it must be handled so that material will not dislodge or fall. When stacking or loading material, it must be properly secured.
- 865 Keep hands, feet and all other parts of the body in a position where they cannot be struck by, caught under or between materials, tools or equipment.
- 866 Promptly remove nails, screws, hooks or loose bands from materials that are to be stored, transported or reused.

HI-RAIL VEHICLES

- 867 Hi-rail maintenance vehicles must not enter track areas or be set on the track without authorization from the Test Control Dispatcher.
- 868 Hi-rail maintenance vehicles must be set on/off only at grade crossings or other embedded track locations.
- 869 Hi-rail maintenance vehicles must not exceed five (5) mph when operating over turnouts, crossings or other special trackwork.
- 870 When operating hi-rail vehicles on tracks headlights and roof warning flasher must be illuminated at all times.
- 871 Operating on tracks requires a different driving technique than when on the highway. Braking and accelerating on tracks must be done evenly to minimize slip/slide on oily or wet rails. Exercise caution when stopping the vehicle.
- 872 When operating maintenance vehicles and equipment on highways, exercise extreme care not to drag guide wheel attachments on curbs, driveways, rails, etc. Enter driveways diagonally where possible. Do not bump curbs or stopping blocks in parking lots.
- 873 Before operating any vehicle or equipment, operators must inspect the equipment and if found unsafe, it must be reported. The vehicle must not be put in service until it has been made safe.
- 874 The operation of hi-rail maintenance vehicles on tracks must be in accordance with all appropriate rules and instructions applicable to train operations.
- 875 Hi-rail maintenance vehicles must not be depended on to actuate block occupancy, interlocking signals or highway crossing signals. They must not be considered under the protection of such devices. and must be operated under an absolute block.

876 Safety features and other equipment (such as outriggers and grounding clamps) must be properly used when working with hi-rail vehicles.

**TEST OPERATIONS PROCEDURES
FOR
CONDUCTING TESTING
OF
THE LA-LB LRT**

Joe Mesa Manager for Test Operations

**RARAP.MAN
JM**

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04.14.9

TEST OPERATIONS PROCEDURE NO. 1

I. TITLE: TRACK ALLOCATION NOTICE

II. PURPOSE

To expedite the safe completion of the Light Rail System it is essential that construction operations and test activities are completely coordinated. Following this procedure a weekly schedule will be developed in the form of a Notice which allows both construction/installation operations and testing activities to be accomplished safely and efficiently.

III. REQUIREMENTS

1. Red Tag Areas will be defined weekly (Monday) and distributed to all RE's, Contractors, LACTC, SCRTD and TRANSCAL employees engaged in construction, equipment installation or testing activities on the LB-LA LRT.
2. Contractors or others desiring to perform any work or tests in the Red Tag Areas must submit track occupancy and access requirements for the Red Tag Area by Wednesday 5:00 P.M. and attend the weekly Track Allocation Meeting on Thursday at 10:00 A.M.

IV. PROCEDURES AND RESPONSIBILITIES

RESPONSIBILITY

TASK

Test Operations - Manager

1. Define and distribute to all contractors & System RE's the limits of the Red Tag areas on Monday of every week, for the following week.

RESPONSIBILITY

TASK

Facility RE's, Systemwide RE's,
Integrated Test Personnel, LACTC
Rail Systems Personnel

2. Submit track occupancy and access requirements no later than Wednesday 5:00 P.M. of the week prior to need. These must be submitted in writing. Requirements are to be defined by Civil stationing limits, Northbound Track No. 1 or Southbound Track No. 2, time of day and overhead power needs for each day. A proper request form must be used for this purpose.

Test Manager/Test Coordinator

3. Prepare the composite schedule of all track allocation requirements on Thursday using the Daily Track Allocation Notice, one Notice sheet for each day of the week.

Test Manager/Test Coordinator

4. Discuss conflicting issues in track occupancy requirements with those RE's and LACTC elements having specific needs. Attempt to resolve any conflict on a mutually satisfactory basis.

Test Manager/Test Coordinator

5. Identify unresolved conflicts in needs for track in the Daily Notice sheets for resolution at a Thursday 10:00 A.M. scheduling meeting should one be required and refer all unresolved conflicts to The Test Operations Manager for resolution.

RESPONSIBILITY

TASK

Attendees to Thursday Track Allocation Meeting

6. Resolve any remaining conflicts and achieve a consensus Track Allocation Notice for each day of the following week.

Test Manager/Test Coordinator

7. Complete final Track Allocation Notice for each day and submit for reproduction and distribution no later than 1200 hours on Fri-day.

