

TORONTO TRANSIT COMMISSION REPORT NO.

MEETING DATE: January 21, 2015

SUBJECT: Yorkdale Fatality of September 14, 2012 – Update to
Management Action Plan

INFORMATION ITEM

RECOMMENDATION

The Board receive this report for information.

FUNDING

There are no budgetary impacts associated with this report.

BACKGROUND

On June 24, 2014, the Board received for information, the first update to the Management Action Plan to address recommendations identified by the investigation into the employee fatality north of Yorkdale subway station on September 14, 2012. This report is a further update on management's progress in implementing these recommendations.

DISCUSSION

Implementation is well advanced on all actions and a number have been closed. Progress is monitored monthly at the Safety Executive meeting chaired by the CEO. For actions with a longer time horizon, Management will prepare a further update for the December 2015 Board meeting.

JUSTIFICATION

Management and the Board have a duty of care to take every precaution reasonable in the circumstances for the protection of a worker. The investigation of the fatality at Yorkdale points to weaknesses in the safety management system that must be addressed in order to ensure the safety of track maintenance work. Management is committed to implement the corrective actions and report back to the Board until they are all complete.

13.3

Attachment: Yorkdale Fatality Update, January 13, 2015



YORKDALE FATALITY REPORTS UPDATE

January 13, 2015





Corporate Report Recommendations Update



YORKDALE FATALITY UPDATE



Recommendation	Response/Action	Status
5.1 Improve the interface between Transit Control Centre & Rail Infrastructure practices to ensure safe maintenance activities.	Establish a permanent Track Level Safety Team; a first priority assignment will be made to implement this recommendation.	Status complete. The team is in place, led by a full time Staff position (Jose Pereira). Committee membership includes Track Level workers & forepersons from both revenue and non-revenue timeframes as well as Training & Development, Transit Control and Subway Operators.



YORKDALE FATALITY UPDATE



Recommendation	Response/Action	Status
5.1 Implement a uniform process for reporting, investigating & communicating safety incidents.	Action by Corporate Safety.	Status complete. The Incident Reporting & Investigation Corporate Program has been implemented.



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Recommendation	Response/Action	Status
5.1 TTC line calls to advise workcar operators of walking inspections.	a) To be reviewed in more detail by Track Level Safety Team. continued...	a) Status complete. Team is in place, led by a full time Staff position (Jose Pereira). Committee membership includes Track Level workers & forepersons from both revenue and non-revenue timeframes as well as Training & Development, Transit Control and Subway Operators. continued...



YORKDALE FATALITY UPDATE



Recommendation	Response/Action	Status
<p>5.1...continued</p> <p>TTC line calls to advise workcar operators of walking inspections.</p>	<p>...continued</p> <p>b) Workcar operators are required to seek permission from Transit Control prior to moving once work zone has been cancelled/ended. If there are crew in their path, they will be advised by Transit Control.</p>	<p>...continued</p> <p>b) Process assessment and implementation complete.</p> <p>Work practice developed, implemented and in place by Transit Control.</p> <p>SOP being formalized by Subway Transportation staff.</p> <p>SOP to be finalized and approved by Q1 2015.</p>



YORKDALE FATALITY UPDATE



Recommendation	Response/Action	Status
<p>5.2 Implement the recommendations in Rail Cars & Shops Headlight Study.</p>	<p>Install LED headlights on all workcars with the ability to dim the light when they are stationary.</p>	<p>A new headlight standard was developed (There was no previous TTC or industry standard).</p> <p>Workcar fleet installation of LED headlights was completed in May 2014.</p> <p>The low beam modification for stationary workcars has been completed on 45 of 47 workcars.</p> <p>All 47 will be complete by end of Q1 2015.</p>

YORKDALE FATALITY UPDATE



Recommendation	Response/Action	Status
<p>5.2 Dedicated watchperson during walking inspection as an interim measure pending further analysis.</p>	<p>a) Assess work force impact, feasibility & improvement vs. cost of a dedicated watchperson during maintenance activities.</p> <p>continued...</p>	<p>a) Assessment complete.</p> <p>Report/recommendations were circulated and reviewed by stakeholders.</p> <p>A Job Safety Analysis template was distributed in early December, 2014. Job evaluation and analysis to be performed and documented.</p> <p>Estimated completion date for Job Safety Analysis: January 31, 2015.</p> <p>continued...</p>

