





OTTAWA LIGHT RAIL TRANSIT

PROJECT

Practice & Capacity Test Plan

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Document No.		Rev: 0.1
		2018-11-30 DATE

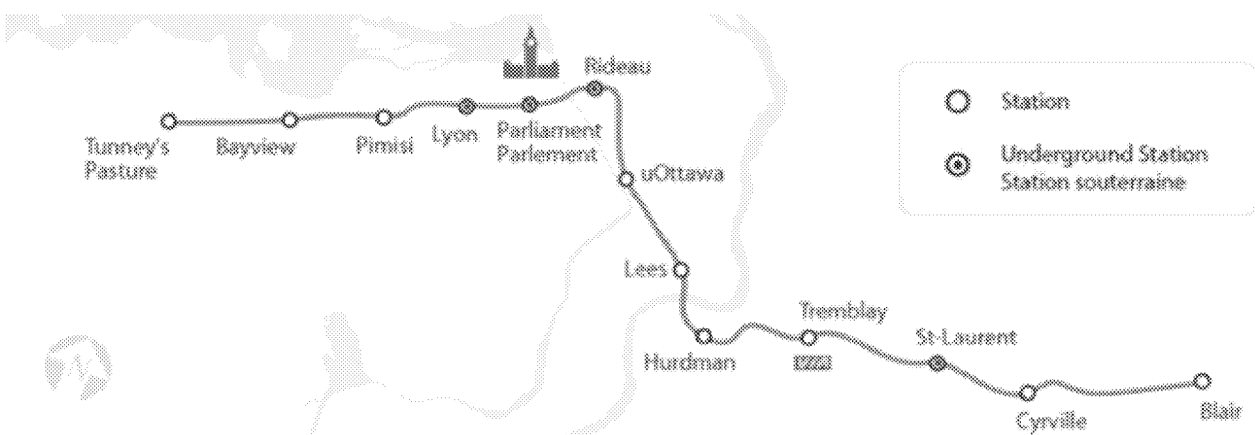
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1 Introduction

1.1 General

The Confederation Line will provide a Light Rail Transit (LRT) service between Tunney's station in the west and Blair station in the east. The 12.5-kilometre line will feature 13 LRT stations, a LRT Maintenance & Storage Facility (MSF) and a 2.5km tunnel beneath downtown Ottawa. The Confederation Line revenue service availability date is determined as a result of the successful completion of this trial. The system is designed to have an ultimate capacity of 24,000 passengers per hour per direction.



Figure 1 – Confederation Line Alignment



1.2 Scope

This document describes the details of testing required to verify aspects of system capacity and system operational readiness. This document is a companion test document to the Trial Running Test Plan. This plan has three areas of focus:

1. System Capacity
2. Failure Management
3. Operational Readiness

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1.3 Definitions, Acronyms and Abbreviations

Definitions

Trial Running	A twelve (12) consecutive day period that may commence upon the successful completion of testing and commissioning. Upon successful completion of trial running, the integrated system will be ready for revenue service. <i>Schedule 15-1, Article 1, page 19 [1]</i>
LRT System	Communications, traction Power and distribution, stray current, EMI, intrusion detection, Fixed Facilities, Vehicles, MSF, Electrical & Mechanical, and all other required and necessary elements, components and appurtenances to ensure the safe operation of the Confederation Line. <i>Schedule 15-1, Article 1, page 8 [1]</i>
Integrated	Functioning together as one coherent whole <i>Schedule 1, page 32 [1]</i>

Acronyms

ATO	Automatic Train Operation
CBTC	Computer Based Train Control
ERC	Electric Rail Controller
ERO	Electric Rail Operator
IC	Independent Certifier
IMIRS	Integrated Management Information Reporting System
LRT	Light Rail Transit
LRU	Line Replaceable Unit
MSF	Maintenance and Storage Facility
OC	Ottawa-Carleton
OCT	OC Transportation (the Operator)
OLRT-C	Ottawa Light Rail Transit Constructors
PA	Project Agreement
RIO	Rail Implementation Office
ROW	Right of Way
RTM	Rideau Transit Maintenance
RTG	Rideau Transit Group
T&C	Testing and Commissioning

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2 Practice & Capacity Testing

2.1 Objective

The objective of this activity is to confirm elements of the PA and operational readiness prior to the system entering the formal Trial Running Period for final testing.

This objective will be achieved by completing all of the individual tests identified in Section X of this document. These tests may be conducted over an extended period and need not be conducted as a single formal program. These tests however must all be completed to the satisfaction of OC Transpo and must comply with the specific goals and requirements of the PA where identified.

This Practice and Capacity Testing suite will cover the following 3 elements:

- to verify capacity requirements identified in the PA that have been explicitly excluded from the formal trial running test
- to exercise the complete system (people, equipment and procedures) in a number of specific failure scenarios
- to familiarize the operational staff with some of the more frequently exercised operational activities

2.2 Scope

The tests identified in this document may involve the whole system or may involve very select functions only.



A number of the tests identified are based on PA requirements, but a number are required to provide a degree of confidence in the operational staff to run a complex light rail system. It is important to note that some specific tests will require OCT staff only, while others will require full system support. The specifics of each test will determine the level of support and responsibilities required for each test.

2.3 Prerequisites and Assumptions

Prior to the conduct of the tests identified in this document it is vital that the equipment being used is fully representative of the equipment to be deployed in full operation. If systems or elements of the system are significantly changed after the conduct of the tests, the test lead must determine if the test needs to be re-run.

No construction, installation or T&C activities will be conducted during the conduct of these tests in order to preserve the impression of regular operation.

Specific pre-requisites will be identified on each test sheet.

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2.4 Responsibility Matrix

Responsibilities for each test will be identified in the specific test procedures.

3 Testing

Due to the nature of the testing that is required to complete the formal acceptance of these requirements it is unlikely that all tests will be completed as a single block activity. It is more likely that some tests will be explicitly planned and scheduled, while others will be conducted in a more opportunistic manner. The scheduling of each will be explained in the detail procedure and a certain amount of logical grouping may be necessary on the basis of efficiency.

NOTE : ALL TESTING MUST BE COMPLETED PRIOR TO RSA

3.1 Test Listing – PA System Capacity

The following requirements are extracted from Schedule 14, 1.5, (e), (iii), (A&C) of the PA. The detail methodology and requirements for each test identified is shown in Appendix A.

3.1.1 *End to End Travel Time (Manual Mode)*

End to end (start to stop) travel time for the whole system must not exceed 24 mins

3.1.2 *Headway Typical*

The maximum capacity headway (i.e. minimum time between consecutive, in-service trains) must be 2 mins or less

3.1.3 *Headway (single track outage)*

During an outage of a single portion of trackwork, it must be demonstrated that a 15 minute headway can be sustained

3.1.4 *Headway (Scenario 2 Peak Period)*



The maximum planned operational capacity headway (i.e. minimum time between consecutive, in-service trains) must be 2.1 mins or less – note; this requirement is a subset of 3.1.2 and so will be covered by the same test.

