REVIEW OF ELEVATING DEVICES SAFETY PROGRAM

This report is set out in three parts. Part I describes the mandate provided by the Minister and sets out the circumstances which led to a number of elevating devices being dropped from the inspection work orders resulting in these elevating devices not receiving periodic inspections in keeping with the TSSA protocol. Included as well are the steps taken by the TSSA and the conclusions drawn from this review. Part II provides an overview of the elevating devices program and the challenges being faced. Part III attempts to suggest a way forward by making observations and recommendations flowing therefrom, for consideration.

PART I

1.0 INTRODUCTION

1.1 Request from the Minister of Consumer Services

A letter dated May 18, 2011, signed by the Minister of Consumer Services (Ministry) was directed to the Chief Safety and Risk Officer (CSRO) of the Technical Standards and Safety Authority (TSSA) requesting that the CSRO provide to the Minister terms of reference for a review of the TSSA’s Elevating Devices Program. It was specifically requested that the review in respect of the elevating devices program examine:

· Policies and procedures in respect of the identification of all operational risks;

· Data systems to ensure that they are comprehensive, complete and accurate;

· To ensure that appropriate risk controls are in place.
1.2 Terms of Reference

As requested, the following terms of reference were submitted to the Minister for consideration:

1. Review the existing policies and procedures in an effort to identify any gaps or weaknesses that may have contributed to several devices being excluded from scheduled, periodic inspections;

2. Examine the data system and the steps taken to migrate information from the original AS400 system to the POSSE system and ultimately to the Oracle system so as to understand how data was dropped or lost;

3. In respect of 2 above, review what steps have been taken by the TSSA to ensure that the elevating devices database is now complete and up to date to ensure all licensed devices are on the system for the purpose of scheduling periodic inspections;

4. Examine the risk identification based periodic inspection scheduling system to determine how risk is defined and addressed. In this context such questions as – how is the severity of the risk defined, the timeliness of addressing those risks deemed to need urgent attention and the authority resident with the Inspectors to take appropriate and timely action;

5. Examine the processes currently in place at TSSA to ensure:

   - That the elevating devices database is now up to date and complete so as to ensure all licensed devices are identified for inspection purposes;

   - That processes are in place for a periodic review of the elevating devices database to ensure that the list of devices remains accurate and complete for the purpose of identifying or scheduling them for inspection.
The terms of reference also suggested a review, similar to that outlined above, be conducted subsequent to the review of elevating devices of the following programs:

1. Amusement Devices;
2. Boilers and Pressure Vessels;
3. Fuels;
4. Operating Engineers;
5. Ski Lifts;
6. Upholstered and Stuffed Articles.

1.3 Approval of Terms of Reference

A letter was received from the Minister of Consumer Services dated June 2, 2011, approving the terms of reference as set out above.

1.4 BACKGROUND

1.5 An Occurrence

On May 11, 2011, an incident occurred involving a freight elevator resulting in a worker being injured. As is the case with any incident in an area under TSSA jurisdiction, the TSSA examined all relevant data related to the device in question to determine, among other things, when the device was last inspected.

As the result of their review, the TSSA learned that:

- The device was last inspected on September 13, 2005;
- The TSSA’s information system which indicates to Inspectors that a device is due for a periodic inspection did not generate the appropriate notice;
- A software anomaly (described below) in a legacy system resulted in the system not generating an indication that a periodic inspection was due;


- On further examination, 32 devices had been affected by the same software anomaly in that a periodic inspection notice had not been generated;

- Data in the system was accurate in that it contained all other required information on each of the 32 elevating devices;

- Each of the 32 devices had received an initial inspection but that fact was not recognized in POSSE;

- A second elevating device existed on the premises where the incident occurred and it had been inspected as part of normal processes and had been determined to be safe.

1.6 Actions Taken by the TSSA

On learning that 32 devices had not been identified by the data system as being overdue for inspection, the TSSA immediately:

- Dispatched Inspectors to conduct the necessary periodic inspections which were overdue;

- Instructed Inspectors to take whatever action is necessary in keeping with TSSA’s normal safety review practices in the inspection of elevating devices;

- Determined that of the 32 devices – 11 were operational and in use. (Of the 11 devices in use, 2 were issued orders resulting in TSSA shutdowns and 9 were issued orders with timelines for compliance while remaining in use; 5 devices were in ‘customer shutdown’ and 16 had been dismantled);

- Of the 11 devices that were in use 9 had a current license; 2 did not;

- Conducted a search of databases for other devices in the other safety programs that may have experienced the same software anomaly. None were found;

- Generated a list of Type B lift platform devices (a device the same as or similar to the one at which the event occurred) to determine any need for
spot checks based on the outcome of the review and to determine if any mechanical weakness existed;

- Created reporting parameters to ensure active device/facility maximum inspection time frames are monitored.