Clerk

8. Develop a distribution list as required.

Test Coordinator

9. Reproduce and deliver copies of the Track Allocation Notice for the week to the agreed upon distribution.

Test Coordinator

10. Prepare Red Tags for the following week, based on the Track Allocation Notice.

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 overhead wire.

III. REQUIREMENTS:

Contractors and others requiring access to Red Tag Areas for any activity must:

1. Receive permission at the Track Allocation Meeting to perform the activity and be included in the Track Allocation Notice.
2. Designate an individual responsible for picking up and returning Red Tags.
3. The designated individual must either have a portable radio or other means to establish communications with The Test Coordinator.

IV. RESPONSIBILITIES

1. **TRANSCAL Test Coordinator:**
 - 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.**
 - d. **Maintain a visual display board showing all Red Tags issued.**
 - e. **Clear Red Tag Log and display board as Tags are returned.**
 - f. **Maintain contact with the Test Control Dispatcher and Security on the status of the Red Tags.**

2. **Contractor, LACTC, TRANSCAL Personnel:**
 - a. **Obtain Red Tags from The Test Coordinator.**
 - b. **Distribute Red Tags to workers involved in activity.**
 - c. **Return Red Tags to The Test Coordinator when all activity is completed.**

3. **Test Control Dispatcher:**
 - a. **Maintain contact with The Test Coordinator.**
 - b. **Maintain contact with Security Personnel.**
 - c. **Order Power On/Off from the Traction Power Attendants.**
 - d. **Write Train Orders, instruct and supervise Operators on test trains.**

V. PROCEDURE:

1. Contractors and others that have been scheduled to work in The Red Tag Area (Track Allocation Notice) will have the designated individual in charge of the work party procure Red Tags from the The Test Coordinator prior to receiving access to the area. One half of The Red Tags will be issued for each person in the work party to the individual in charge. The other half of The Red Tags will be held by The Test Coordinator at the Red Tag Desk.
2. When the scheduled work has been completed each day, the individual in charge of the work party will return all halves of The Red Tags to the Test Coordinator. After all The Red Tags distributed that day are matched, The Test Coordinator will notify the Test Control Dispatcher that train testing and/or energizing the overhead catenary system can resume.
3. Work crews in the trackway are subject to challenge by LACTC Security and Safety Personnel. When challenged, they must produce the Red Tag, Train Order, or a purple badge Safe Clearance Identification (Note) 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 purple badge Safe Clearances Identification which will allow them to be in the Red Tag Areas without a Red Tag. Those individuals will be identified by the Test Operations Manager and must keep the purple badge Safe Clearance Identification in their possession and present it to Security or Safety Personnel on 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 demark the limits of the work area. If he/she is not familiar with the limits, then he/she must request an escort from the Test Coordinator to guide the work party to the work area and demark its limits.

5. It is mandatory that the designated individual secure Red Tags and return those tags to The Red Tag Test Coordinator promptly when the work is completed. Failure to return a Red Tag will seriously disrupt work and test schedules. It shall be LACTC policy that for the individual's failure to obtain or return a Red Tag promptly shall be cause for discipline up to and including removal from the project.

TEST OPERATIONS PROCEDURE NO. 3

I. TITLE: TRAIN ORDERS.

II. PURPOSE:

Train Orders are issued in written form by the Test Control Dispatcher to protect and govern movements of any unscheduled vehicle entering upon the mainline. All testing movements are unscheduled therefore require a written Train Order. Train Orders protect 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 vehicle can move on the mainline without a written Train Order.
2. Train Orders must be issued in the proper format.
3. Train Orders must be made in duplicate and signed by the vehicle Operator and the Test Control Dispatcher.
4. One copy of the Train Order must be presented to the vehicle Operator and one copy must be retained for Test Control files.
5. The vehicle Operator must read and understand the Train Order issued and remain within the specific portion of track governed by the Order. If the Operator of a vehicle does not fully understand the Order, he/she must contact the Dispatcher for clarification.