3.1.5 *Vehicle Passenger Capacity*

Total passenger capacity of a single vehicle must be demonstrated to be 300 people, seated and standing

3.1.6 *Vehicle Availability – Requirement Superseded*

The requirement for a 9 of 12 day AVKR average >96% is no longer necessary since it is covered by the overall requirement for fleet availability >98% in the Trial Running test plan.

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3.1.7 Vehicle Availability – AVKR

In addition to the core requirements being tracked in trial running, this requirement has been identified as a key monitoring parameter to ensure that overall performance of the fleet is consistently high. The demonstrated Average Vehicle Km Ratio (AVKR) must not be fall below 94% for more than 3 days during the Trial Running Period. This requirement will

3.1.8 Test Planning

Tests 3.1.1 – 3.1.3 of these tests generally require significant (if not all) of the fleet and ROW to be fully available and dedicated to the tests. Significant cooperation between OTC and OLRTC is required to schedule the work prior to full Trial Running

Test 3.1.4 is a subset of 3.1.1 and so will no longer need to be conducted.

Test 3.1.5 is truncated for convenience such that only a portion of the train will be filled with actual passengers to test capacity to the theoretical limit. No track time is required at all to conduct this test. Test can be conducted anytime prior to trial running at any safe location.

Test 3.1.6 is essentially covered by an overarching requirement in the Trial Running Plan

Test 3.1.7 is calculated from data obtained during trial running – no specific testing is required

3.2 Test Listing – Operational Readiness



The following requirements derived from discussions with OCT operational staff and a review of the most frequently experienced activities. The purpose of these tests is to provide all operational staff with a high degree of confidence that the most commonly undertaken activities can be completed with competency and timeliness.

It is expected that the following conditions will be tested and will require minimal involvement from RTG personnel

- i. Powering up the System
- ii. Initial Inspection and Vehicle Launch
- iii. Vehicle Return to MSF
- iv. Manual Operation – End-To-End
- v. Reporting of Vehicle/System Issues
- vi. Ramp Up/ Ramp Down of Service Levels
- vii. Practice Single Track Running
- viii. Step-Back Routine
- ix. Supervisor – Platform Duties
- x. Issuance of Track Authorities
- xi. Replacing failed train

3.2.1 Test Planning

The focus on these tests is to ensure OCT is not only familiar with the system but that they are fully prepared in terms of personnel and processes. These activities must be proven a number of

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times and must be proven using a number of different staff. This confidence testing will increase the likelihood of personnel operating more efficiently and therefore ensuring a successful Trial Running Test.

The most effective and efficient way to undertake this testing is to control the activities of OLRTC during any Pre-Trial Running Testing that they may wish to conduct. This will mean that no specific testing activities will be required, but that OCT will need to retain records to ensure each individual has performed the tasks the required amount of times under realistic operating scenarios.

3.3 Test Listing – Failure Management

The following requirements derived from discussions with OCT operational staff and a review of the most frequently experienced issues during training and Test& Commissioning. The detail methodology and requirements for each test identified is shown in Appendix C.

The identified tests are intended to verify that all operational staff are aware of the hardware and procedural requirements to recover from the most commonly experienced scenarios. In order to replicate the operational pressures that will be encountered during this testing, the whole system MUST be fully operational and running a service level similar to real operations.



It is expected that these tests will require minimal involvement from RTG personnel but that every ERC will be expected to manage/experience at least 3 of the identified tests

- i. Vehicle Door Fault
- ii. Vehicle Breakdown – Brake Fault
- iii. Switch Failure
- iv. Power/Pantograph Failure
- v. Object on Guideway
- vi. GIDS Activation
- vii. Smoke/Fire on Board
- viii. Passenger Disturbance
- ix. Operator Assault
- x. Vehicle BioHazard



3.3.1 Test Planning

The focus on these tests is a combination of the two previous activities in that failure management testing is mandated by the PA and it is also necessary for effective operational management.

This scheduling of this testing may also be considered a combination because if any of the failure scenarios were to happen in any of the previous testing, it MAY be possible to consider the activities conducted as the completion of one of these tests e.g. if a door fault happens during testing for headway or during pre-trial running, then the resolution of the issue should follow the same procedure identified for 3.3.1 and so may be possible to consider this as a completed test.



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Appendix A – PA Test Procedures

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Test Reference	3.1.1
Test Title	End to End Travel Time (Manual Mode)
Test Source	PA System Capacity
Purpose	Verify that end to end (start to stop) travel time for the whole system must not exceed 24 mins in manual mode
Test Scope	Operators must be able to run from Blair to Tunney's Pasture (or reverse) within 24 mins
Test Scale	Must be demonstrated by 10 randomly selected ERO's
Prerequisites	<ul style="list-style-type: none"> • Only fully accepted vehicles can be used (Single car or dual car consist) • No more than two tests can be conducted at any one time (one on each tack) • Fully qualified EROs • One Observer per vehicle with two stopwatches/timers • Clear right of way with no speed restrictions or other vehicle obstructions
Test Description	<ul style="list-style-type: none"> • Position a train (single or 2-car consist) at one of the terminal stations • Inform the ERO when ready to start • When vehicle first moves, the Observer must start the timer • At each intermediate station, the operator must dwell for at least 20s (the observer may use a second timer to provide a consistent 20s time for the operator) • When the vehicle arrives at the other terminus station, stop the timer • Note the operator ERO number and the total time to complete the run • Repeat the test for at 10 different operators in either direction • On completion of the 10 end-to-end runs, Calculate the average time achieved
Pass/Fail	<p>If the average time is greater than 24 mins, the test is FAILED</p> <p>If the average time is less than or equal to 24 mins the test is PASSED</p>

Operator #	Trip Time	Operator #	Trip Time
Average Manual Trip Time			

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Test Reference	3.1.2 & 3.1.4
Test Title	Maximum Capacity Headway
Test Source	PA System Capacity
Purpose	Verify that the system can operate with a 2-minute headway (ultimate design capacity). This test will also address 3.1.4 which demonstrates a headway of 2.1 minutes (2031 ultimate passenger capacity requirement)
Test Scope	The complete system must be able to maintain a 2 minute headway
Test Scale	24 single cars will be used since there is insufficient fleet to prove this requirement with 2-car consists.
Prerequisites	<ul style="list-style-type: none"> • 24 fully accepted vehicles must be used • 26 Fully qualified EROs • Step-Back routine is fully developed and proven • Fully accepted CBTC system • Reporting from CBTC system to verify headway performance • Clear right of way with no speed restrictions or other vehicle obstructions
Test Description	<ul style="list-style-type: none"> • Launch all 24 cars as per normal operation from the handover platforms in the MSF • Specific dwell times shall be programmed to be consistently 20s • Manually verify at a randomly selected platform that vehicles arrive and stop at approximately 2 minute intervals • Once a manual confirmation has been received the system must be run with exactly 2 minute headways for one hour • Verify from CBTC reporting that 2 minute headways were achieved and consistently maintained – report must indicate total number of station stops performed by each vehicle
Pass/Fail	<p>If the average headway is greater than 2 mins, the test is FAILED</p> <p>If the average headway is less than or equal to 2 mins the test is PASSED</p>