1.7 THE ELEVATING DEVICES INFORMATION SYSTEM

1.8 General

The TSSA was created in 1996 and received certain delegated authorities from the then Ministry of Consumer and Commercial Relations – now the Ministry of Consumer Services. Under the terms of the Memorandum of Understanding (MOU), the TSSA is accountable for the performance of its delegated authorities to administer the Technical Standards and Safety Act, 2000, and associated regulations.

With the creation of the TSSA, all of the relevant data contained in the legacy system of the Ministry was transferred to the TSSA. Given the limitations of the legacy system inherited from the Ministry, an information management system called POSSE was created with improved functionality and which was better able to meet the burgeoning demands on the system.

By March 2005, the management of the TSSA determined that POSSE lacked the necessary systems functionality with a resulting negative impact on both productivity and customer service. Following the process of issuing a request for proposal and demonstrations by potential vendors, a process re-engineering project was approved in 2007. In March 2007, a project manager was hired and proposals for implementation were issued. The final selection and approval for a new system was given in May 2007.

1.9 The Conversion from POSSE to Oracle

The conversion and migration of data from a legacy system to any new system is expensive, time consuming and invariably complex. The conversion from POSSE and its predecessor system to Oracle had all of these variables and more given that the project involved the migration of approximately 12 years of data from POSSE to Oracle. While there was a carefully prepared and executed Conversion Plan, fundamental differences
between the two systems, business processes and the degree of duplicate work that would have been required by all staff, made it impossible to run the two systems (POSSE and Oracle) in parallel, a process that may have helped to identify post implementation issues, inconsistencies and missing data.

Complicating the conversion were the multiple source tables and indices within the POSSE system, the sheer volume of data and certain data quality issues resident in POSSE. Significant effort was made to ensure that all data was ready for conversion and the implementation team was satisfied with the data conversion success rates.

Unfortunately, in respect of the inspection scheduling process, the conversion did not allow for a reconciliation of the data moved from POSSE to Oracle in a real time way and therefore there was no direct comparison between POSSE and Oracle to ensure that the number of elevating devices and the number of open periodic inspections was accurate or that a device had not been identified for a periodic inspection. While the conversion exercise from POSSE to Oracle was successful in moving data which identified and provided information on the numbers and locations of elevating devices, a business ‘rule’ in POSSE in respect of inspection scheduling led to the system not generating the required periodic inspection notice.

1.10 The ‘Glitch’

The inspection scheduling process within POSSE functioned – in very simplistic terms – in the following way:

- As a new elevating device came on line it was subject to licensing and an initial inspection;

- The initial inspection data was recorded in POSSE;

- When POSSE recorded that the initial inspection was completed, it then automatically generated an order for a periodic inspection based on the inspection regime in existence at the time.
In the absence of a data entry indicating that an initial inspection had been completed, POSSE would fail to generate an order for a periodic inspection.

In the case of the 32 elevating devices referenced earlier in this report, POSSE had no record of an initial inspection and therefore POSSE did not generate a periodic inspection order for these devices. Nonetheless, TSSA has advised that, as a result of their review following the incident, they have been able to confirm that each of the 32 devices had in fact been subjected to an initial inspection. The fact that an initial inspection had taken place may not have been entered in the system or indeed may have been entered incorrectly in some way thus resulting in POSSE not generating an order for the periodic inspections of the 32 devices.

TSSA management has indicated that, of the 32 devices which ‘fell out of’ the inspection cycle as the result of the programming anomaly referenced above, and as a result of the immediate follow-up by TSSA, that 11 only remained operational and in use. The date of last inspection for these 11 elevating devices which were found to be still operational ranged from 1989 to 2009.

1.11 SUMMARY

On May 11, 2011, an incident occurred resulting in the injury of a worker who fell down an elevator shaft. The TSSA, as the agency responsible for the safety of elevating devices in Ontario, undertook to examine its records on the safety/inspection history of the device in question.

The TSSA investigation revealed that the device in question had not been inspected since 2005. The TSSA further determined that a total of 32 elevating devices had not been subject to periodic inspections in accordance with existing protocols. Further investigation was undertaken.

The device in question existed in the TSSA first computerized data system (AS400). In 2002, data from AS400 was migrated to a new system (POSSE) and data from POSSE was migrated to Oracle in 2009 as the TSSA undertook to improve their data systems over time.

The POSSE system contained a business rule (logic) which resulted in a device being scheduled for a periodic inspection ONLY AFTER the system recorded that an initial inspection had taken place. As POSSE contained no
record of the device in question having had an initial inspection, POSSE did not generate a periodic inspection order. The same lapse occurred with the 31 other devices.

