

Rule 0.1 Preamble and incorporation by reference.

Section 25-5-704(1)(a) of the Colorado Revised Statutes allows the Colorado Passenger Tramway Safety Board to "use as general guidelines the standards contained in the 'American Standard Safety Code for Aerial Passenger Tramways', as adopted by the American Standards Association, Incorporated, as amended from time to time." Since 1965, when this provision was enacted, the American Standards Association, Inc., has been succeeded by the American National Standards Institute, Inc., and the relevant publication as now known as the "American National Standard for Passenger Ropeways - Aerial Tramways, Aerial Lifts, Surface Lifts, Tows and Conveyors--safety requirements--", ANSI B77.1-2006. The Board may also use the "American National Standard for Funiculars – Safety Requirements" known as "ANSI B77.2-2004".

The Colorado Passenger Tramway Safety Board has adopted, with certain additions, revisions, and deletions, the American National Standards Institute (ANSI) B77.1-2006 American National Standard for Passenger Ropeways - Aerial Tramways, Aerial Lifts, Surface Lifts, Tows and Conveyors - Safety Requirements, approved February 16, 2006, hereinafter referred to as the ANSI B77.1-2006 Standard, as its rules and regulations. The Colorado Passenger Tramway Safety Board Rules and Regulations do not include any later amendments or additions of the ANSI B77.1-2006 Standard.

The Colorado Passenger Tramway Safety Board has also adopted, with certain additions, revisions, and deletions, the American National Standards Institute (ANSI) B77.2-2004 American National Standard for Funiculars - Safety Requirements, approved August 19, 2004, hereinafter referred to as the ANSI B77.2-2004 Standard, as additional rules and regulations. The Colorado Passenger Tramway Safety Board Rules and Regulations do not include any later amendments or additions of the ANSI B77.2-2004 Standard.

The document titled "State of Colorado Department of Regulatory Agencies Passenger Tramway Safety Board Rules and Regulations" contains only revisions to the ANSI B77.1-1999, B77.1-2006, and B77.2-2004 Standards or additional rules not covered by the ANSI B77.1-1999, B77.1-2006, or B77.2-2004 Standards. If a particular rule is not found in the document titled "State of Colorado Department of Regulatory Agencies Passenger Tramway Safety Board Rules and Regulations" then the rule can be found in the ANSI B77.1-1999, B77.1-2006, or B77.2-2004 Standards. The term "rules and regulations" as used in this document is a reference to the ANSI B77.1-1999, B77.1-2006, or B77.2-2004 Standards and the "State of Colorado Department of Regulatory Agencies Passenger Tramway Safety Board Rules and Regulations."

The design, installation, operation, and maintenance of passenger ropeways, funiculars, and their components that are not covered by these standards should conform to applicable standards or codes. To the extent that they are available, applicable codes or standards shall be selected to cover all features, including, but not limited to, allowable unit stresses and properties of materials. Each code or standard should be of the most recent issue as of the effective date of this rule, and the designer shall state which code or standard was followed.

Features not covered by these standards shall be handled in accordance with sound engineering judgment.

A copy of the ANSI B77.1-1999, B77.1-2006, and B77.2-2004 Standards and other referenced standards, codes, or guidelines as listed herein are available for public inspection at any state publications depository library. For information regarding how this material can be obtained or examined, contact the Board's Program Director, at 1560 Broadway, Suite 1300, Denver, Colorado, 80202, (303) 894-7785.

Section 1

General Requirements

1.1 Scope.

This document establishes a standard for the design, manufacture, construction, operation and maintenance of the passenger Tramways in the State of Colorado. For this standard, passenger Tramways include:

- (1) Aerial Tramways (single and double reversible).
- (2) Aerial lifts (detachable lifts, chair lifts, and similar equipment).
- (3) Surface lifts (T-bar lifts, J-bar lifts, platter lifts, and similar equipment).
- (4) Tows (wire and fiber rope tows).
- (5) Funiculars.
- (6) Conveyor lifts.

These rules and regulations are promulgated by the Colorado Passenger Tramway Safety Board pursuant to the authority conferred by C.R.S. 25-5-701 et. seq., as amended.

1.2 Purpose.

The purpose of this standard is to develop a system of principles, specifications, and performance criteria that will meet the following objectives:

- (1) Reflect the current state of the art of Tramway design, operation, maintenance, and construction

It is recognized that certain dangers and risks are inherent in machines of this type and their operation. It is also recognized that inherent and other risks or dangers exist for those who are in the process of approaching, loading, unloading and departing from passenger Tramways. This system is intended to result in Tramways that are designed, constructed, operated, and maintained in a manner that helps reduce danger and exposure to risk to passengers and maintenance and operational personnel and to encourage improvements in productivity, efficiency, development, and progress consistent with the objectives.