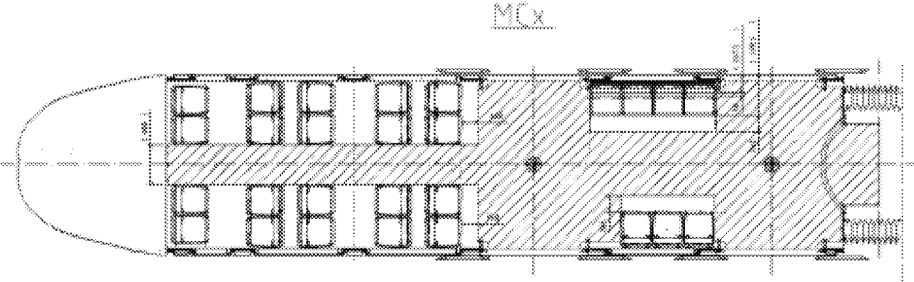
Demonstrated Headway Capacity (include CBTC report separately)	
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Test Reference	3.1.3
Test Title	Headway With Single Track Outage
Test Source	PA System Capacity
Purpose	Verify that the system can still operate with a 15 minute headway with any section of track reduced to single-track operation (to simulate maintenance activities or incident management).
Test Scope	The complete system must be able to maintain a 2 minute headway
Test Scale	15 two car trains will be used since the movements through two interlockings are longer for a 2-car train compared to a single car.
Prerequisites	<ul style="list-style-type: none"> • 30 fully accepted vehicles must be used • Fully qualified EROs • Step-Back routine is fully developed and proven • Fully accepted CBTC system • Reporting from CBTC system to verify headway performance • Fully operational track switches in the area of isolated track. • Clear right of way with no speed restrictions or other vehicle obstructions
Test Description	<ul style="list-style-type: none"> • This test shall be run while the system is already fully operating with 15 2-car trains • The section of track to be isolated shall be randomly chosen on the day of the test by an OC Transpo representative • ERCs to perform necessary track isolation and changes to CBTC scheduling to allow for 15 minute headways – this will involve removal of up to 9 two car trains from the simulated service. • System will be stable with 6 2-car trains in operations and a section of single track operation. • Once stable, headways at the stations immediately adjacent to either side of the isolated section shall be monitored • Service will be maintained at this level for 1 hour • Verify from CBTC reporting that 15 minute headways were achieved and consistently maintained – report must indicate total number of station stops at each platform.
Pass/Fail	<p>If the average headway is greater than 15 mins, the test is FAILED</p> <p>If the average headway is less than or equal to 15 mins the test is PASSED</p>

Demonstrated Single Track Headway (include CBTC report separately)

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Test Reference	3.1.5
Test Title	Maximum Single Vehicle Capacity
Test Source	PA System Capacity
Purpose	Verify that it is possible to carry 300 passengers
Test Scope	It must be possible to fit 300 people on board a single vehicle (capacity seated and standing). Since using 300 people for a test of this nature is difficult, it is proposed to physically demonstrate the capacity of a MC1 (or MC2) module using the same requirements.
Test Scale	<p>One Single LMC module will be used. Test can be conducted anywhere people can safely alight and disembark the vehicle.</p> <p>For a single LMCx Module capacity is calculated to be 73 passengers:</p> <ul style="list-style-type: none"> • Seating – 27 passengers • Standing – 46 passengers (@3.33 pass/m²) 13.77m² of standing space 
Prerequisites	<ul style="list-style-type: none"> • 1 MC module that is fully representative of a revenue service car (i.e. all seats, stanchions and handhold must be in place). • Access onto and off the vehicle must be safe and accessible. • 73 randomly selected people are available – normally dressed (no big knapsacks etc.)
Test Description	<ul style="list-style-type: none"> • Seat all Passengers in the 27 seats identified above • Allow remaining 46 passengers entry into the module – only allowing standing in the shaded zones identified in the above drawing • Ensure only half of the gangway to the adjacent module is used.
Pass/Fail	<p>If 73 passengers cannot fit in the module, the test is FAILED</p> <p>If 73 passengers can fit in the module, the test is PASSED</p>

Demonstrated Passenger Capacity
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Test Reference	3.1.7
Test Title	Vehicle AVKR – Minimal Performance
Test Source	OCT & RTG Agreed Requirement
Purpose	Verify that the vehicle AVKR does fall lower than 94% for more than 3 days during trial running. It is feasible that 4 days of 94% operation can be offset with 100% performance the remaining days. Even though this is a statistical “Pass” on the main requirement of 98% AVKR over 12 days, it does not show consistency in service or predictable performance for operations or maintenance.
Test Scope	This will be a supplementary calculation conducted during the formal Trial Running Period
Test Scale	The full operation will be running as per the agreed Trial Running.
Prerequisites	<ul style="list-style-type: none"> All Trial Running test requisites are in place – vehicle Km reporting
Test Description	<ul style="list-style-type: none"> Monitor AVKR reporting as per Trial Running Verify that there are no more than 3 days with AVKR <94%
Pass/Fail	If the AVKR is \leq 94% for more than 3 days the test is FAILED If the AVKR is \leq 94% for 3 days or less the test is PASSED



Days AVKR \leq 94%
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Appendix B – Operational Readiness Test Procedures

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Test Reference	3.2 (i)
Test Title	Traction Power Removal & Restoration
Test Source	Operational Readiness (OCT & RTM)
Purpose	To verify: <ul style="list-style-type: none"> effectiveness of approved Traction Power Isolation procedures for Level A, B and C isolations (attached) staff compliance with Traction Power Isolation procedure
Test Scope	Demonstration tests to be conducted at various times of the day and involve as many ERCs as practical. RTM staff participation required.
Test Scale	Demonstration tests to be conducted a minimum of 5 times at different locations across the system. Tests shall include both de-energization of electrical circuits and OCS sectionalisation.
Prerequisites	<ul style="list-style-type: none"> SCADA system must be functional with all traction power remote monitoring and control capabilities available from the TOCC and BCC. Fully certified ERCs and RTM staff One observer in TOCC (OCT) and one observer in field to verify to monitor and verify procedure compliance
Test Description	<p>In coordination with RTM, TOCC Superintendent identifies type of power isolation to be demonstrated</p> <p>Traction Power Removal</p> <ul style="list-style-type: none"> RTM staff prepares/submits traction power isolation plan. RTM staff requests power removal or isolation of specified sections of the OCS (location TBD for each demonstration) in accordance with approved isolation plan. ERC de-energizes power in accordance with isolation plan and procedure. As applicable to the approved isolation plan, RTM staff racks out feeder breakers and/or opens/closes disconnect switches, confirms zero voltage, and applies shunting devices. <p>Traction Power Restoration</p> <ul style="list-style-type: none"> As applicable, RTM staff removes shunting devices, racks in feeder breakers and restores disconnect switches to in accordance with isolation plan RTM staff advises ERC that traction power can be restored ERC re-energizes traction power in accordance with isolation procedure
Pass/Fail	<p>PASS: Staff compliance with traction power isolation procedure</p> <p>FAIL: Staff fails to comply with isolation procedure - involved staff will be retained and demonstration test repeated as required and determined by observe</p>