The transition from POSSE to Oracle did not allow for a reconciliation of all data content in the two systems as Oracle was being built. Given that POSSE had no record that an initial inspection had been carried out on the 32 devices, POSSE did not generate, because of the business logic in POSSE, an order within POSSE for the usual periodic inspections. Given that the requirement for the periodic inspections of the 32 devices had not been generated in POSSE, combined with the inability to reconcile data between the two systems as Oracle was being built, resulted in the data in respect of the inspection requirements of the 32 devices being absent from Oracle.

A thorough follow-up review has been completed by the TSSA who are confident that all devices impacted by the legacy software anomaly are now captured in the Oracle system and is up to date as regards elevating devices in Ontario.

Given the very thorough review by the TSSA referenced above, there is every reason to have confidence that the elevating devices database is as current, as complete and as accurate as it can be accepting that there are information limitations (e.g. owners putting an elevator into service, owner failure to notify TSSA when a device is taken out of service or upgrading an elevator without notifying the TSSA) within which the TSSA must currently function and over which they have limited control or influence.

PART II

2.0 THE ELEVATING DEVICES PROGRAM

2.1 Elevating Devices

Under the law in Ontario, the classes of elevating devices which are subject to inspection include:

- Elevators;
- Dumbwaiters;
- Stage Lifts;
• Escalators;
• Moving walks – shopping cart conveyors;
• Freight platform lifts and material lifts;
• Lifts for persons with physical disabilities;
• Manlifts;
• Passenger ropeways;
• Construction hoists;
• Incline lifts;
• Special elevating devices;
• Parking garage lifts.

**NOTE:** Elevating devices in dwelling houses are not included in the classes above and are not subject to TSSA inspection.

### 2.2 The Regulatory Regime

The regulatory requirements associated with elevating device safety are prescribed within:

• The Technical Standards and Safety Act, 2000;
• Ontario Regulation 209/01, Elevating Devices;
• Ontario Regulation 222/01, Certification and Training of Elevating Device Mechanics; and
• Ontario Regulation 223/01 Codes and Standards Adopted by Reference.

Specifically, the TSSA:

• Reviews and registers design submissions for elevating devices;
• Licenses elevating devices;
• Conducts inspections;
• Performs incident investigations;
• Registers contractors; and
• Administers and enforces training and certification requirements.
2.3 **The Process, Policies and Procedures**

Licensing:

There are two phases to the licensing process:

1. **Design Review:** Before an elevating device is constructed, a design submission, sealed by a professional engineer must be submitted to the TSSA. Engineering Services of the TSSA reviews the elevating device designs to ensure the equipment is in compliance with the Act, regulations and adopted safety standards. Once the review is complete to the satisfaction of the TSSA engineers, the design is registered and it receives an Ontario Elevating Device Registration Number. Following the completion of the construction of the device, TSSA must inspect it to ensure it conforms to the standards and is safe to operate before being put into service.

2. **Licensing the Device:** Once the device passes initial inspection, a license is issued by the Licensing and Registration office (LR) of the TSSA. A renewal notice is sent to the owner of the elevating device 60 days prior to the expiry date of the license. The license must be renewed annually. Once the license fee is received, the new license is issued. The owner does not have to make a request for license renewal. If the licensing process is followed, TSSA inspectors are aware of a new elevator being put into service from which flows automatically the periodic inspection process. If the owner fails to advise the TSSA that a new elevator has been installed and put into service, the TSSA will have no way of knowing that this has occurred. When a license has not been renewed it is flagged by LR and a letter is generated to the owner 90 days after the expiration date notifying the licensee that it is illegal to operate a device without a license.

**Licensing – General:**

Legislation in Ontario stipulates:

- No person shall put into service a newly installed elevating device until it is licensed;
No owner is allowed to operate an elevating device or permit it to be operated unless it is licensed and it complies with the Regulation, the code adoption document and any applicable director’s order;

An initial license for an elevating device expires one year after the date of its issue unless another expiry date is specified on the license;

A renewal for a license for an elevating device shall be for the period specified on the license;

A temporary license may be issued for an elevating device but only for a period not to exceed six months.

Inspections and Maintenance:

Once in use, the device is subject to a periodic inspection by TSSA on a predetermined inspection interval using a risk based scheduler (RBS). If inadequacies are detected, inspectors may issue inspection orders which are based on national codes and Ontario regulations in respect of safety requirements.