Such a system with these stated objectives constitutes a safety standard.

1.2.3 Exceptions.

Strict application of the provisions of this standard may not be appropriate in every instance. Wherever it may be proposed to depart from the provisions of this standard, the authority having jurisdiction may grant exceptions from the literal requirements or permit the use of other devices or methods that provide features comparable to those included in this standard, providing that after receiving such evidence as the Board may require, the Board determines that:

- (a) The granting of such an exception would be consistent with, and would aid in, implementing the legislative policy set forth in C.R.S. 25-5-701, and, either;
- (b) Compliance with applicable rules and regulations from which an exception is sought would create an unreasonable operational or design condition; or
- (c) Compliance with applicable rules and regulations from which an exception is sought would create an unreasonable economic burden.

1.2.4.1 Existing installations.

Existing installations need not comply with the new or revised requirements of this edition except as set forth below. The requirements stated below shall comply with the ANSI B77.1-1999 Standard except where stated. Existing Tramways, when reinstalled, shall be classified as new installations (see 1.2.4.2). For Tramways that have not been relocated, but have not had routine maintenance performed within the previous two years or longer, these Tramways shall be subject to an acceptance test as outlined in 2.1.1.11.2, 3.1.1.11.2, 4.1.1.11.2, 5.1.1.11.2, 6.1.1.11.2, 8.1.1.11.2 (ANSI B77.1-1999) and 2.1.1.11.2 (ANSI B77.2-2004) Acceptance Test. This test shall verify that the Tramway is in compliance with the rules and regulations that were in effect at the time the Tramway was originally constructed and current rules that affect all Tramways. A Tramway modification or alteration shall be defined by 21.1 and meet the requirements of 21.3, 21.4, and 21.5. Operation and maintenance shall be in compliance with this standard. [(See 2.3, 3.3, 4.3, 5.3, 6.3, 7.4, 8.3 (ANSI B77.1-1999), 2.3 (ANSI B77.2-2004)]

All installations shall comply with the new or revised requirements of these rules and regulations (ANSI B77.1-1999) in the following areas, on or before the effective date of each paragraph, as set forth below:

- (1) Requirements for auxiliary drives, as set forth in 2.1.2.1.1, 3.1.2.1.1, 4.1.2.1.1. These requirements shall be effective November 1, 1994.
- (2) General requirements for brakes and rollback devices as set forth in 2.1.2.5, 3.1.2.5, 4.1.2.5, 5.1.2.5, and 6.1.2.5. These requirements shall be effective November 1, 1994.
- (3) Requirements for service brakes as set forth in 2.1.2.5.1, 3.1.2.5.1, 4.1.2.5.1, 5.1.2.5.1 and 6.1.2.5.1. These requirements shall be effective November 1, 1994.
- (4) Requirements for drive sheave brakes, as set forth in 2.1.2.5.2, 3.1.2.5.2 and 4.1.2.5.2. These requirements shall be effective November 1, 1994.
- (5) Requirements for rollback devices as set forth in 3.1.2.5.3, 4.1.2.5.3, 5.1.2.5.3 and 6.1.2.5.3. These requirements shall be effective November 1, 1994.
- (6) Requirements for drive train backstop devices as set forth in 3.1.2.5.4 and 4.1.2.5.4. These requirements shall be effective November 1, 1994.
- (7) Requirements for guarding of machinery as set forth in 2.1.2.6.1 (paragraph 1), 3.1.2.6.1 (paragraph 1), 4.1.2.6.1 (paragraph 1), 5.1.2.6.1 (paragraph 1), and 6.1.3.2. These requirements shall be effective November 1, 1994.
- (8) Requirements for mechanical stops for rigid mounted carriages as set forth in 3.1.2.8.2, 4.1.2.8.2, and 5.1.2.8.2. These requirements shall be effective November 1, 1994.
- (9) Requirements for manual and automatic stops as set forth in 2.1.2.11, 3.1.2.11, 4.1.2.11, 5.1.2.11 and 6.1.2.11. These requirements shall be effective November 1, 1994.
- (10) Requirements for manual stop devices as set forth in 2.1.2.11.1, 3.1.2.11.1, 4.1.2.11.1, 5.1.2.11.1 and 6.1.2.11.1. These requirements shall be effective November 1, 1994.
- (11) Requirements for automatic stop devices as set forth in 2.1.2.11.2, 3.1.2.11.2, 4.1.2.11.2, 5.1.2.11.2 and 6.1.2.11.2. These requirements shall be effective November 1, 1994.
- (12) Requirements for cable catchers and derail switches as set forth in 2.1.3.3.2, 3.1.3.3.2 (paragraphs 4 and 5), 4.1.3.3.2 and 5.1.3.3.2. These requirements shall be effective November 1, 1994.
- (13) Requirements for grips as set forth in 3.1.4.3.1(paragraph I, 2, and item I), 3.1.4.3.4.1(paragraph 1),