YORKDALE FATALITY UPDATE



Recommendation	Response/Action	Status
<p>5.2 ...continued</p> <p>Dedicated watchperson during walking inspection as an interim measure pending further analysis.</p>	<p>...continued</p> <p>b) Introduce “Train Time is Any Time in Any Direction” slogan.</p>	<p>...continued</p> <p>b) Complete</p>
<p>5.2 Apply new technologies in track level warning devices for maintenance work.</p>	<p>a) WAW (Work Area Warning) System to be implemented during revenue hours.</p> <p>continued...</p>	<p>a) Complete.</p> <p>The Work Area Warning system was fully implemented on Line 2 & Line 4 during revenue service June 8th, 2014 and on Line 1, on December 1st, 2014.</p> <p>continued...</p>



YORKDALE FATALITY UPDATE



Recommendation	Response/Action	Status
<p>5.2 ...continued</p> <p>Apply new technologies in track level warning devices for maintenance work.</p>	<p>...continued</p> <p>b) ProTran identified as a useful technology appropriate for non-revenue operations.</p>	<p>...continued</p> <p>b) Assessment complete.</p> <p>The Track Level Safety Team recommends expanding the Work Area Warning system to the non-revenue window in lieu of using the current ProTran system. Technology is improving due to implementation of new legislation in the USA and will be assessed as it becomes available in future.</p> <p>continued...</p>



YORKDALE FATALITY UPDATE



Recommendation	Response/Action	Status
<p>5.2 ...continued</p> <p>Apply new technologies in track level warning devices for maintenance work.</p>	<p>...continued</p> <p>b) ProTran identified as a useful technology appropriate for non-revenue operations.</p>	<p>...continued</p> <p>Rail Cars & Shops and Plant Maintenance are co-developing the Work Area Warning system for use in the Maintenance window and for the Workcar fleet. Development work in progress.</p>
<p>5.3 Review workcar operator duties to identify, understand & correct distraction issue.</p>	<p>A consultant, Human Factors North, was retained to conduct an evaluation of workcar operator duties.</p>	<p>Complete.</p> <p>Subway Infrastructure has developed action plans to manage Workcar operator distraction.</p> <p>Implementation of action plans is ongoing.</p>



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Recommendation	Response/Action	Status
<p>5.3 Evaluate rules & procedures of the blue light system, including its use during non-revenue hours.</p>	<p>Establish a permanent Operating Rules Committee to review this recommendation inline with a first principles review of the Subway Rule Book.</p> <p>continued...</p>	<p>a) Complete. The Operating Rules Committee is in place, led by a full time Staff position (Sandra Sutherland). Committee membership includes Track Level workers & forepersons from both revenue and non-revenue timeframes as well as Training & Development, Transit Control and Subway Operators. continued...</p>



YORKDALE FATALITY UPDATE



Recommendation	Response/Action	Status
<p>5.3 ...continued</p> <p>Evaluate rules & procedures of the blue light system, including its use during non-revenue hours.</p>	<p>...continued</p> <p>Establish a permanent Operating Rules Committee to review this recommendation inline with a first principles review of the Subway Rule Book.</p>	<p>...continued</p> <p>b) The committee is conducting an ongoing review of the Subway Rule Book and a detailed review of Blue Light Rules. This group is in close consultation with the Track Level Safety Team regarding expanding Blue Lights to the Non-Revenue window.</p>



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Recommendation	Response/Action	Status
<p>5.4 Conduct first principles review of the Subway Rule Book & related documents to reflect the specific needs of non-revenue night maintenance.</p>	<p>Establish a permanent Operating Rules Committee, led by a full time staff position, to commence a first principles review of the Subway Rule Book.</p>	<p>Complete.</p> <p>The Operating Rules Committee review of the Subway Rule book is an ongoing, continuous improvement process.</p> <p>A review of Subway Rulebook structure and wording continues and will result in further modification to ensure the non-revenue window is fully reflected with detailed examples, similar to the revenue window.</p>



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Recommendation	Response/Action	Status
<p>5.4 Establish a governance process for the SRB to include all stakeholders, foster improvement, provide authoritative interpretations on rules & effectively enforce the rules.</p>	<p>Establish a permanent Operating Rules Committee, led by a full time staff position, to commence a first principles review of the Subway Rule Book.</p>	<p>Complete.</p> <p>Currently the Committee has formalized all Rulebook updates currently published in Red-Top form and is in process of re-issuing updated sections by end of Q1 2015.</p> <p>The Operating Rules Committee's review of the Subway Rule book is an ongoing, continuous improvement process; their purpose is governance of ongoing development and change to the Subway Rulebook.</p>