Orders are directives obliging the owner of the device to provide the necessary maintenance to ensure the device meets existing codes and operates safely. When a safety non-compliance issue is detected and where, in the professional opinion of the TSSA Inspector, that issue poses no immediate risk to the public, a directive can be issued in which the owner is given a reasonable period of time to comply with the directive and a follow-up inspection will normally be conducted to ensure compliance. Failure to comply with a directive or if the needed repair is deemed by the Inspector to be sufficient to render the device unsafe, the Inspector has the authority to take the device out of service (sealing).

It is the owner’s responsibility to ensure that the device is properly maintained by a TSSA registered contractor and that all work on the device is conducted by a TSSA certified mechanic.
• There are only two circumstances where an owner is NOT obliged to comply with a TSSA directive. They are when:

1. The device has been taken out of service; or
2. The device has been dismantled.

NOTE: Currently, there is no legal obligation imposed on an owner to inform TSSA that a device has been dismantled or taken out of service.

• Inspections of existing devices are based on a risk-based inspection model. The frequency with which a device is inspected depends on the level of risk TSSA calculates as determined by the model. The higher the level of risk as determined by the model, the more frequent the inspections. The model provides that every device is inspected at least once every three years. The model may also require a shorter period between inspections (6 months) if the risk is deemed to be higher. The current mathematical model uses the following risk factors:

1. Safety performance rating of past periodic inspections;
2. Inspector ranking of device;
3. Safety performance rating of the company that maintains the elevating device;
4. Age of device;
5. Type of building.

2.4 WORKLOAD IN THE ELEVATING DEVICES SAFETY PROGRAM

2.5 Background

The elevating devices safety program has three areas of focus:

1. Elevating devices as categorized above;
2. Amusement Devices (e.g., rides at Canada's Wonderland Park);

The rationale for this combination of responsibilities is that:

• The mechanics and structure of both amusement rides and ski lifts have some similar features to those of elevating devices in that they use
hydraulics, cables, motors and electronics and therefore require similar inspection skills and experience;

- As amusement rides and ski lifts are seasonal/part-time in nature, the combination allows TSSA to maximize the use of their skilled and experienced Inspectors.

2.6 Statistics

The following statistics are representative of the Elevating Devices Safety Program activity for 2009/10:

- There are approximately 50,000 operating elevators in Ontario;
- Approximately 2,000 new elevators come into service each year;
- Approximately 4,000 elevating device designs were reviewed and registered;
- Approximately 16,300 periodic inspections were conducted;
- A total of approximately 46,000 orders were issued for all types of inspections; (about 33,900 resulted from periodic inspections and the balance from initial inspections and incident investigations);
- There were 211 reported occurrences resulting in 6 serious injuries and no deaths.

PART III

3.0 LOOKING AHEAD

3.1 General

In making the recommendations and observations that follow, I recognize and acknowledge that the TSSA is actively pursuing a number of initiatives intended to further improve the safety of the people of Ontario. Many of those initiatives will touch on aspects of the observations and recommendations made below.
3.2 Observations and Recommendations:

1) Observation: There is no question but that the TSSA strives to ensure that each database in respect of a safety inspection area is accurate and complete. However, as this incident has reinforced, it is extremely difficult to ensure the accuracy and completeness of 100% of all databases in a consistent way at this time. Nonetheless, attesting on an annual basis to the completeness, validity and accuracy of all data in the TSSA’s databases is theoretically possible so long as reasonable definitions and sampling procedures are developed. The requirement for an annual attestation report will focus attention on database comprehensiveness and will result in the databases moving towards greater accuracy and completeness as those issues which militate against 100% accuracy are addressed over time. An annual attestation report from the TSSA to the Minister would provide the kind of reassurance for the Minister that, within whatever limits as are defined and agreed to, the TSSA has examined the issue in a specific way and reported accordingly.

Recommendation 1:

It is recommended that the TSSA provide to the Minister on an annual basis a report attesting to the accuracy and completeness of each program database (Amusement Devices; Boilers and Pressure Vessels; Fuels; Operating Engineers; Ski Lifts; Upholstered and Stuffed Articles) while identifying the limitations in respect of complete accuracy of each while identifying limiting factors. Having identified the limiting factors, this report should also comment on the steps being taken to address and eliminate the issues which currently impede 100% accuracy.

2) Observation: The offices of the Chief Financial Officer and Information Officer are a combined responsibility within the TSSA. In most organizations of any size or complexity, the two responsibilities are separate as each requires a professional with different and unique skill sets and experience. The TSSA is fortunate to have in the incumbent a person whose work experience and professional credentials allow him to discharge his dual responsibilities in a professional manner. While the incumbent’s background may not be unique to him alone, there will not be many individuals with his combined skill sets and experience. The burgeoning demands placed on the accounting profession combined with
the increasing complexities of the IT world in general, will eventually result in the two positions being separate. Demands for data integrity and completeness and the requisite audit/reconciliation tools within the IT function are increasingly demanding and therefore this change should be considered in the near term.