6. Once a Train Order is in effect, it will continue in effect until fulfilled, superseded, or annulled.

IV. PROCEDURES:

1. Test Control Dispatchers will know from their copy of the Track Allocation Notice and from communications with the Test Coordinator, the mainline moves that will be made during his/her tour of duty. Test Control Dispatchers will prepare Train Orders for each move and sign them.
2. Operators of vehicles will after reporting for duty, pick up their Train Orders at the Test Control office. They must read, and sign the Train Orders and enter readback time, on the form.
3. When it is required due to the distance from Test Control to issue Train Orders via radio or telephone the following procedure will be followed:
 - a. Vehicle Operator will receive the order from Test Control Dispatcher via radio or telephone and write it on a Train Order form while the train is stopped.
 - b. Vehicle Operator will read back Train Order satisfactorily to the Test Control Dispatcher.
 - c. If Train Order is repeated correctly, the Test Control Dispatcher will sign the Order and give the Operator the following information:

Order No. _____

Signed by (Test Control Dispatchers Name)

At (Time)

- d. Vehicle Operator shall write the above on his copy of the order.

TEST OPERATIONS PROCEDURE NO. 4

I. TITLE: TEST BLOCK OPERATION

II. PURPOSE:

Because of the nature of the integrated test activity while construction and installation operations are still proceeding on the Light Rail Line, a Test Block is to be established every time vehicle testing is performed on the right-of-way, to protect the safety of the test crew as well as other employees.

III. REQUIREMENT:

1. Test Blocks will be Absolute Blocks.
2. Test Block limits 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.

IV. PROCEDURES:

1. Prior to testing the Test Coordinator will have security or safety personnel inspect the test area to assure there are no obvious safety hazards and will take appropriate actions to correct hazards before establishing the Test Block. The Test Coordinator will determine if Flagmen are required and will provide personnel if needed. The Test Control Dispatcher will be notified.

2. The Test Train Operator upon entering the Test Block will place a red flag (red light at night) at the entering end of the block and then walk back a distance of at least 200' and place another red flag or red light. The distance should be increased if curves or other objects obstruct the view of a train in the test block from an approaching vehicle on the track.
3. Train Operator will then operate the train to other end of the block at restricted speed and follow the same procedure as indicated above. Train Operator will not operate the test train beyond the Test Block limit indicated in his Train Order but will walk at least 200' beyond the limit to place second red flag or red light.
4. Test Control Dispatcher will set up an Absolute Block for the Test Block. If interlocking signals are operational, Test Control Dispatcher will have both interlocking signals in approach to the Test Block set at "STOP". (Red over Red).
5. Non-operational fixed signals within the Test Block will be bagged.
6. Train movement(s) and test speed within the Test Block will be specified in the Train Order.
7. If the Test Block specified in the Train Order includes both main tracks, Train Operator will follow procedures specified on 2 and 3 above for both main tracks.
8. Upon completion of testing, Train Operator will notify and follow Test Control Dispatchers instructions.
9. Before leaving the Test Block the Train Operator will pick-up red flags or red lights.

If it becomes necessary in the event of an emergency or malfunction of the equipment to send a second train into the Test Block, the following procedure will be followed:

The Test Control Dispatcher Will:

- a. Determine the exact location of the first train (Test Train in the Test Block). Instruct the Train Operator to remain standing and not move the train, the Test Block Train Order will be cancelled.
- b. If the Rescue Train used is a Train Operating under a Train Order it must be cancelled prior to receiving the Rescue Train Order.
- c. Issue the Rescue Train Operator a Train Order which will include the first Test Train's location, restriction and special instruction.
- d. Order a Permissive Block for the second Train Operator (Rescue Train) beginning from the present location and move directly and progressively forward to the first train (Test Train).
- e. Permit the second Train Operator (Rescue Train) to proceed only after both Train Operators have satisfactorily repeated their instructions to the Test Control Dispatcher.

TEST OPERATIONS PROCEDURE NO. 5

I. TITLE: PRE-DEPARTURE INSPECTION

II. PURPOSE:

During the Test Operations period, transit vehicles are subject to modifications, retrofits or other work involving many Contractors and Subcontractors. The number and variety of people working on the vehicles increases the possibility of overlooking potential hazards to the safety of the Test Crew or to the 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 train from yard storage tracks, shop buildings or mainline.

IV. PROCEDURES:

1. Perform a walk-around inspection. Check the following:
 - a. There are no obstructions or hanging equipment.
 - b. All exterior safety appliances are intact.
 - c. Couplers and electrical heads are not damaged.
 - d. All electrical equipment boxes are closed and skirts are secured.
 - e. There are no dent/scratches on the exterior.

- f. Exterior headlights, tail light and marker lights are on.
- g. 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 Test Control Dispatcher and follow his/her instructions.
- h. Check for wheel chocks.