Track and Structure JHSC Recommendations Update



YORKDALE FATALITY UPDATE



Recommendation	Response/Action	Status
<p>1) Install seat interlock in workcars such that the vehicle cannot move if the seat is not in the forward-facing position.</p>	<p>Conduct ergonomic & feasibility studies.</p>	<p>a) Complete. Human Factors North conducted ergonomic studies of the Workcar fleet. Their conclusions and recommendations were accepted.</p> <p>b) An interlock prototype was implemented on RT28 and was assessed as acceptable. Estimate for design and implementation of a seat/control interlock on remaining 20 cars is underway. Upgrades will be implemented in parallel with other Workcar upgrade projects during 2015.</p> <p>Completion expected by Q4, 2015.</p>



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Recommendation	Response/Action	Status
<p>2) Develop a standard & an implementation plan for workcar headlights in regards to illumination strength & alignment.</p>	<p>RC&S to develop standard & retrofit workcars with new headlights. Mod's required for low beam when vehicle is parked.</p>	<p>a) Standard Complete.</p> <p>A new headlight standard was developed by RC&S (No previous TTC or industry standard existed). Workcar fleet installation of LED headlights was completed May 2014.</p> <p>b) The low beam modification for Workcars when parking brake applied has been completed on 45 of 47 Workcars and continues.</p> <p>Complete installation by end of Q1, 2015.</p>



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Recommendation	Response/Action	Status
<p>3) Study lighting level throughout the system & upgrade to meet standard where found deficient.</p>	<p>Feasibility study to change operating standard from replace-upon-failure to timed replacement of lights.</p>	<p>Subway Infrastructure's Electrical Engineering section will be assessing the concept of 'replace before fail' vs. 'replace on failure' for labour and non-labour costing of tunnel/open cut lighting as well as design and implementation of systems to support the concept.</p> <p>Assessment will be completed by end of Q1 2015.</p> <p>Implementation plan will follow the assessment. Implementation plan completion scheduled by Q2 2015.</p> <p>Implementation to follow.</p>



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Recommendation	Response/Action	Status
<p>4) Dedicated watchperson during walking inspection as an interim measure pending further analysis.</p> <p>continued...</p>	<p>a) Assess work force impact, feasibility & improvement vs. cost of a dedicated watchperson during maintenance activities.</p> <p>continued...</p>	<p>a) Assessment complete.</p> <p>Report and recommendations are in circulation for review by stakeholders.</p> <p>Job Safety Analysis template has been completed and distributed to Subway Infrastructure Managers.</p> <p>The evaluation and analysis to be performed and documented. Estimated completion date January 31, 2015.</p> <p>continued...</p>



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Recommendation	Response/Action	Status
4) continued... Dedicated Watchperson...	...continued b) Introduce “Train Time is Any Time in Any Direction” slogan.	...continued b) Complete
5) Automated system to give indication to operator if someone is at track level. continued...	a) Hardwired blue light at the ends of every station. continued...	a) An approved capital project is underway to implement hardwired blue lights system-wide. That project is scheduled for completion by Q4, 2018. continued...



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Recommendation	Response/Action	Status
<p>5)...continued</p> <p>Automated system to give indication to operator if someone is at track level.</p>	<p>...continued</p> <p>a) Hardwired blue light at the ends of every station.</p> <p>b) Other means of technology.</p> <p>continued...</p>	<p>...continued</p> <p>A Prototype hardwired Blue Light is currently under development. Estimated timing for prototype test by end of Q1 2015.</p> <p>b) Complete. The Track Level Safety Team has completed an assessment of the Bombardier ProTran system and recommends expanding the Work Area Warning system to the non-revenue window in lieu of implementing the ProTran system.</p> <p>continued...</p>



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Recommendation	Response/Action	Status
<p>5) ...continued</p> <p>Automated system to give indication to operator if someone is at track level.</p>	<p>...continued</p> <p>b) Other means of technology.</p>	<p>...continued</p> <p>This type of technology is improving due to implementation of new legislation in the USA and new technologies will be re-assessed as systems become available in future.</p> <p>Rail Cars & Shops and Plant Maintenance are co-developing the Work Area Warning system for use in the Maintenance window and for the workcar fleet.</p> <p>Development work in progress.</p>