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Test Reference	3.2 (ii)
Test Title	Initial Inspection and Vehicle Launch
Test Source	Operational Readiness (OCT & RTM)
Purpose	<p>To verify</p> <ul style="list-style-type: none"> • Efficient movement of trains to the handover platform; • Effective coordination of vehicle handoff and inspection at the handover platform; and, • compliance with pre-departure inspection procedure and communication protocols; • efficient dispatching of trains to the mainline at scheduled times; and • effective integration of pull-out and mainline trains
Test Scope	Demonstration tests to be conducted during AM and PM pull-out periods. Monitoring of inspections and vehicle launch will be conducted randomly throughout the Practice Running period. RTM staff participation and coordination required
Test Scale	Must be successfully demonstrated during a minimum of 10 service launch periods (AM or PM pull-out)
Prerequisites	<ul style="list-style-type: none"> • Full system access • Full simulated revenue service operations • Switches 501, 502, 503 and 504 fully functional • Fully certified EROs, ERCs and designated RTM staff • Two OCT observers (TOCC and handover platform) to monitor pull-in process, communication protocol and effectiveness of train movement between the mainline and the handover platform • One RTM observer to monitor YCC actions, train handover process and movement within the yard
Test Description	<ul style="list-style-type: none"> • Regular scheduled service is operated across the system • Observers on-site at the handover platform and in the TOCC/YCC • Trains are routed to the handover platform by YCC in sequence and in accordance with the operating schedule • EROs board the train, conduct required inspections and prepare the train for dispatch to the mainline • Trains depart the handover platform at the scheduled time in accordance with the operating schedule
Pass/Fail	<p>PASS:</p> <ul style="list-style-type: none"> • adherence to all applicable procedures; • trains are available at the handover platform at the scheduled times; • vehicle inspections are completed; and • efficient dispatching of trains to the mainline in accordance with the operating schedule (no delays to revenue service trains)

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	<p>FAIL:</p> <ul style="list-style-type: none">• Staff fails to comply with applicable procedures;• Trains are not available at the handover platform at the scheduled time;• Vehicle inspections are not completed by the ERO;• Trains are not dispatched to the mainline at their scheduled times; or• Dispatching of trains onto the mainline results in service delays <p>In the event of a FAILED demonstration test as determined by the OCT/RTM observers, involved staff will be debriefed, retraining will be conducted as applicable and as determined by observers the demonstration test will be repeated on another day.</p>
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Test Reference	3.2 (iii)
Test Title	Vehicle Return to the MSF
Test Source	Operational Readiness (OCT and RTM)
Purpose	To verify: <ul style="list-style-type: none"> efficient removal of trains from the mainline and routing to the handover platform and from there to the Yard tracks effective handover of trains between the ERO and the YCC; compliance with communication protocols
Test Scope	During simulated revenue service demonstration tests to be conducted at the end of the AM and PM pull-out periods and at the end of the service day. Monitoring of tests will be conducted randomly throughout the Practice Running period to involve all EROs and ERCs. RTM staff participation and coordination required.
Test Scale	Must be successfully demonstrated on a minimum of 10 days
Prerequisites	<ul style="list-style-type: none"> Full system access Full simulated revenue service operations Switches 501, 502, 503 and 504 fully functional Fully certified EROs, ERCs and designated RTM staff Two OCT observers (TOCC and handover platform) to monitor pull-in process, communication protocol and effectiveness of train movement between the mainline and the handover platform One RTM observer to monitor YCC actions, train handover process and movement within the yard
Test Description	<ul style="list-style-type: none"> Regular scheduled service is operated across the system Observers on-site at the handover platform and in the TOCC/YCC Scheduled pull-in trips are routed from the mainline to the handover platform YCC routes the train from the handover platform to the yard tracks
Pass/Fail	<p>PASS:</p> <ul style="list-style-type: none"> adherence to all applicable operating and communication procedures; trains are efficiently routed from the mainline to the handover platform (no delays to revenue service trains); efficient handover of trains at the handover platform; and efficient movement of trains from the handover platform to the yard tracks <p>FAIL:</p> <ul style="list-style-type: none"> Staff fails to comply with applicable procedures; Pull-in trains cause delays to revenue service trains; or Scheduled pull-in trains do not pull-into the yard as per operating schedule <p>Involved staff to be debriefed, retraining will be conducted as applicable and the demonstration test will be repeated on another day</p>

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Test Reference	3.2 (iv)
Test Title	Manual Operation (ATPM) – End-to-End
Test Source	Operational Readiness
Purpose	<ul style="list-style-type: none"> • Verify system's ability to support sustained Manual Mode Operations (ATPM) • Verify ERO's abilities to maintain schedule across the system while operating in Manual (ATPM Mode)
Test Scope	During simulated revenue service all trains are operated in Manual (ATPM) Mode for a minimum of two full round-trip cycles during the AM and PM peak periods. Observers will monitor system/ERO performance.
Test Scale	Must be demonstrated a minimum of two (2) times each (AM & PM peak periods)
Prerequisites	<ul style="list-style-type: none"> • Full system access • Full simulated revenue service operations • No other tests to be conducted simultaneously • Fully qualified EROs • Three observers: one at each terminal (Rail Supvs) and one in the TOCC
Test Description	<ul style="list-style-type: none"> • Regular scheduled service is operated across the system • At identified starting time, ERC instructs all EROs to switch to ATPM mode and operate in ATPM until further notice • Supervisors at Tunney's Pasture and Blair stations assure trains depart terminals in ATPM mode • At the end of the demonstration test TOCC instructs all EROs to switch back to ATP mode • Observer in TOCC compiles operating data and compares against operating data from similar periods when trains operated in ATP mode
Pass/Fail	<p>PASS: If trains can maintain the operating schedule with minimal delays and terminals operate efficiently</p> <p>FAIL: If trains are not able to maintain the operating schedule or if there is degraded terminal operations.</p> <p>In the event of a FAILED demonstration test as determined by the observers, involved staff will be debriefed, retraining will be conducted as applicable and the demonstration test will be repeated on another day if determined by the observers.</p> <ul style="list-style-type: none"> • If the FAILED test was a result of specific EROs, a repeated demonstration test may include only the involved EROs • If the Failed test was a result of inefficient terminal operations Rail Operations and TOCC Staff will determine root cause and determine what actions, if any are warranted.