Inside the 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 Control Dispatcher and follow his/her instructions. Check for proper clearance forms.
- b. Insure that all doors operate properly.
- c. Insure that brakes set and release.
- d. Insure the horns, cab lights, windshield wipers and rear view mirror are operating properly.
- e. Perform a radio test by contacting the Test Control Dispatcher.
- f. Make a running brake test before departure.
- g. Report any problems to the Test Control Dispatcher.
- h. Insure 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 Control Dispatcher.
- j. If cab signals are operational and being used, a predeparture cab signal test will be done.

TEST OPERATIONS PROCEDURE NO. 6

I. TITLE: BLUE FLAG/BLUE LIGHT PROCEDURE

II. PURPOSE:

To provide protection for employees working on, under or about cars in the yard storage tracks or mainline.

III. REQUIREMENTS:

1. Employees performing work on, under or about cars 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 the switch or enter that track. The protected car(s) must not be coupled to or moved.

IV. PROCEDURES:

Employees intending to perform work on, under or about cars in the yard storage tracks or mainline must follow this procedure:

1. The employee in charge must contact Test Control Dispatcher and inform him/her of the work to be performed including details such as name, track number/location and nature of the work.

2. If Test Control Dispatcher approves, the request must be indicated in his/her records. Inform the employee that he/she is to perform this work under blue flag/blue light protection.
3. Employee in charge of the work must place blue flags (if during daylight hours) or blue light (during night) at each end of the track where the cars are located.
4. Each employee working on the train will then place DO NOT OPERATE tags with their name on the master controller handle at each end of the train.
5. Employee in charge will notify the Test Control Dispatcher that the proper flags/lights and tags are in place. The Test Control Dispatcher will then authorize the work to begin.
6. Only the individual placing his DO NOT OPERATE tag on the master controller handle is authorized to remove it.
7. Only the employee in charge is authorized to remove the blue flags/lights after ascertaining that all the DO NOT OPERATE tags have been removed from the master controller handles.
8. Notify Test Control Dispatcher when work is finished and all tags, flags or lights are removed

Blue Flag/Blue Light protection when within the limits of a Test Block are not required for personnel doing work about or under a vehicle on the mainline during the conduct of testing. 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. Individual performing work will inform Train Operator of work he/she is about to perform.
2. Operator will key to local on the console prior to individual going outside to work.
3. The same individual 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 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 traction power for the Overhead Catenary System (OCS) will be de-energized when necessary to perform any construction or maintenance activity where the potential exists for personal contact with the overhead wire.
2. The request for power removal and re-energization must be made in writing to the Test Control Dispatcher.
3. Open breakers at the substation must be tagged and locked or blocked by the substation attendant performing the activity.
4. Test Control Dispatcher will maintain written records of power outages, requests, and maintain a board indicating which sections are energized including the status of all substation breakers for the Red Tag Area being controlled.

IV. PROCEDURES

1. The request for de-energizing the OCS 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 the OCS in a certain section will be made through the Test Control Dispatcher. The request shall be made in writing in advance of the outage.
2. It will be the Test Control Dispatchers decision to grant the request, if it is not scheduled as part of the weekly Track Allocation Notice. The Test Control Dispatcher will provide to have designated personnel operate the substation should the request be granted.
3. The Red 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.
4. After obtaining the Red Tag but prior to de-energizing the section in question the designated individual will enter the right-of-way to verify the operation of his/her voltage measuring device against the live catenary wire to ascertain that the device is working properly. After completing the test, the designated individual will call Test Control Dispatcher and request a power removal.
5. Test Control Dispatcher will initiate the outage by contacting the substation attendant and requesting that the particular breakers feeding this section be opened, locked out and Tagged DO NOT OPERATE. Test Control Dispatcher will record the date and time the power removal was completed and the name of the substation attendant performing the work. Test Control Dispatcher will also make the necessary changes to his/her power status board.

6. Once the outage is completed through the Test Control Dispatcher the individual that requested the outage will test the OCS with the voltage tester device to confirm that the OCS is in fact de-energized. The individual will apply a ground cable between OCS and running rail. The installation of the ground cable must be done without delay to minimize a possibility of personal contact with the OCS. The individual can then proceed with his/her work.
7. The designated individual upon completing the work will verify that all personnel and equipment are clear of the track and that the ground cable has been removed. The individual will then return his Red Tags as per Test Operations Procedure No. 2.
8. When Test Control Dispatcher is in possession of the Red Tags, he/she will make a general announcement to contact Operators on every channel that power is to be restored on a particular track section. Test Control Dispatcher will then order the substation attendant to restore power. At the time of restoration, the designated individual and substation attendants name will be recorded. Test Control Dispatcher will make the necessary changes to the power status board.