Recommendation 2:

It is recommended that the TSSA consider creating separate positions for the Chief Financial Officer and the Chief Information Officer.

3) Observation: The inspection process of TSSA is fundamental to the safety of the people of Ontario. It follows therefore, that the processes which dictate when and with what frequency inspections should occur must be flawless. Systems, no matter how sophisticated, depend on timely and accurate data input. Wherever the human element comes into play, errors will occur. It is important therefore that the data systems have an ‘audit’ capability to identify where human error has occurred as indicated by any anomalies that occur in the outputs. Taking the principle of audit from the financial world, such systems tools will involve additional policies and procedures, probably at several levels. In addition, as part of the internal financial audit process, the TSSA should spot test data sources, data collection and data input to strengthen overall data management thereby enhancing internal control systems overall.

Recommendation 3:

It is recommended that the TSSA examine its data testing and data input practices through the application of computer based testing applications and through their internal financial audit function to determine if errors have occurred and to identify where practices can be improved.

4) Observation: Trained, experienced Inspectors are integral to the safety inspection process. The TSSA currently has approximately 58 Inspectors in the elevating devices program for the entire province of Ontario. Their responsibilities include the approximately 50,000 elevating devices as well as ski lifts and amusement rides. Some current Inspectors are nearing retirement age and the source for the supply of replacements is less than clear. With 50,000 elevating devices in use, with 2,000 new devices being
added each year and a backlog of overdue inspections, the work load of the Inspectors in the elevating devices program is large and growing. While this workload appears daunting in and of itself, one must add the fact that, although seasonal in nature, these same Inspectors are responsible for amusement rides and ski lifts. Many of the current Inspectors come from 'the industry', however the presence of the elevating devices industry in Ontario is shrinking as is the supply of potential experienced Inspectors. Currently, potential new Inspectors are being trained by the TSSA. It is important that the problem be clearly defined and solutions brought forward for consideration.

Recommendation 4A:

It is recommended that the TSSA, as soon as is reasonably possible, provide to the Minister and the Board of Directors a report indicating:

· The cause of the backlog of inspections;

· The steps being taken by the TSSA to eliminate the backlog; and

· Whether or not the existence of a backlog can be eliminated in a permanent way.

Recommendation 4B:

It is recommended that the TSSA conduct the necessary research to identify the inspection resource needs for each of the TSSA safety inspection areas, identifying gaps and the steps that can be taken to address any identified shortfall of these important skills.

Recommendation 4C:

It is recommended that the TSSA, based on the results of the study recommended in 4B above, examine the practicalities of separating the amusement rides and ski lift inspection responsibilities from the duties of the Inspectors of elevating devices as a partial solution to any identified workload issue. Given that the inspection of amusement rides and ski lifts has a seasonal component, perhaps recently retired and appropriately skilled Inspectors could be approached to determine if they would be interested in
conducting these inspections on a part-time basis. Other options may be available for consideration.

5) **Observation:** Currently, the licensing of an elevating device as broadly described in 2.3 above has some ‘silo’ features. This existing situation is being addressed by the TSSA. The licensing of elevating devices is an extremely important control point for the entry of data in respect of new elevating devices coming on stream. It is essential, therefore, that the fact of a new elevator being licensed is entered into the database with all relevant detail. That data must automatically flow to the Inspectors who can ensure that the initial and periodic inspection work can be implemented in accordance with existing approval policies and RIDM. TSSA advises that this is currently the case as no new elevator can be brought into service without the design having been approved by the TSSA and an initial inspection performed.

Currently there is no notification to the Inspectors that a license has or has not been renewed. The argument has been made that there is no requirement for automatic notification in respect of license renewal given that once the elevating device is in the system as the result of the initial inspection, the periodic inspection process need not be further tied to the licensing exercise. Once in the system, periodic inspections will occur. In short, the scheduled periodic inspection is the back-stop to non-renewal of an elevator license.

Indeed, on occasion, when conducting a periodic inspection an Inspector will note that the license has expired which then becomes the subject of an order. Logic would suggest, however, that any indication that the license of an elevating device has expired provides an opportunity to determine the facts and warrants an inspection which in turn offers an opportunity to be reassured that the device is safe (whether in service or not) and that TSSA records are accurate and complete. Once the facts are known, the database should be updated.