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Test Reference	3.2 (v)
Test Title	Reporting and Management of Vehicle/System Issues
Test Source	Operational Readiness (OCT and RTM)
Purpose	<ul style="list-style-type: none"> • Verify effective communication of vehicle/system issues between EROs and TOCC • Verify effective communication and coordination of issues between the TOCC and Help Desk/RTM • Verify skills and abilities of ERCs, EROs and RTM (as applicable) in effectively troubleshooting and over coming vehicle/system problems • Verify effectiveness of existing rules/procedures
Test Scope	Demonstration tests will be conducted during periods when simulated revenue service is being operated. Specific vehicle/system issues that arise during the operation of simulated revenue service will be reviewed by Rail Operations and RTM staff to determine effectiveness of the communication, response and troubleshooting processes
Test Scale	Number of vehicle/system issues to be reviewed shall be sufficient to effectively evaluate the team's ability to manage basic vehicle/system related issues.
Prerequisites	<ul style="list-style-type: none"> • Full system access • Full simulated revenue service operations • Fully qualified EROs • Fully qualified RTM Help Desk and response staff available • Vehicle Troubleshooting Guidelines finalized and approved <p>RTM staff participation required</p>
Test Description	<ul style="list-style-type: none"> • Regular scheduled service is operated across the system • Rail Operations Program Manager, in coordination with TOCC Superintendent and RTM staff, will randomly select vehicle/system issues to be reviewed • Rail Operations Program Manager, in coordination with TOCC Superintendent and RTM staff, will investigate the incident and determine effectiveness of: <ul style="list-style-type: none"> • Communication between ERO and TOCC • TOCC coordination with RTM Help Desk (as applicable) • Field response to problem/issue and • Effectiveness of troubleshooting checklist (if applicable) and effectiveness of SOPs
Pass/Fail	<p>PASS:</p> <ul style="list-style-type: none"> • If EROs demonstrate the ability to effectively identify, report and overcome vehicle/system issues • IF ERCs effectively direct the troubleshooting of vehicle issue and/or communicate and coordinate response by RTM • If RTM staff effectively respond to and assist the ERCs in overcoming vehicle/system issues

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	<ul style="list-style-type: none"> • If troubleshooting checklist/guidelines are adequate to overcome basic vehicle/system issues <p>FAIL:</p> <ul style="list-style-type: none"> • If EROs are not able to demonstrate the ability to effectively identify, report and overcome vehicle/system issues • IF ERCs are not able to effectively direct the troubleshooting of vehicle issue and/or communicate and coordinate response by RTM • If RTM staff are not able effectively respond to and assist the ERCs in overcoming vehicle/system issues • If the approved troubleshooting checklist/guidelines are not adequate to overcome basic vehicle/system issues <p>In the event of a FAILED demonstration test, staff involved will be debriefed and retrained as applicable.</p>
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Test Reference	3.2 (vi)
Test Title	Ramp Up/ Ramp Down of Service Levels
Test Source	Operational Readiness
Purpose	To verify efficient management of headway transitions throughout the operating day
Test Scope	Demonstration tests to be conducted during the Practice Running period at times when service headways change
Test Scale	Must be successfully demonstrated a minimum of twice for each headway transition period
Prerequisites	<ul style="list-style-type: none"> • Full system access • Full simulated revenue service operations • Fully qualified EROs • Fully certified EROs • Three observers <ul style="list-style-type: none"> ○ One in the TOCC ○ One at each terminal (Tunney's Pasture and Blair stations)
Test Description	<ul style="list-style-type: none"> • Regular scheduled service is operated across the system • Observer in TOCC to monitor effectiveness of headway transitions, efficient dispatching and routing of trains to/from the connector tracks and impact on scheduled service • Terminal observers to monitor procedure compliance on clearing trains
Pass/Fail	<p>PASS:</p> <ul style="list-style-type: none"> • adherence to all applicable operating and communication procedures; • trains are cleared at terminals (if applicable) • efficient routing of trains to/from the connector tracks (no delays to revenue service trains); <p>FAIL:</p> <ul style="list-style-type: none"> • Staff fails to comply with applicable procedures; • EROs do not clear trains prior to departing terminal station; or • Pull-out/pull-in trips cause delays to revenue service trains <p>In the event of a FAILED demonstration test as determined by the observers, staff involved will be debriefed, retraining will be conducted as applicable and the demonstration test will be repeated on another day if determined by the observer</p>

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Test Reference	3.2 (vii)
Test Title	Practice Single-Track Operations
Test Source	Operational Readiness
Purpose	To verify: <ul style="list-style-type: none"> • efficient transition between normal and single-track operations; • TOCC staff's ability to effectively manage single-track operation; • effective response by OCT and/or RTM field staff to affected stations for closing/reopening platforms; and • initiation of internal and external customer communication protocols and
Test Scope	Demonstration tests will be conducted during mid-day and evening hours at times when simulated revenue service is being operated. Single-tracking will be operated for a minimum of 60 minutes for each demonstration test.
Test Scale	Must be successfully demonstrated for each single-track segment (between each interlocking pair) and during each ERC shift
Prerequisites	<ul style="list-style-type: none"> • Full system access • Full simulated revenue service operations • Fully qualified EROs • Observers in the TOCC to monitor implementation and management of single-track operation and at affected stations to monitor field staff response and actions at stations
Test Description	<ul style="list-style-type: none"> • Regular scheduled service is operated across the system • At identified starting times, ERCs will be instructed to initiate single-track operation between specific interlocking pairs selected by the TOCC Superintendent • ERCs will follow established procedures in communicating and implementing the single-track operation • Field staff will respond to stations and close affected station platforms in accordance with applicable procedures • At the conclusion of the demonstration test station platforms will be reopened and normal operation resumed
Pass/Fail	<p>PASS:</p> <ul style="list-style-type: none"> • adherence to all applicable operating and communication procedures; • effective transition between normal and single-track operations and management of single-track operation • staff respond to affected stations and close/re-open affected platforms • effective internal/external communication of customer information <p>FAIL:</p> <ul style="list-style-type: none"> • Staff fails to comply with applicable procedures; • Transitions between normal and single-track operations result in extensive delays; • ERCs fail to manage the single-track operation effectively (trains unnecessarily