3.1.4.3.4.2, 3.1.4.3.4.4, 4.1.4.3.2, 4.1.4.3.5, 5.1.4.3.2. These requirements shall be July 1, 2000.

- (14) Requirements for operating personnel as set forth in 2.1.5, 3.1.5, 4.1.5, 5.1.5 and 6.1.5. These requirements shall be effective November 1, 1994.
- (15) Requirements for an operational manual as set forth in 2.1.6.1, 3.1.6.1, 4.1.6.1, 5.1.6.1 and 6.1.6.1. These requirements shall be effective November 1, 1994.
- (16) Requirements for the protection of electrical equipment as set forth in 2.2.1.3, 3.2.1.3, 4.2.1.3, 5.2.1.3 and 6.2.1.3. These requirements shall be effective November 1, 1994.
- (17) Requirements for operating control circuits as set forth in 2.2.1.7, 3.2.1.7, 4.2.1.7, 5.2.1.7 and 6.2.1.7. These requirements shall be effective November 1, 1994.
- (18) Requirements for the location of machinery in attaching/detaching areas as set forth in 3.1.2.6.1 and 3.1.2.6.4. These requirements shall be effective November 1, 1994.
- (19) Requirements for end connections and protective coverings as required in Rule 7.3.2. These requirements shall be effective July 1, 2000.
- (20) Requirements for clearances and skiable track as set forth in Rules 6.1.1.3.1 and 6.1.1.4.1. These requirements shall be effective November 1, 1994.
- (21) Requirements for voltage limitations for non-haul or track rope overhead cables as set forth in 2.2.1.4, 3.2.1.4, 4.2.1.4, 5.2.1.4, and 6.2.1.4. These requirements shall be effective July 1, 2000.

Note: Items 22-29 below shall be required to meet the requirements of CPTSB Rules and Regulations dated May 15, 2005.

- (22) Requirements for alarms as set forth in 11.7.7 shall be effective July 1, 2000.
- (23) Requirements for automatic stop devices for conveyor lifts as set forth in 8.1.2.11.2 shall be effective November 1, 1999.
- (24) Requirements for moving machinery guarding for conveyor lifts as set forth in 8.1.2.6.1 shall be effective November 1, 1999.
- (25) Requirements for operating circuits as set forth in 8.2.1.7.1 shall be effective November 1, 1999.
- (26) Requirements for voltage limitations as set forth in 8.2.1.4 shall be effective November 1, 1999.
- (27) Requirements for Safety of operating and maintenance personnel as set forth in 2.1.1.12 and 3.1.1.12 shall be effective November 1, 1999.
- (28) Requirements for fuel handling as set forth in Section 11 with the EXCEPTION of Rule 11.5.1 Structural members used as fuel tanks; Rule 11.5.4 Outside aboveground or underground fuel supply tanks; Rule 11.5.4.1 Location with respect to haul and counterweight ropes; Rule 11.5.6 Provisions for internal corrosion; Rule 11.5.8.3 Supply tanks; and Rule 11.5.11.11 Fill pipes. These requirements shall be effective October 15, 2001.
- (29) Requirements for fuel handling as set forth in Section 11 and Rule 1.2.4.1 (28) with the EXCEPTION of Rule 11.4.2 (a) and (c) Engines designed for continuous Tramway operation. These requirements shall be effective December 2, 2002.

1.2.4.2 New Installations.

New installations which have not received their initial registration by the effective date of these rules and regulations shall meet the requirements in effect at the time of initial registration.

1.2.4.3 Major Tramway Modification.

A major Tramway modification shall be defined as an alteration of the current design of the Tramway which results in:

- (a) A change in the design speed of the system;
- (b) A change in the rated capacity by changing the number of carriers, spacing of carriers, or load capacity of carriers;
- (c) A change in the path of the rope;
- (d) Any change in the type of brakes and/or backstop devices or components thereof;
- (e) A change in the structural arrangements;
- (f) A change in power or type of prime mover or auxiliary engine;
- (g) A change to control system logic.