TEST OPERATIONS PROCEDURE NO. 8

I. TITLE: HAND CRANKING SWITCHES AND HAND THROWING SWITCHES

II. PURPOSE:

During 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 to the following procedures in order to prevent derailments and damage to switches.

III. REQUIREMENTS

1. Operators must observe switch points and are responsible for checking switch point alignment.
2. When operators are required to operate switches by hand, they must do so following the procedures outlined in the next section.

IV. PROCEDURES:

1. Track switch points will be considered properly aligned by qualified personnel when the following is performed:
 - A. Switch points are positioned either normal or reverse as instructed by Test Control.
 - B. Switch point must be positioned to fit properly against the stock rail to allow the wheels to pass over the switch point.

- C. Notify Test Control Dispatcher if switch point are found to stand open more than 3/16".
2. When hand cranking or hand throwing switches the following will be performed:
- a) 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 the rail with the wheel nut on the field side of the stock rail.
 - b) The open switch point must be **BLOCKED** with wooden block(s).
 - c) If the switch points cannot be closed to 3/16" or less but can be done so by the use of a clamp it need not be removed from service but must be reported to the Test Control Dispatcher who will inform maintenance.
 - d) If the switch cannot be closed to 3/16" or less, it must be reported to Test Control Dispatcher to be taken **OUT OF SERVICE.** and protected as prescribed by the rules.

TEST OPERATIONS PROCEDURE NO. 2

I. TITLE: PERSONNEL IDENTIFICATION BADGE

II. PURPOSE:

Because of the numerous safety hazards involved in the Test Operations process and for the security personnel to be able to better control the access to Light Rail System facilities, a Personnel Identification Badge will be issued to all LACTC/SCRTD/TRANSCAL and Contractor and Subcontractor Personnel.

III. REQUIREMENT:

Personnel working or visiting the Light Rail System facilities 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 Light Rail System. The list will include the persons name, company and occupation. Submit the list to the Test Operations Manager's Office.
2. LACTC, SCRTD and TRANSCAL will also submit a list to the Test Operations Manager including the names and occupations of those employees that are likely to visit the Light Rail Facilities frequently in the performance of their duties.

3. Test Operations Manager's office will supply Personnel Identification Badges for all required employees. The Badges will be color coded as follows:
 - o Blue Badges: LACTC, TRANSCAL
 - o Orange Badges: SCRTD
 - o Green Badges: Contractors
 - o Yellow Badges: Visitors
4. New employees starting after the initial issue of badges must obtain their badge from the Test Operations Manager's Office.
5. Identification Badges are in no way a substitute for Red Tags as explained in the Test Operations Procedure No. 2. To be able to work in the Red Tag Areas employee must have a Red Tag in addition to Personnel Identification Badge.

TEST OPERATIONS PROCEDURE NO. 10

I. TITLE: VEHICLE OPERATION IN YARD

II PURPOSE:

To provide guidelines to be followed by Train Operators for operating in the yard.

III. REQUIREMENTS:

1. All yard movements will be governed by the Test Control Dispatcher.
2. All yard movements will be performed in the close-in mode of operation.

IV. PROCEDURES:

1. Train operators will receive instructions from the Test Control Dispatcher as to the car numbers and the moves that will be made in the yard.
2. No yard moves will be made without the knowledge of the Test Control Dispatcher.
3. All yard moves will be made exactly as instructed by the Test Control Dispatcher.

4. When operating in the yard, Train Operators must be particularly alert to the following conditions:
 - Broken or sagging catenary
 - Obstacles or tripping hazards in the ballast and along the track.
 - Persons on foot or maintenance vehicles particularly in the areas of Maintenance Building and the vehicle wash.
 - Blue Flag/Blue Light protected tracks/vehicles
 - Persons or vehicles entering or leaving yard
 - Position of all switch points and aspects of all signals.
5. Provide a proper horn sound prior to initiating a train movement in the yard.
6. Never crowd switch points, stop so that you will not block the vision of the switch points by the front overhang of the LRV.
7. Be aware of other train movements in the area and do not move beyond the fouling point if another train is moving on an adjacent track.
8. When storing cars, ascertain that cars 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 fouling point.