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	<ul style="list-style-type: none"> • delayed at entrance points to single-track area); • Staff fails to respond to stations to close affected platforms or incorrect platforms are closed; or • Ineffective internal/external communication of customer information n <p>In the event of a FAILED demonstration test as determined by the OCT observer, staff involved will be debriefed, retraining will be conducted as applicable and the demonstration test may be repeated at the discretion of the Rail Operations Program Manager</p>
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Test Reference	3.2 (viii)
Test Title	Step-Back Operations
Test Source	Operational Readiness
Purpose	To verify the planned step back operation functions effectively
Test Scope	Demonstration tests will be conducted during AM and PM peak periods at times when simulated revenue service is being operated.
Test Scale	Step back demonstration tests will be conducted at Bayview and Tunney's Pasture station a minimum of three times. Each demonstration test will be run for a 60-minute period.
Prerequisites	<ul style="list-style-type: none"> • Full system access • Full simulated revenue service operations • Fully qualified EROs • OCT Observers at Bayview and Tunney's Pasture stations to monitor effectiveness of step back operations
Test Description	<ul style="list-style-type: none"> • Regular scheduled service is operated across the system • Step back operations will occur at Bayview Station • Step back EROs will be positioned on the westbound platform, board the rear end of the westbound trains, advise the ERO of the train that he/she has boarded and position themselves in the eastbound cab • Upon arrival at Tunney's Pasture the ERO of the arriving train will open the doors and key down the console. The step back ERO will key up the console, close doors and depart the station at the scheduled time • The original ERO will alight the train at Bayview, position themselves on the westbound platform and prepare to perform the next step-back operation
Pass/Fail	<p>PASS:</p> <ul style="list-style-type: none"> • Efficient step back operations – seamless boarding process at Bayview and ERO transition at Tunney's Pasture with no delays to service • Efficient management of staff at Bayview stations – EROs aware of train they are scheduled to board, correctly positioned on the platform and board assigned train <p>FAIL:</p> <ul style="list-style-type: none"> • Unnecessary delays in service resulting from step-back EROs boarding the train at Bayview or during the transition of control at Tunney's Pasture. • ERO confusion at Bayview regarding what train to board <p>In the event of a FAILED demonstration test as determined by the OCT observers, staff involved will be debriefed, retraining will be conducted as applicable and the demonstration test may be repeated at the discretion of the Rail Operations Program Manager</p>
Test Reference	3.2 (ix)
Test Title	Rail Supervisor – Roles and Responsibilities

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Test Source	Operational Readiness
Purpose	To verify each Rail Supervisor understands and is capable of performing all required roles and responsibilities as identified in the Rail Supervisor Handbook (attached)
Test Scope	OCT observers to shadow Rail Supervisor during various time of the day while simulated revenue service is being operated and monitor performance of duties and compliance with all applicable rules/procedures
Test Scale	Demonstration tests to be conducted for each Rail Supervisor. Observers to monitor performance for a minimum of two hours
Prerequisites	<ul style="list-style-type: none"> • Full system access • Full simulated revenue service operations • Fully qualified Rail Supervisors • One observer to shadow each Rail Supervisor
Test Description	<ul style="list-style-type: none"> • Regular scheduled service is operated across the system • Rail Program Manager assigns an Observer to monitor a Rail Supervisor as outlined on the Rail Supervisor Handbook for a select time frame
Pass/Fail	<p>PASS: Rail Supervisor effectively performs all required roles and responsibilities</p> <p>FAIL: Rail Supervisor fails to perform all required roles and responsibilities</p> <p>In the event of a FAILED demonstration test as determined by the observer, involved staff will be retained and demonstration test repeated as required and determined by observer</p>

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Test Reference	3.2 (x)
Test Title	Issuance of Track Authorities
Test Source	Operational Readiness (OCT & RTM)
Purpose	To verify compliance with the approved operating rules and procedures for gaining access to the ROW through the issuance and cancellation of Track Authorities. (Refer to attached Section 5 of the Electric Light Rail Operating Rules - attached)
Test Scope	OCT observers to monitor the issuance and cancelations of Track Authorities during various time of the day while simulated revenue service is being operated to ensure compliance with approved operating rules and procedures RTM staff participation required
Test Scale	Demonstration tests to be conducted for the issuance/cancelations of a minimum of five (5) Track Authorities for OCT staff and RTM staff.
Prerequisites	<ul style="list-style-type: none"> • Full system access • Full simulated revenue service operations • Fully qualified Rail Supervisors, EROs, ERCs and RTM staff • One Observer to monitor actions of field staff; one Observer to monitor actions of TOCC staff
Test Description	<ul style="list-style-type: none"> • Regular scheduled service is operated across the system • Rail Program Manager schedules the demonstration tests • Observers are in place to verify compliance with the approved operating rules and procedures
Pass/Fail	<p>PASS: Staff complies with the approved operating rules and procedures (Section 5 – Electric Light Rail Operating Rules)</p> <p>FAIL: Staff fails to comply with the approved operating rules and procedure (Section 5 – Electric Light Rail Operating Rules)</p> <p>In the event of a FAILED demonstration test as determined by the observers, involved staff will be retained and demonstration test repeated as required and determined by observer</p>

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Test Reference	3.2 (xi)
Test Title	Replacing Failed Train
Test Source	Operational Readiness (OCT & RTM)
Purpose	To verify: <ul style="list-style-type: none"> • ERC's ability to effectively replace a failed train during revenue service hours • Effective communication between the ERC and RTM Help Desk • RTM coordination and response to reports of failed trains
Test Scope	Demonstration tests will be conducted at various time of the day while simulated revenue service is being operated. Failed train scenarios will include: <ul style="list-style-type: none"> • Replacement of trains at terminal stations • Offloading of trains at mid-line stations • Failed trains that can operate to the yard in ATO/ATPM • Failed trains that can only operate to the yard in RTM RTM staff participation required
Test Scale	Demonstration tests will be conducted during the peak and off-peak periods at mid-line and terminal stations a minimum of five times.
Prerequisites	<ul style="list-style-type: none"> • Full system access • Full simulated revenue service operations • Fully qualified EROs and ERCs • Fully certified RTM staff and RTM staff available to respond as necessary • Observers in the TOCC to monitor compliance with established rules/procedures and coordination with RTM and on the incident train to monitor ERO actions
Test Description	<ul style="list-style-type: none"> • Regular scheduled service is operated across the system • Selected ERO will report a vehicle issue that requires replacement of the train (at a terminal or mid-line station) • ERC will identify the need to replace the train direct the ERC to either continue to the end of the line or to offload the train at its current location • ERC will contact Help Desk and arrange for replacement train • Help Desk will arrange for a replacement train to be dispatched to the handover platform • ERC will arrange to have an extra ERO dispatched to the handover platform to board the replacement train • ERC coordinates the replacement of the train, routing of the replacement train onto the mainline and the routing of the failed train back to the MSF
Pass/Fail	PASS: <ul style="list-style-type: none"> • Compliance with all operating rules and procedures • Effective coordination between the ERC and Help Desk • Timely dispatch of replacement train from the yard to the mainline with minimal impact to revenue service


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	<ul style="list-style-type: none"> • Efficient insertion of the replacement train into revenue service • Effective movement of failed train back to yard with minimal impact to revenue service <p>FAIL:</p> <ul style="list-style-type: none"> • Non-compliance with operating rules/procedures • Ineffective coordination between ERC and Help Desk • Untimely dispatch of replacement train from the yard • Unnecessary delays to revenue service while dispatching the replacement train onto the mainline or while moving the failed train back to the MSF <p>In the event of a FAILED demonstration test as determined by the observers, staff involved will be debriefed, retraining will be conducted as applicable and the demonstration test may be repeated at the discretion of the Rail Operations Program Manager</p>
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Appendix C – Failure Management Scenarios