1.2.5 Interpretation of Rules and Regulations.

Additional explanation or interpretation of these rules and regulations shall be the responsibility and at the reasonable discretion of the Board. An appeal to the ruling of the Board may be made in conformance with C.R.S. 24-4-106.

1.2.6 Existing Laws or Ordinances.

This standard shall be considered as supplementary to any existing law or ordinance covering the installation or operation of these facilities. All construction shall be in accordance with applicable codes of the state or its political subdivisions and the codes and standards of the industry.

1.4 Definitions

authority having jurisdiction: The Colorado Passenger Tramway Safety Board is the authority having jurisdiction over passenger Tramway facilities in the State of Colorado. Other public or private bodies may exercise a concurrent jurisdiction over a particular installation by virtue of location or other interests. No such joint jurisdiction shall be limited by these rules and regulations; neither shall these requirements be mitigated by others without the concurrence of the Board.

critical components: Critical components are those parts of a Tramway or lift system, the failure of which is likely to cause serious injury to the passengers. The list of critical components for a Tramway or lift system shall include, but not be limited to the following:

- (1) Carrier, including grip, hanger, chair, or gondola;
- (2) Haul rope sheaves, sheave units and their attachments;
- (3) Terminal sheaves and their attachments;
- (4) Tension systems and their attachments;

(5) Wire rope, including haul ropes, track ropes and counterweight ropes.

design integrity: Verification of design integrity means verification that the Tramway conforms to the original design accepted by the Board and such modifications as have been authorized by the Board.

Qualified Engineer: An engineer who is registered as a Professional Engineer in the State of Colorado.

safety gate: See Stop Gate.

stop gate: A stop gate is a type of automatic stopping device that, when actuated by a passenger's weight, contact, or passage, will automatically stop the Tramway. For the purposes of complying with these rules and regulations, stop gate and safety gate shall be considered to have the same meaning.

1.5 Quality Assurance Programs.

Critical components shall be designed, manufactured, installed, and operated in accordance with a quality assurance program. A quality assurance program shall be one that assures that the critical components comply with applicable standards, specifications, and requirements of the authority having jurisdiction.

The program for the design of these components shall verify and document the use of properly selected load factors or allowable stresses based on the conditions of loading and design life. The program shall also verify and document the use of analysis, calculations, and checking procedures.

The program for the manufacture of these components shall verify and document that fabricated and supplied parts conform to the design plans and specifications.

The program for the installation of these components shall verify and document that the installed parts conform to the design plans and specifications.

For the area operator, as defined in C.R.S. 25-5-702(1), the program shall verify and document that the in-use periodic testing requirements of the designer and manufacturer are completed by qualified personnel.

This rule shall apply to all critical components manufactured and installed after January 1, 1992.

Section 2 Aerial Tramways

2.1.1.3.1 Location of power lines. Power lines shall be located a minimum distance equal to the height of poles or support structures from any passenger Tramway so that poles and electrical lines cannot touch any portion of the Tramway, loading or unloading points or platforms and tow path, if applicable, upon collapse of poles or lines, unless suitable and approved precautions are taken to safeguard human lives.

2.1.1.3.2 Air space requirements.

2.1.1.2.3.1 Structures. No passenger Tramway installation shall be permitted to operate when a structure encroaches into the air space of the passenger Tramway, defined as the area bounded by vertical planes commencing at a point thirty-five (35) feet from the intersection of the vertical planes of the ropes or cables and ground surface.

For purposes of this rule, buildings controlled by the licensee used primarily for maintenance and operation of the lift and other Tramways shall not be considered structures; however, buildings must comply with the following.

(1) No flammable liquids may be stored in the building, unless such flammable

liquids are stored in UL listed storage cabinets.

- (2) The building must be within the view of the attendant but not impair the sight line of the lift.
- (3) Entrances to all machinery, operators', and attendants' rooms shall be locked when not in use. Unattended entrances accessible to public, which may be left open, shall be equipped with barriers to prevent entry.

2.1.1.2.3.2 Cables or ropes. Any cable or rope installed on or near a ropeway that may represent a hazard to the ropeway shall be monitored to automatically stop the ropeway if the cable or rope fails. Failure would be defined as per Section 23.1 (g).

EXCEPTION: Track or haul ropes are excluded from this rule.

2.1.2.7.4 Egress. Permanent stairs and walkways shall be provided for egress from all machinery areas. The maximum angle of inclination for the stairs shall not exceed 70 degrees. Stairs and walkways shall have a minimum width of 18 inches. Stair treads shall have a minimum depth of 4 inches. Walkway surfaces and stair treads shall be constructed of non-skid bar grating or expanded metal. Handrails shall be provided.