9. When leaving cars be sure that:

- Windows are closed
- Doors are locked
- Pantograph is up
- Master key is removed and master controller switch is in either off or local as instructed.

TEST OPERATIONS PROCEDURE NO. 11

I. TITLE: VEHICLE OPERATION INTO AND OUT OF SHOP

II. PURPOSE:

To provide guidelines for the operation of LRV's into and out of shops.

III. REQUIREMENT:

Within the confines of the Maintenance Shop, LRV movements are governed by the Vehicle Maintenance Supervisors.

IV. PROCEDURES:

1. Vehicles will be moved into or out of the shop by Train Operators only after receiving permission from the Vehicle Maintenance Supervisor on duty.
2. The Train Operator moving/operating LRV into the shop must:
 - a) Make a complete stop not less than 5 ft. from the shop door.
 - b) Assure that the shop door is fully opened.
 - c) Proceed at the lowest practical speed when entering the shop.
 - d) Sound two short gongs before moving and again as the LRV begins to pass through the shop door.
 - e) Spot the LRV as directed by the Vehicle Maintenance Supervisor.

3. The Train Operator moving/operating LRV out the shop must:
- a) Make a walk around inspection paying particular attention to any function that may have inadvertently been left incomplete by maintenance personnel, looking specially for:
 - Wheel chocks
 - Loose or hanging equipment
 - Electrical cable connected to the LRV
 - De-railed wheels
 - Clearance of shop tools and equipment
 - Other employees under or about the LRV.
 - b) Ascertain that the shop door is fully opened.
 - c) Sound two (2) short gongs before movement and at the shop door.
 - d) Proceed at lowest practical speed when leaving the shop.
 - e) Make a safety stop at the shop entrance so that personnel on the apron can be seen before further movement.
4. No railborne equipment is permitted to leave any shop track to yard track without the authorization and permission of Test Control Dispatcher.

TEST OPERATIONS PROCEDURE NO. 12

I. TITLE: CLEARANCE CARD

II. PURPOSE:

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

III. REQUIREMENTS:

1. A train must not be operated on the 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 an interlocking signal not illuminated or displaying a stop indication unless a Clearance Card is issued to him/her by the Test Control Dispatcher.
3. Train Operators must carry blank Clearance Cards with them while on duty. Clearance Cards will also be kept in all vehicle cabs.

IV. PROCEDURE:

1. Clearance Cards will be authorized by the Test Control Dispatcher when either because of a malfunction or because of the type of test being performed it becomes necessary to:

- a) Pass a Red Signal displaying a Stop indication
 - b) Bypass the ATP
 - c) Bypass Door Interlock
 - d) Bypass "No Motion" switch
 - e) Bypass "Audible Alert"
 - f) Bypass "Regenerative Brake"
2. Train Operators will request Clearance Cards from the Test Control Dispatcher when necessary during the performance of their duties.
 3. Clearance Cards authorized in person or over the radio/ telephone to a Train Operator, must be repeated satisfactorily to the Test Control Dispatcher. If the information is repeated correctly, the Test Control Dispatcher will give the Operator the time repeated and his/her initials. Both the Test Control Dispatcher and Train Operator will enter the repeat time in their respective copies.
 4. Trains observed operating with an exterior bypass indication are subject to be inspected by Safety or Supervisory personnel. The Operator will be required to produce his/her copy of the Clearance Card before proceeding with the train movement.



TRACK ALLOCATION NOTICE REQUEST FORM

CONTRACT NO. _____ REQUESTED BY _____ TELEPHONE NO. _____

ADDRESS _____

| DAY | DATE | LOCATION CIVIL STATIONING | | TIME OF DAY | OVERHEAD POWER | | CREW SIZE | DESCRIBE WORK |
|----------------|------|------------------------------|------------|-------------------|-------------------|----|--------------|---------------|
| | | NORTHBOUND | SOUTHBOUND | | YES | NO | | |
| MON | | | | | | | | |
| TUES | | | | | | | | |
| WED | | | | | | | | |
| THUR | | | | | | | | |
| FRI | | | | | | | | |
| SAT | | | | | | | | |
| SUN | | | | | | | | |
| REMARKS: _____ | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: IF HI-RAIL MOUNTED EQUIPMENT IS REQUIRED PLEASE INDICATE UNDER REMARKS.

RECEIVED BY _____ DATE _____ TIME _____