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Test Reference	3.3 (i)
Test Title	Vehicle Door Fault
Test Source	Failure Management
Purpose	Verify that all staff in the recovery process are aware and can follow all approved practices and procedures
Test Scope	Simulation of a vehicle door fault of an active train in revenue service – one of the following faults to be simulated: <ul style="list-style-type: none"> • Door fails to open • Door fails to close/achieve locked status • Loss of Door closed status between stations
Test Scale	Only one door fault will be simulated on a single vehicle
Prerequisites	<ul style="list-style-type: none"> • Full system must be operating, simulating a regular service period • ERCs and EROs must be aware and be trained on the appropriate Door Fault Recovery Work Instruction. • Test to be monitored by 2 OCT staff to verify procedural compliance and monitor system recovery times.
Test Description	<ul style="list-style-type: none"> • Verify that the operational procedure (attached below) for door recovery is followed <div style="text-align: center;">  Door Fault Recovery WI Draft 0.2 </div> <ul style="list-style-type: none"> • Identify the start time of the simulation and the time at which the entire system returns to normal operation
Pass/Fail	<ul style="list-style-type: none"> • If, in the opinion of the monitoring staff, the OCT staff did NOT appear competent in addressing the issue then the test is FAILED. A failed test means that the same crew will be briefed on the errors and will required to re-run the same test again • If, in the opinion of the monitoring staff, the OCT staff DID appear competent in addressing the issue then the test is PASSED

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Pass/Fail	
Assessor	

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Test Reference	3.3 (ii)
Test Title	Vehicle Brake Fault
Test Source	Failure Management
Purpose	Verify that all staff in the recovery process are aware and can follow all approved practices and procedures
Test Scope	Simulation of a vehicle brake fault of an active train in revenue service – a failure is experienced that requires a brake reset.
Test Scale	Only one brake fault will be simulated on a single vehicle
Prerequisites	<ul style="list-style-type: none"> • Full system must be operating, simulating a regular service period • ERCs and EROs must be aware and be trained on the appropriate Door Fault Recovery Work Instruction. • Test to be monitored by 2 OCT staff to verify procedural compliance and monitor system recovery times.
Test Description	<ul style="list-style-type: none"> • Verify that the operational procedure (attached below) for door recovery is followed <div style="text-align: center;">  <p>Troubleshooting Guide.docx</p> </div> • Identify the start time of the simulation and the time at which the entire system returns to normal operation
Pass/Fail	<ul style="list-style-type: none"> • If, in the opinion of the monitoring staff, the OCT staff did NOT appear competent in addressing the issue then the test is FAILED. A failed test means that the same crew will be briefed on the errors and will required to re-run the same test again • If, in the opinion of the monitoring staff, the OCT staff DID appear competent in addressing the issue then the test is PASSED


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Pass/Fail	
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Test Reference	3.3 (iii)
Test Title	Track Switch Fault
Test Source	Failure Management
Purpose	Verify that all staff in the recovery process are aware and can follow all approved practices and procedures
Test Scope	Simulation of a track switch failure during revenue service
Test Scale	Only one switch fault will be simulated on the whole system
Prerequisites	<ul style="list-style-type: none"> • Full system must be operating, simulating a regular service period • ERCs and EROs must be aware and be trained on the appropriate Door Fault Recovery Work Instruction. • Test to be monitored by 2 OCT staff to verify procedural compliance and monitor system recovery times.
Test Description	<ul style="list-style-type: none"> • Verify that the operational procedure (attached below) for switch failure management is followed <p style="text-align: center;">AWAITING DETAIL PROCEDURE</p> <ul style="list-style-type: none"> • Identify the start time of the simulation and the time at which the entire system returns to normal operation
Pass/Fail	<ul style="list-style-type: none"> • If, in the opinion of the monitoring staff, the OCT staff did NOT appear competent in addressing the issue then the test is FAILED. A failed test means that the same crew will be briefed on the errors and will required to re-run the same test again • If, in the opinion of the monitoring staff, the OCT staff DID appear competent in addressing the issue then the test is PASSED


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Pass/Fail	
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Test Reference	3.3 (iv)
Test Title	Vehicle Power Fault / Pantograph failure
Test Source	Failure Management
Purpose	Verify that all staff in the recovery process are aware and can follow all approved practices and procedures
Test Scope	Simulation of a vehicle pantograph fault of an active train in revenue service – a failure is experienced that requires a pantograph recovery.
Test Scale	Only one pantograph fault will be simulated on a single vehicle
Prerequisites	<ul style="list-style-type: none"> • Full system must be operating, simulating a regular service period • ERCs and EROs must be aware and be trained on the appropriate Door Fault Recovery Work Instruction. • Test to be monitored by 2 OCT staff to verify procedural compliance and monitor system recovery times.
Test Description	<ul style="list-style-type: none"> • Verify that the operational procedure (attached below) for door recovery is followed <div style="text-align: center;">  <p>Troubleshooting Guide.docx</p> </div> • Identify the start time of the simulation and the time at which the entire system returns to normal operation
Pass/Fail	<ul style="list-style-type: none"> • If, in the opinion of the monitoring staff, the OCT staff did NOT appear competent in addressing the issue then the test is FAILED. A failed test means that the same crew will be briefed on the errors and will required to re-run the same test again • If, in the opinion of the monitoring staff, the OCT staff DID appear competent in addressing the issue then the test is PASSED

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Pass/Fail	
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Test Reference	3.3 (v)
Test Title	Object On Guideway
Test Source	Failure Management
Purpose	Verify that all staff in the recovery process are aware and can follow all approved practices and procedures
Test Scope	Simulation of a section of track affected by an unexpected object on the guideway
Test Scale	Only one section of the system will be affected by this simulation but the simulation may involve one or both tracks
Prerequisites	<ul style="list-style-type: none"> • Full system must be operating, simulating a regular service period • ERCs and EROs must be aware and be trained on the Track Failure and Obstructions Work Instruction. • Test to be monitored by 2 OCT staff to verify procedural compliance and monitor system recovery times. <p>NOTE : for this exercise, it is NOT necessary to use any EMS services or external recovery vendors, those functions can be simulated.</p>
Test Description	<ul style="list-style-type: none"> • Verify that the operational procedure (attached below) for track obstructions is followed <div style="text-align: center;">  <p>Track Failures and Obstructions V1.3 DR</p> </div> <ul style="list-style-type: none"> • Identify the start time of the simulation and the time at which the entire system returns to normal operation
Pass/Fail	<ul style="list-style-type: none"> • If, in the opinion of the monitoring staff, the OCT staff did NOT appear competent in addressing the issue then the test is FAILED. A failed test means that the same crew will be briefed on the errors and will required to re-run the same test again • If, in the opinion of the monitoring staff, the OCT staff DID appear competent in addressing the issue then the test is PASSED