2.3.1.3 Operational plan for transportation of recreational equipment. Each licensee shall have an operational plan that has procedures for transportation of sports equipment and recreational devices by foot passengers. This plan shall be consistent with the Tramway manufacturer's specifications and instructions, if any.

Section 3 Detachable grip aerial lifts

3.1.1.3.1 Location of power lines. Power lines shall be located a minimum distance equal to the height of poles or support structures from any passenger Tramway so that poles and electrical lines cannot touch any portion of the Tramway, loading or unloading points or platforms and tow path, if applicable, upon collapse of poles or lines, unless suitable and approved precautions are taken to safeguard human lives.

3.1.1.3.2 Air space requirements.

3.1.1.3.2.1 Structures. No passenger Tramway installation shall be permitted to operate when a structure encroaches into the air space of the passenger Tramway, defined as the area bounded by vertical planes commencing at a point thirty-five (35) feet from the intersection of the vertical planes of the ropes or cables and ground surface.

For purposes of this rule, buildings controlled by the licensee used primarily for maintenance and operation of the lift and other Tramways shall not be considered structures; however, buildings must comply with the following.

- (1) No flammable liquids may be stored in the building, unless such flammable liquids are stored in UL listed storage cabinets.
- (2) The building must be within the view of the attendant but not impair the sight line of the lift.
- (3) Entrances to all machinery, operators', and attendants' rooms shall be locked when not in use. Unattended entrances accessible to public, which may be left open, shall be equipped with barriers to prevent entry.

3.1.1.3.2.2 Cables or ropes. Any cable or rope installed on or near a ropeway that may represent a hazard to the ropeway shall be monitored to automatically stop the ropeway if the cable or rope fails. Failure would be defined as per Section 23.1 (g).

EXCEPTION: Track or haul ropes are excluded from this rule.

3.1.2.4 Acceleration and speed control.

The drive equipment shall be designed to accelerate the line smoothly and to avoid severe oscillation or undulation under any loading condition.

The aerial lift shall be started at its lowest point of speed range after any type of stop.

For all stops, the minimum average rate of the carrier's horizontal deceleration shall be adequate to prevent carrier collision in the receiving and launching mechanisms.

The rate of the carrier's acceleration to, and deceleration from, the design rope speed shall not exceed eight (8) feet per second squared (2.4 meters per second squared) under the most unfavorable braking condition. The interval between carriers shall be controlled by automatic carrier spacers or other suitable systems. Unbalanced loading shall be controlled to the extent required by the design through the use of automatic carrier counters or other suitable systems.

The drive shall be capable of moving the unloaded system at reduced speed for rope inspection and equipment maintenance. This reduced-speed operation may be obtained by the use of the auxiliary power unit.

On installations in which a forward overhauling condition exists:

- a) Provisions shall be made for an overhauling load so that the system shall operate at a controlled speed not exceeding design speed by more than 6%. The energy developed by the overhauling load shall be dissipated in a satisfactory manner without using the brakes specified under 3.1.2.5;

Where the provision made for controlling an overhauling load consists of regenerative capability or a similar characteristic in the prime mover itself, the auxiliary power unit shall have a comparable capability.

- b) Provision shall be made for slowing and stopping the aerial lift drive automatically if the line speed exceeds the design speed by more than 10%.

NOTE – Design values of line speed pertain to the design speed for the particular condition of operation (that is, skiers or foot passengers).

Where the aerial lift is not rated for downhill passenger traffic, the following number of loaded carriers, loaded no more closely than 4 times the minimum carrier spacing, shall be permitted for the carrying of authorized persons downhill; the requirements for slowing and stopping the aerial lift drive automatically as set forth in 3.1.2.4(b) shall be waived:

Total number of carriers on lift (both sides)	Maximum number of loaded carriers on downhill rope
Less than 60	2
60 to 120	3
Over 120	4

For the purpose of this section only, authorized persons are defined to include all persons, whether employees of the aerial lift owner or not, who are authorized by the owner or the owner's representatives to be carried on the aerial lift.

All installations in which downhill traffic is either limited or not permitted shall be so identified with clearly visible signs at loading or unloading areas, and this information shall be further contained in operating instructions posted in these areas.

3.1.2.6 Brakes and rollback devices.

The aerial lift shall have the following friction-type brakes and other devices as specified in table 3-2:

- service brake (see 3.1.2.6.1);
- drive sheave brake (see 3.1.2.6.2);– rollback device (see 3.1.2.6.3).