In many cases the owner will not notify the TSSA that an elevator has been taken out of service, a fact that will only be discovered by the Inspector at the time of the next periodic inspection between which some time could elapse. The point has been made that an elevator that has been shut down poses no safety risk nor does an elevator that has been
dismantled. While this may be a reasonable conclusion, it is only true if the elevator is in fact out of service or dismantled. In any case, having the facts determined early on will be beneficial.

LR generates a license renewal notice to the owner 60 days before the expiry date of a license. If no license renewal is received, LR will generate a notice letter to the owner 90 days after the date that the license has expired. This notice period seems very generous given the potential reasons for a license not having been renewed that could be relevant to the safety of the device.

It would seem reasonable to conclude that the owners need to share in the obligation that TSSA be well informed and that their records are up to date and accurate. It is equally important that the owners share in the burden of public safety and that consideration be given by the Ministry to the introduction of appropriate legislation obliging owners to report when an elevating device has been taken out of service or dismantled. Significant financial penalties for failing to give such notice would encourage compliance.

Recommendation 5A:

It is recommended that the TSSA, if it has not already done so, provide to the Board of Directors and the Minister the work plan for addressing the anomalies in respect of data flow between LR and Elevating Devices as referenced in Observation 5, above.

Recommendation 5B:

It is recommended that the TSSA engage in discussions with the Ministry with a view to creating an amendment for Ministerial consideration which, if approved, would oblige owners to provide notice to the TSSA that an elevating device had been taken out of service, altered or dismantled. Appropriate penalties should be included to encourage compliance.

Recommendation 5C:

It is recommended that the TSSA examine the LR function to determine if there are opportunities to strengthen the license renewal processes.
6) **Observation:** There are in this report several references to manpower requirements of the elevating devices safety program. An inspection of an elevating device may result in the Inspector issuing one or more directives obliging the owner to affect repairs or improvements. Approximately 46,000 directives were issued in 2009/10, a number that will grow as new devices come on stream and existing devices age. The Inspector has a spectrum of options available to address these shortcomings ranging from requesting that the cause of the directive be addressed within a specific time frame to taking the elevating device out of service. The volume of directives, the reality that some are more urgent than others and the demands of ongoing periodic inspection volumes, even with return inspections being given priority, often delay the Inspector from making a timely return inspection to be reassured that the directive has been followed. There are many important variables in any attempt to address this issue.

There is a high degree of non-compliance in the elevating devices industry. Out of more than 41,000 inspections conducted last year, over 18,000 were follow-up inspections related to non-compliance found during periodic inspections. This degree of non-compliance is unacceptable from a safety perspective and it diverts important inspection resources which could be addressing such other important concerns as backlog. This is an owner responsibility that needs to be addressed.

**Recommendation 6A:**

It is recommended that the TSSA review existing protocols which guide Inspectors in the need for follow-up inspections. This review should include the nature, scope and magnitude of the follow-up inspection issue and propose solutions in keeping with the determination of the issue as defined by the review.

**Recommendation 6B:**

It is recommended that the TSSA and the Ministry consult on a solution to address owner non-compliance with inspection orders.
7) Observation: The classes of elevating devices are set out at 2.1 above. Given the nature of these devices, it is impossible to know with any degree of accuracy how many persons make use of the devices on any basis of measure. It would be equally difficult to determine the total hours of operation of the elevating devices in Ontario. It has been reported by the TSSA elsewhere (perhaps not surprisingly) that the great majority of ‘incidents’ are due to human error and/or abuse of the equipment. Given that the users of elevating devices are part of the problem, they should be encouraged to be part of the solution. For example, might it be possible and practical for the license which is affixed to the inside on an elevator car to more clearly and obviously request public assistance if misuse, abuse or malfunctioning of the equipment is noticed? The message could be in sufficiently large print so as to be legible and provide a phone number and an email address to which concerns could be reported. Those elevators which contain information television screens could broadcast periodic safety messages. The TSSA messaging, already present on the subway, street cars and elsewhere, should strongly reinforce the point that safety as it pertains to elevating devices is everyone’s responsibility.

Many if not most industries now provide what is generically referred to as a ‘TIPS’ line which allows people to anonymously report matters of concern. Each TIPS line has a particular focus, many attempting to address serious inappropriate behaviour. There is no reason however, that a TIPS line could not be created encouraging the public to report on matters of safety as it pertains to the TSSA mandate. Generally, TIPS lines which are in-house are not effective as people tend to believe that their anonymity can be compromised. The most effective TIPS lines are those that are managed by a third party separate from the company in question. Effectiveness is further enhanced by advertising broadly and at several levels as is deemed appropriate to inform the public of the existence of a TIPS line.