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Pass/Fail	
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Test Reference	3.3 (vi)
Test Title	GIDS Activation
Test Source	Failure Management
Purpose	Verify that all staff in the recovery process are aware and can follow all approved practices and procedures
Test Scope	Simulation of a section of track affected by an unexpected intrusion of the guideway at a platform
Test Scale	Only one intrusion of the system will be affected by this simulation but the simulation will involve one or both tracks
Prerequisites	<ul style="list-style-type: none"> • Full system must be operating, simulating a regular service period • ERCs and EROs must be aware and be trained on the Track Failure and Obstructions Work Instruction. • Test to be monitored by 2 OCT staff to verify procedural compliance and monitor system recovery times.
Test Description	<ul style="list-style-type: none"> • Verify that the operational procedure (attached below) for track obstructions is followed <p>AWAITING DETAIL PROCEDURE</p> <ul style="list-style-type: none"> • Identify the start time of the simulation and the time at which the entire system returns to normal operation
Pass/Fail	<ul style="list-style-type: none"> • If, in the opinion of the monitoring staff, the OCT staff did NOT appear competent in addressing the issue then the test is FAILED. A failed test means that the same crew will be briefed on the errors and will required to re-run the same test again • If, in the opinion of the monitoring staff, the OCT staff DID appear competent in addressing the issue then the test is PASSED


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Test Reference	3.3 (vii)
Test Title	Fire/Smoke on Board
Test Source	Failure Management
Purpose	Verify that all staff in the recovery process are aware and can follow all approved practices and procedures
Test Scope	Simulation of a vehicle affected by a smoke/fire scenario.
Test Scale	Only one vehicle will be simulated as affected by biohazard
Prerequisites	<ul style="list-style-type: none"> Full system must be operating, simulating a regular service period ERCs and EROs must be aware and be trained on the appropriate fire and smoke incident Work Instruction. Test to be monitored by 2 OCT staff to verify procedural compliance and monitor system recovery times. <p>NOTE : for this exercise, it is NOT necessary to use any EMS services, those functions can be simulated.</p>
Test Description	<ul style="list-style-type: none"> Verify that the operational procedure (attached below) for fire/smoke on board a vehicle is followed <div style="text-align: center;">  Fire and Smoke Incidents 0.2 Sept 10, </div> <ul style="list-style-type: none"> Identify the start time of the simulation and the time at which the entire system returns to normal operation
Pass/Fail	<ul style="list-style-type: none"> If, in the opinion of the monitoring staff, the OCT staff did NOT appear competent in addressing the issue then the test is FAILED. A failed test means that the same crew will be briefed on the errors and will required to re-run the same test again If, in the opinion of the monitoring staff, the OCT staff DID appear competent in addressing the issue then the test is PASSED





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Pass/Fail	
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Test Reference	3.3 (viii)
Test Title	Passenger Disturbance
Test Source	Failure Management
Purpose	Verify that all staff in the recovery process are aware and can follow all approved practices and procedures
Test Scope	Simulation of a vehicle affected by unruly passenger or passenger disturbance.
Test Scale	Only one vehicle will be simulated as affected by biohazard
Prerequisites	<ul style="list-style-type: none"> • Full system must be operating, simulating a regular service period • ERCs and EROs must be aware and be trained on the appropriate passenger disturbance Work Instruction. • Test to be monitored by 2 OCT staff to verify procedural compliance and monitor system recovery times. <p>NOTE : for this exercise, it is NOT necessary to use any EMS services, those functions can be simulated.</p>
Test Description	<ul style="list-style-type: none"> • Verify that the operational procedure (attached below) for passenger disturbance on board a vehicle or at platform is followed <div style="text-align: center;">  Disturbance On The Confederation Line V </div> <ul style="list-style-type: none"> • Identify the start time of the simulation and the time at which the entire system returns to normal operation
Pass/Fail	<ul style="list-style-type: none"> • If, in the opinion of the monitoring staff, the OCT staff did NOT appear competent in addressing the issue then the test is FAILED. A failed test means that the same crew will be briefed on the errors and will required to re-run the same test again • If, in the opinion of the monitoring staff, the OCT staff DID appear competent in addressing the issue then the test is PASSED


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Pass/Fail	
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Test Reference	3.3 (ix)
Test Title	Operator Assault
Test Source	Failure Management
Purpose	Verify that all staff in the recovery process are aware and can follow all approved practices and procedures
Test Scope	Simulation of a vehicle affected by a simulated assault of an ERO at an exchange / handover platform
Test Scale	Only one assault will be simulated
Prerequisites	<ul style="list-style-type: none"> • Full system must be operating, simulating a regular service period • ERCs and EROs must be aware and be trained on the appropriate contaminated train Work Instruction and have required HazMat equipment. • Test to be monitored by 2 OCT staff to verify procedural compliance and monitor system recovery times.
Test Description	<ul style="list-style-type: none"> • Verify that the operational procedure (attached below) for operator assault is followed <div style="display: flex; justify-content: space-around; align-items: center; margin: 10px 0;"> <div style="text-align: center;">  Accident and Incident Investigator </div> <div style="text-align: center;">  ICCTP-Transit Supervisor Response </div> <div style="text-align: center;">  TOCC Assault or Threat of Violence </div> <div style="text-align: center;">  Section Head Response to Operatc </div> </div> • Identify the start time of the simulation and the time at which the entire system returns to normal operation
Pass/Fail	<ul style="list-style-type: none"> • If, in the opinion of the monitoring staff, the OCT staff did NOT appear competent in addressing the issue then the test is FAILED. A failed test means that the same crew will be briefed on the errors and will required to re-run the same test again • If, in the opinion of the monitoring staff, the OCT staff DID appear competent in addressing the issue then the test is PASSED

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Pass/Fail	
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Test Reference	3.3 (x)
Test Title	Vehicle BioHazard
Test Source	Failure Management
Purpose	Verify that all staff in the recovery process are aware and can follow all approved practices and procedures
Test Scope	Simulation of a vehicle affected by a biohazard contamination.
Test Scale	Only one vehicle will be simulated as affected by biohazard
Prerequisites	<ul style="list-style-type: none"> • Full system must be operating, simulating a regular service period • ERCs and EROs must be aware and be trained on the appropriate contaminated train Work Instruction and have required HazMat equipment. • Test to be monitored by 2 OCT staff to verify procedural compliance and monitor system recovery times.
Test Description	<ul style="list-style-type: none"> • Verify that the operational procedure (attached below) for vehicle biohazard / contaminated train is followed <div style="text-align: center;">  Contaminated Train V0.1 Draft.docx </div> <ul style="list-style-type: none"> • Identify the start time of the simulation and the time at which the entire system returns to normal operation
Pass/Fail	<ul style="list-style-type: none"> • If, in the opinion of the monitoring staff, the OCT staff did NOT appear competent in addressing the issue then the test is FAILED. A failed test means that the same crew will be briefed on the errors and will required to re-run the same test again • If, in the opinion of the monitoring staff, the OCT staff DID appear competent in addressing the issue then the test is PASSED

	Crew Being Monitored	
	Pass/Fail	
	Assessor	