All braking systems shall be designed and monitored to ensure that:

- a) once the aerial lift begins movement in the intended direction, the brakes are maintained in the open position;
- b) the service brake shall not open prior to the drive system developing sufficient torque to prevent overhauling;

EXCEPTION – For an aerial lift that overhauls only in the reverse direction, a drive train backstop (3.1.2.6.4) may be used in lieu of the above.

- c) multiple brakes or brake systems shall not be simultaneously applied such that excessive deceleration is applied to the aerial lift under any anticipated conditions of loading;
- d) the failure of one braking system to properly decelerate the aerial lift shall automatically initiate a second braking system, if any.

The service brake, drive sheave brake, and rollback device shall be designed such that failure of one braking system will not impair the function of the other systems. All brakes shall have the braking force applied by springs, weights, or other approved forms of stored energy.

The service brake, drive sheave brake, and rollback device shall be designed to assure operation under all anticipated conditions.

Each braking system shall be capable of operation to comply with daily inspections and periodic testing.

The manufacturer or a Qualified Engineer shall furnish a written procedure to be followed and specify the auxiliary equipment necessary for periodic testing and adjustment of the holding force of each brake, rollback, and backstop device. The procedure shall additionally specify:

- e) the minimum and maximum holding force for the service brake and drive sheave brake independently, and;
- f) the minimum and maximum stopping distance for the service brake and drive sheave brake independently, with a specified loading condition.

This baseline procedure shall be performed at the completion of the acceptance test and then at the frequency specified in order to demonstrate the ability of each brake to produce the required force.

Testing shall be accomplished as part of normal maintenance during the operating season, but shall not be performed when the aerial lift is open to the public. As a minimum, this testing shall be performed monthly during the operating season.

If a device is permanently installed to cause a brake, or rollback device, to be disabled for testing or reverse rotation, it shall be electronically monitored so that the aerial lift cannot be operated in its normal mode when the brake is so disabled.

Table 3-2 - Required stopping devices

Lift category	Service Brake	Drive Sheave Brake	Rollback device
Self-braking: A lift that decelerates, stops, & remains stopped within the service brake performance requirements without a braking device	Not Required	Required	Not Required
Non-overhauling: A lift that will not accelerate in either direction when it is not driven, but is not self-braking	Required	Required	Not Required
Overhauling reverse direction: A lift that will accelerate in the reverse direction when it is not driven	Required*	Required	Required
Overhauling forward direction: A lift that will accelerate in forward direction when it is not driven	Required	Required	Not Required

* A service brake is not required if the overhauling, reverse direction lift will meet the service brake stopping requirements under most unfavorable design loading conditions.

3.1.2.7.4 Other machinery locations. The acceleration/deceleration areas, conveyor areas, and associated access ways shall be well ventilated. These areas shall have a permanently installed lighting system which is adequate for proper machinery maintenance and safety of personnel. Access ways shall be provided for inspection and proper maintenance while the equipment is in operation. Access ways shall have:

- (1) Stairs or secured ladder.
- (2) Skid resistant floors, platforms, or catwalks which provide access as defined in subparagraph three herein to all manual and automatic safety devices (switches) and tensioning system components. Access to other areas shall be denied while equipment is in operation.

- (3) A minimum vertical clearance of 80 inches (2 m), and a minimum horizontal clearance of 24 inches (61 cm). If a component crosses the access way, vertical clearance may be reduced as follows: a) a minimum of 60 inches (152 cm), for a maximum distance of 36 inches (92 cm); or b) a minimum of 48 inches (122 cm), for a maximum distance of 12 inches (30.5 cm). If the obstruction exceeds 15 inches (38 cm), in height, above the floor, stairs shall be provided to allow passage over the obstruction.
- (4) Railings protecting floor openings and moving machine parts. Moving parts shall be considered guarded if they are located a minimum of 12 inches (30.5 cm) from the vertical plane of the railing. Railings shall consist of a top rail, located 36–42 inches (91–106 cm) from the walking surface; a mid rail, located approximately midway between top rail and walking surface; and a 4 inch high (10 cm) solid toe plate. Railings shall be designed and constructed to resist anticipated loadings.

The requirements of rules 3.1.2.6.1 and 3.1.2.6.4, as revised, shall be in effect for all installations constructed subsequent to January 1, 1988. For all installations completed prior to January 1, 1988 reasonable compliance with Rules 3.1.2.6.1 and 3.1.2.6.4 as revised shall be accomplished prior to November 1, 1990.