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Recommendation	Response/Action	Status
<p>6) Announcement by Transit Control before & after a work zone or walking inspection.</p> <p>continued...</p>	<p>a) Blue Light System during revenue hrs.</p> <p>b) Consider Blue Light System for non-revenue hours.</p> <p>continued...</p>	<p>a) Complete. Implemented 2008. Provides a visual warning to all approaching trains in the revenue window of workers ahead.</p> <p>b) The Track Level Safety Team recommends implementation of the Blue Light system during the maintenance (Non-Revenue) window. This recommendation is under review by Subway Operations Management. Decision anticipated by end of Q4 2014.</p> <p>continued...</p>



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Recommendation	Response/Action	Status
<p>6) ...continued</p> <p>Announcement by Transit Control before & after a work zone or walking inspection.</p> <p>...continued</p>	<p>...continued</p> <p>c) Workcar operators to seek permission from Transit Control prior to moving.</p> <p>...continued</p>	<p>...continued</p> <p>c) Process assessment and implementation complete.</p> <p>Work practice developed, implemented and in place by Transit Control.</p> <p>SOP finalization and approval by Q1 2015.</p> <p>...continued</p>



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Recommendation	Response/Action	Status
<p>6) ...continued</p> <p>Announcement by Transit Control before & after a work zone or walking inspection.</p>	<p>...continued</p> <p>d) Ergonomic study to look at operator distractions.</p>	<p>...continued</p> <p>d) The consultant's evaluation of Workcar operator duties is complete.</p> <p>Subway Infrastructure has developed action plans to manage Workcar operator distraction.</p> <p>Implementation of action plans is ongoing.</p>



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Recommendation	Response/Action	Status
<p>7) Give operators of workcar/train a complete update of what is ahead of them prior to leaving the work zone or yard.</p>	<p>Improve communication prior to vehicle movement by RI & TCC.</p>	<p>Process assessment and implementation complete.</p> <p>Transit Control provides instruction and look ahead information regarding track level activities ahead of workcars in smaller route segments to work car operators travelling to and from Non-Revenue work locations to ensure they are aware of all potential exposures.</p> <p>This work practice is developed, implemented and in use by Transit Control staff.</p> <p>SOP completion by Q1 2015.</p>



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Recommendation	Response/Action	Status
<p>8) Develop effective safety inspections & auditing.</p>	<p>a) Conduct gap analysis for QA checks (RI vs. Safety & Environment).</p> <p>b) Develop KPI & draft Corrective Action Review Report for RI (Rail Infrastructure)</p>	<p>a) Complete.</p> <p>A gap analysis to identify safety exposures not currently audited and to identify corporate exposure/behaviour audits not supported by departmental audits has been completed.</p> <p>b) Draft KPI & Corrective Actions Review Report was provided to the Track & Structure JHSC on Oct 1, 2014. Currently in process of implementing supporting departmental QA audits.</p>
<p>continued...</p>	<p>continued...</p>	<p>continued...</p>



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Recommendation	Response/Action	Status
<p>8) ...continued</p> <p>Develop effective safety inspections & auditing.</p>	<p>...continued</p> <p>c) Develop more detailed Safety QA checks.</p>	<p>...continued</p> <p>c)A suite of QA checks have been developed and are conducted by Forepersons.</p> <p>Subway Infrastructure is developing an audit plan to perform 3rd party audits on QA checks conducted by forepersons.</p> <p>Full implementation by end of Q1 2015; this is an ongoing process.</p>



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Recommendation	Response/Action	Status
<p>9) Check Subway & SRT for sharp curves for having suitable signs in case of a blue light/flag.</p> <p>continued...</p>	<p>a)Blue Light Task Force to identify gaps of areas on curves.</p> <p>b)Develop means of communications between IRS/JHSC & Track Level Safety Team.</p> <p>continued...</p>	<p>a)Complete. Subway Infrastructure Signals & Train Control Engineering conducted a follow-up analysis to identify vertical curves and open cut curves that were not included in the initial assessment.</p> <p>b)Complete. Track Level Safety Team actively engaging workers and JHSC's to improve track level safety. Creating an SOP on conducting effective Safety Talks.</p> <p>continued...</p>



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Recommendation	Response/Action	Status
<p>9) ...continued</p> <p>Check Subway & SRT for sharp curves for having suitable signs in case of a blue light/flag.</p>	<p>...continued</p> <p>c) Engineering to develop a plan to conduct extent of condition for where blue speed signs can be placed.</p>	<p>...continued</p> <p>c) Complete.</p> <p>Transportation JHSC's have reviewed and confirmed appropriate 'sightlines' for vertical and open cut curve sightlines.</p> <p>Installation of signage completed Q4 2014.</p>