Recommendation 7A:

It is recommended that the TSSA accelerate its public outreach initiatives and make greater use of available technology, systems and opportunities for informing the public in respect of safety issues while encouraging the public to become part of the solution.
Recommendation 7B:

It is recommended that the TSSA consider the implementation of a TIPS program and that the effectiveness of this approach in the TSSA environment be assessed annually with a report provided to the Board of Directors.

ASSISTANCE AND SUPPORT

Without the assistance and support of the TSSA professionals who gave willingly of their time, expertise and advice – all based on long experience – this report would have been far more difficult to produce. They live the value: Putting Public Safety First.

From the moment of my introduction to the management and staff at the TSSA, I have been impressed with their professionalism, their dedication to fulfilling their responsibilities and the passion with which they address the issue of public safety in Ontario.

To a person, the TSSA professionals have been equally helpful, candid and forthright in assisting me with the completion of this report for which I am very grateful.

Norman D. Inkster
Chief Safety and Risk Officer
The purpose of this report is to provide an update to the Technical Standards and Safety Authority's (TSSA's) responses to recommendations made by the Chief Safety and Risk Officer (CSRO). Completed items are shaded in gray.

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<td>14</td>
<td>Recommendation 1:</td>
<td>TSSA will establish guidelines or standards for completeness and accuracy of various data sets and present these to the Ministry of Consumer Services. These standards will vary depending on the nature and type of data. Audits of the appropriate categories of data could then be conducted periodically.</td>
<td>We retained a consultant to provide external assistance to make recommendations with respect to data accuracy and related audit attestation procedures. We have also introduced a new data governance structure. We are committed to achieving recognized industry best practices.</td>
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<td>15</td>
<td>Recommendation 2:</td>
<td>TSSA has reorganized to create a new department responsible for information services and data management, under the leadership of a dedicated Chief Information Officer (CIO). A Director, Data Management has already been appointed.</td>
<td>A new and distinct position of CIO has been created and will have responsibility for both a data management function and the existing Information Services (IS) function to allow greater emphasis on the collection, quality, storage, retrieval and analysis of TSSA’s data. A Director of Data Management has been appointed. Recruitment for the CIO position has commenced and the transition of IS to the new CIO is anticipated to occur early in the new fiscal year.</td>
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<td>Recommendation 3:</td>
<td>This recommendation will be implemented. Internal audit is involved in verifying data accuracy levels as well as effectiveness of data verification processes.</td>
<td>As noted under recommendation 1 above, we have commenced the first phase of a multiple phase initiative designed to strategically categorize our data, establish target error</td>
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<td>and to identify where practices can be improved.</td>
<td>rates for each data set, and where appropriate undertake an audit process to verify performance. We continue to conduct annual independent reviews of incident data utilizing the recommended computer-based testing methodology. This past fiscal year, this methodology was also applied in auditing the results of the technical data verification pilot we undertook.</td>
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| 16   | **Recommendation 4A:**  
It is recommended that the TSSA, as soon as is reasonably possible provide to the Minister and the Board of Directors a report indicating:  
• The cause of the backlog of inspections;  
• The steps being taken by the TSSA to eliminate the backlog; and  
• Whether or not the existence of a backlog can be eliminated in a permanent way. | Management has already undertaken this recommendation to eliminate backlogs in elevating devices inspections by July 2012. | A Board approved work plan is in place to eliminate the elevating devices backlog by July 2012, and implementation is progressing as scheduled. Updates are provided to the Ministry at all scheduled liaison meetings. |
| 17   | **Recommendation 4B:**  
It is recommended that the TSSA conduct the necessary research to identify the inspection resource needs for each of the TSSA safety inspection areas, identifying gaps and the steps that can be taken to address any identified shortfall of these important skills. | Management has already done this and it is an ongoing effort. | We continuously seek to plan effectively for our workforce and to recruit needed personnel. For example, five additional elevating devices inspectors have completed their training and are now in the field conducting inspections, in part, assisting with eliminating the elevating devices backlog. Nine additional inspectors have been hired and are in training, with four more inspectors planned to be hired before the end of the current fiscal year. |
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| 17   | Recommendation 4C:  
It is recommended that the TSSA, based on the results of the study recommended in 4B above, examine the practicalities of separating the amusement rides and ski lift inspection responsibilities from the duties of the Inspectors of elevating devices as a partial solution to any identified workload issue. Given that the inspection of amusement rides and ski lifts has a seasonal component, perhaps recently retired and appropriately skilled Inspectors could be approached to determine if they would be interested in conducting these inspections on a part-time basis. Other options may be available for consideration.  
TSSA has given this recommendation due consideration and based on expert advice from its technical staff believes the recommendation is not feasible and not beneficial from a safety perspective.  
There are currently more than 50,000 active elevating devices in Ontario, of which approximately 270 (5%) are ski lifts and 1,500 (3%) are amusement devices. Segregating responsibilities for inspecting these devices and hiring skilled inspectors to work seasonally would likely exacerbate the issue of having skilled people available as TSSA provides the otherwise seasonal workers with full-time, year-round work. This approach also allows TSSA to have available skilled inspectors for these specific sectors as and when needed. TSSA sees this as positive in the context of workforce planning. Additionally, contract/recently retired inspectors are already employed to provide flexibility with workforce planning.  
| 18   | Recommendation 5A:  
It is recommended that the TSSA, if it has not already done so, provide to the Board of Directors and the Minister the work plan for addressing the anomalies in respect of data flow between LR and Elevating Devices as referenced in Observation 5, above.  
TSSA has undertaken an initiative to monitor license renewals against inspections, to ensure both licensing and inspections are up to date.  
| A report has been developed to enable the monitoring of license renewals against inspection timeframes. A team is being assembled to develop a method of automating the process, to enable us to ensure that both licencing and inspections are up to date.  