3.1.2.7.5 Egress. Permanent stairs and walkways shall be provided for egress from all machinery areas. The maximum angle of inclination for the stairs shall not exceed 70 degrees. Stairs and walkways shall have a minimum width of 18 inches. Stair treads shall have a minimum depth of 4 inches. Walkway surfaces and stair treads shall be constructed of non-skid bar grating or expanded metal. Handrails shall be provided.

3.2.3.2 Stop gates.

On aerial lifts using chairs, an automatic stopping device beyond each unloading area are required where passengers wearing skis are required to disembark. The device shall automatically stop the aerial lift in the event a passenger rides beyond the intended point of unloading. The operation of the automatic stop device may be delayed or overridden momentarily by the operator or attendant.

3.2.1.6.3 Haul rope grounding. Grounding sheaves with conductive liners or equivalent means should be provided at each end of the Tramway for the purpose of grounding haul ropes and track cables, as applicable, for static electrical discharge. For the haul rope on bicable systems or monocable systems with an isolated or insulated haul rope incorporated in the operating circuitry, no means of grounding are required when the operating circuit takes into consideration static electrical discharge.

3.3.1.2.1 Requirements for signs.

- (a) The design of any sign as well as its support and the installation procedure of such sign shall be considered a minor modification if the sign or aggregate of signs on a given tower is greater than three feet square (nine square feet). (b) Signs, fasteners, or supporting members shall not interfere with the operation of the

Tramway .

- (c) The design of structural components shall be reviewed to consider the increase in loading caused by any sign. (d) Signs shall not interfere with passenger or attendant vision.

3.3.1.3 Operational plan for transportation of recreational equipment. Each licensee shall have an operational plan that has procedures for transportation of sports equipment and recreational devices by foot passengers. This plan shall be consistent with the Tramway manufacturer's specifications and

instructions, if any.

3.3.4.3.1 Acceptance criteria for grips and hangers - minimum requirements. The following shall be considered the minimum requirements for an acceptance criteria.

- (1) Qualifications for testing personnel;
- (2) Sampling size and method of obtaining the sample;
- (3) Allowable rejection rate and retest procedures;
- (4) Types of inspections to be performed and the procedures to be used;
- (5) Criteria for acceptance/rejection of samples;(6) Certification from the manufacturer/design engineer that the testing procedures are acceptable to detect faulty materials.

Section 4 Fixed grip aerial lifts

4.1.1.3.1 Location of power lines . Power lines shall be located a minimum distance equal to the height of poles or support structures from any passenger Tramway so that poles and electrical lines cannot touch any portion of the Tramway , loading or unloading points or platforms and tow path, if applicable, upon collapse of poles or lines, unless suitable and approved precautions are taken to safeguard human lives.

4.1.1.3.2 Air space requirements.

4.1.1.3.2.1 Structures. No passenger Tramway installation shall be permitted to operate when a structure encroaches into the air space of the passenger Tramway , defined as the area bounded by vertical planes commencing at a point thirty-five (35) feet from the intersection of the vertical planes of the ropes or cables and ground surface.

For purposes of this rule, buildings controlled by the licensee used primarily for maintenance and operation of the lift and other Tramways shall not be considered structures; however, buildings must comply with the following.

- (1) No flammable liquids may be stored in the building, unless such flammable liquids are stored in UL listed storage cabinets.(2) The building must be within the view of the attendant but not impair the

sight line of the lift.

- (3) Entrances to all machinery, operators', and attendants' rooms shall be locked when not in use. Unattended entrances accessible to public, which may be left open, shall be equipped with barriers to prevent entry.

4.1.1.3.2.2 Cables or ropes. Any cable or rope installed on or near a ropeway that may represent a hazard to the ropeway shall be monitored to automatically stop the ropeway if the cable or rope fails. Failure would be defined as per Section 23.1 (g).

EXCEPTION: Track or haul ropes are excluded from this rule.

4.1.2.6 Brakes and rollback device.

The aerial lift shall have the following friction-type brakes and other devices as specified in table

4-3:

– service brake (see 4.1.2.6.1);

drive sheave brake (see 4.1.2.6.2);

rollback device (see 4.1.2.6.3);– drive train backstop (see 4.1.2.6.4).

All braking systems shall be designed to ensure that:

a) once the aerial lift begins movement in the intended direction, the brakes are maintained in the open position;b) the service brake shall not open prior to the drive system developing sufficient torque to prevent overhauling.

EXCEPTION – For an aerial lift that overhauls only in the reverse direction, a drive train backstop may be used in lieu of the above.

c) multiple brakes or brake systems shall not be simultaneously applied such that excessive deceleration is applied to the aerial lift under any anticipated conditions of loading;

d) the failure of one braking system to properly decelerate the aerial lift shall automatically initiate a second braking system, on an overhauling forward direction aerial lift.