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Recommendation	Response/Action	Status
<p>10) Clarify SRB to reduce potential for unsafe actions in a complex situation.</p> <p>continued...</p>	<p>Establish Operating Rules Committee to identify changes required in SRB to specifically address non-revenue maintenance.</p> <p>continued...</p>	<p>a) Complete.</p> <p>The Operating Rules Committee is in place, led by a full time Staff position (Sandra Sutherland). Membership includes Track Level workers & forepersons from both revenue and non-revenue; Transit Control; Training & Development; Subway Operators.</p> <p>continued...</p>



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Recommendation	Response/Action	Status
<p>10) continued...</p> <p>Clarify SRB to reduce potential for unsafe actions in a complex situation.</p>	<p>continued...</p> <p>Establish Operating Rules Committee to identify changes required in SRB to specifically address non-revenue maintenance.</p>	<p>continued...</p> <p>b) Their review of the Subway Rule book is an ongoing, continuous improvement process.</p> <p>A review of Subway Rulebook structure and wording continues and will result in further modification to ensure the non-revenue window is fully reflected with detailed examples, similar to the revenue window.</p>



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Recommendation	Response/Action	Status
<p>11) Develop the annual review of SRB by a committee including all stakeholders & issue the revision with acknowledgement by the receiving employees.</p>	<p>To be addressed by the Operating Rules Committee.</p>	<p>Complete.</p> <p>Currently the Committee has formalized all Rulebook updates currently published in Red-Top form and will re-issue updated sections by end of Q4 2014.</p> <p>Their review of the Subway Rule book is an ongoing, continuous improvement process.</p> <p>The Committee's purpose is development and governance of the Subway Rulebook.</p>



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Recommendation	Response/Action	Status
12) Check with other transportation authorities on their track level practices.	To be looked at by Operating Rules Committee.	<p>The Operating Rules Committee and Track Level Safety Team are fully functional groups, each led by a dedicated staff person.</p> <p>Their Project Plan's include a BOB/wow (Best of Best/Worst of Worst) joint assessment of industry best practices using APTA, Comet, NOVA, NTSB as resources.</p> <p>This assessment is an ongoing process.</p>



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Recommendation	Response/Action	Status
13) Review & revise all work methods & SOP's working with the front line supervisory staff.	SOP owners to review documents on a regular basis & communicate revisions to those that require/use the document.	<p>Complete.</p> <p>As part of its 5 year plan, Subway Infrastructure's Procedures section has created a continuous improvement plan, which includes review and re-write (If required) of all current Departmental Standard Operating Procedures over a revolving 5 year period.</p> <p>This plan is an ongoing, continuous improvement process.</p>



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Recommendation	Response/Action	Status
14) Provide additional training for workers who have supervisory responsibilities.	Section managers to identify workers who required additional training. RI & T&D to develop a training program to be implemented by T&D.	<p>Complete.</p> <p>Identification of workers who lead crews was completed June, 2014.</p> <p>Training & Development staff and Subway Infrastructure Safety Consultants are co-developing curriculum specific to workers that lead teams. Curriculum completed December 31, 2014.</p> <p>Worker training to be provided by end of Q1, 2015.</p>



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Recommendation	Response/Action	Status
<p>15) Make use of extended maintenance windows such as early/weekend closure.</p>	<p>All major projects to be considered for extended work windows. Maximize use of closure by including regular maintenance work.</p>	<p>Complete.</p> <p>Over the past 2 years, Subway Operations has increased use of extended work windows (Early closures, Late starts, Weekend Closures) for maintenance work.</p> <p>Wherever possible, additional work in closed sections is considered.</p> <p>Currently there is work being done to ensure use of shared work time/space is both efficient and safe.</p>



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Recommendation	Response/Action	Status
<p>16) Annual Safety Week to promote safety culture</p>	<p>Enable employee discussion & participation during the Track Level Safety Roundtable & through Track Level Safety Team & Operating Rules Committee.</p>	<p>Complete.</p> <p>A second set of 'track level' 'Roundtables' was completed in February 2014.</p> <p>The Operating Rules Committee and Track Level Safety Team are both in place, led by 2 dedicated staff positions.</p> <p>Both teams also include a number of Track Level workers and meet with work groups at monthly 'Safety Talks'.</p>



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Recommendation	Response/Action	Status
17) Finalize & implement the new Incident Management Program	Corporate-wide process for reporting, investigating & communicating all safety-related incidents.	Complete. The Incident Reporting & Investigation Corporate Program has been implemented.