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| 19   | Recommendation 5B:  
It is recommended that the TSSA engage in discussions with the Ministry with a view to creating an amendment for Ministerial consideration which, if approved, would oblige owners to provide notice to the TSSA that an elevating device had been taken out of service, altered or dismantled. Appropriate penalties should be included to encourage compliance. | TSSA will initiate discussions with the appropriate stakeholders to respond to this recommendation. | This matter has been discussed with the Ministry, noting that an elevating device taken out of service or dismantled is not a safety concern. Owners are already required to notify TSSA when there is an alteration to an elevating device. The Ministry will advise of possible next steps. |
| 20   | Recommendation 5C:  
It is recommended that the TSSA examine the LR function to determine if there are opportunities to strengthen the license renewal processes. | TSSA is currently piloting a program and exploring additional incentives and deterrents to further strengthen the license renewal process. | The licence renewal letter notification process is working and fully operational. The pilot outbound call process for licence renewals has had minimal success. The parameters are being reevaluated and another pilot will be launched before the end of the fiscal year. |
| 21   | Recommendation 6A:  
It is recommended that the TSSA review existing protocols which guide Inspectors in the need for follow-up inspections. This review should include the nature, scope and magnitude of the follow-up inspection issue and propose solutions in keeping with the determination of the issue as defined by the review. | TSSA is currently doing this and will consider possible further improvements in consultation with its advisory council. | As a notable improvement, a new Declaration of Compliance process has been introduced to encourage contractors and owners to report compliance with low risk level non-compliances to TSSA. Improved take up of this voluntary reporting process will reduce the number of follow-up inspections that will be required, thereby allowing inspectors to focus on higher priority inspections. This was discussed at the last Elevating Devices Advisory Council meeting, and contractors and owners were encouraged to take advantage of the Declaration of Compliance process. We continue to monitor the |

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<td>Recommendation 6B:</td>
<td>TSSA has already taken actions in this regard with positive results and will work with its advisory council to identify additional measures to enhance compliance. TSSA will provide regular updates to the Ministry.</td>
<td>This matter was discussed at the last Elevating Devices Advisory Council meeting. It has been demonstrated that the three times fees and elevator shutdowns are driving compliance levels up.</td>
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<td>It is recommended that the TSSA and the Ministry consult on a solution to address owner non-compliance with inspection orders.</td>
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|      | Recommendation 7A: | TSSA will consider these recommendations and also explore possible alternatives in consultation with its advisory council. | TSSA’s Public Research and Education department remains fully engaged in promoting elevating device safety to the Ontario public. Key initiatives include:  
  - continuing to partner with property management firms such as Oxford Properties, Brookfield Properties and Cadillac Fairview to post elevator/escalator safety signage at their facilities; providing exposure to over 8.3 million people;  
  - distributing TSSA seasonal safety booklets through fire departments across the province as well as through direct mail campaigns to Ontario households; and  
  - enhancing TSSA’s public safety website safetyinfo.ca to spotlight key areas of safety including elevating devices where external factors such as end-user behaviour continue to be the major cause of incidents. |
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| 24   | Recommendation 7B:  
It is recommended that the TSSA consider the implementation of a TIPS program and that the effectiveness of this approach in the TSSA environment be assessed annually with a report provided to the Board of Directors. | TSSA will consider these recommendations and also explore possible alternatives in consultation with its advisory council. | This matter will be on the agenda of the next Elevating Devices Advisory Council meeting.  
In the interim, TSSA's Customer Contact Centre is the central point of contact for customers and the general public. The Customer Contact Centre receives enquiries and concerns. TSSA follows up and investigates any safety related complaints. |