The service brake, drive sheave brake, rollback device, and drive train backstop device shall be designed such that failure of one system will not impair the function of the other systems. All brakes shall have the braking force applied by springs, weights, or other approved forms of stored energy.

The service brake, drive sheave brake, rollback, and drive train backstop devices shall be designed to assure operation under all anticipated conditions.

Each braking system shall be capable of operation to comply with daily inspections and periodic testing.

The manufacturer or a Qualified Engineer shall furnish a written procedure to be followed, and specify the auxiliary equipment necessary for periodic testing and adjustment of the holding force of each brake and backstop device. The procedure shall additionally specify:

e) the minimum and maximum holding force for the service brake and drive sheave brake independently; and

f) the minimum and maximum stopping distance for the service brake and drive sheave brake independently, with a specified loading condition.

This baseline procedure shall be performed at the completion of the acceptance test and then at the frequency specified in order to demonstrate the ability of each brake to produce the required force.

Testing shall be accomplished as part of normal maintenance during the operating season, but shall not be performed when the aerial lift is open to the public. As a minimum, this testing shall be performed monthly during the operating season.

If a device is permanently installed to cause a brake, rollback, or drive train backstop device to be

disabled for testing, it shall be electronically monitored so that the aerial lift cannot be operated in its normal mode when the brakes are so disabled.

Table 4-3 - Required stopping devices

Lift category	Service Brake	Drive Sheave Brake	Rollback device
Self-braking: A lift that decelerates, stops, & remains stopped within the service brake performance requirements without a braking device	Not Required	Required	Not Required
Non-overhauling: A lift that will not accelerate in either direction when it is not driven, but is not self-braking	Required*	Required	Not Required
Overhauling, reverse direction: A lift that will accelerate in the reverse direction when it is not driven	Required	Required	Required
Overhauling, forward direction: A lift that will accelerate in forward direction when it is not driven	Required	Required	Not Required

* A service brake is not required if the overhauling, reverse direction lift will meet the service brake stopping requirements under most unfavorable design loading conditions .

4.1.2.7.4 Egress. Permanent stairs and walkways shall be provided for egress from all machinery areas. The maximum angle of inclination for the stairs shall not exceed 70 degrees. Stairs and walkways shall have a minimum width of 18 inches. Stair treads shall have a minimum depth of 4 inches. Walkway surfaces and stair treads shall be constructed of non-skid bar grating or expanded metal. Handrails shall be provided.

4.2.1.6.3 Haul rope grounding. Grounding sheaves or equivalent means shall be provided at each end of the Tramway for the purpose of grounding haul ropes, as applicable, for static electrical discharge. For systems with an isolated or insulated haul rope incorporated in the operating circuitry, no means of grounding are required when the operating circuit takes into consideration static electrical discharge.

4.3.1.2.1 Requirements for signs.

(a) The design of any sign as well as its support and the installation procedure of such sign shall be considered a minor modification if the sign or aggregate of signs on a given tower is greater than three feet square (nine square feet).(b) Signs, fasteners, or supporting members shall not interfere with the operation of the

Tramway .

(c) The design of structural components shall be reviewed to consider the increase in loading caused by any sign.

(d) Signs shall not interfere with passenger or attendant vision.

4.3.1.3 Operational plan for transportation of recreational equipment. Each licensee shall have an operational plan that has procedures for transportation of sports equipment and recreational devices by foot passengers. This plan shall be consistent with the Tramway manufacturer's specifications and instructions, if any.

4.3.4.3.1 Acceptance criteria for grips and hangers minimum requirements. The following shall be considered the minimum requirements for an acceptance criteria.

- (1) Qualifications for testing personnel;
- (2) Sampling size and method of obtaining the sample;
- (3) Allowable rejection rate and retest procedures;
- (4) Types of inspections to be performed and the procedures to be used;
- (5) Criteria for acceptance/rejection of samples;(6) Certification from the manufacturer/design engineer that the testing procedures are acceptable to detect faulty materials.

Section 5 Surface lifts

5.1.1.3.4 Location of power lines. Power lines shall be located a minimum distance equal to the height of poles or support structures from any passenger Tramway so that poles and electrical lines cannot touch any portion of the Tramway , loading or unloading points or platforms and tow path, if applicable, upon collapse of poles or lines, unless suitable and approved precautions are taken to safeguard human lives.

5.1.1.3.5 Air space requirements.

5.1.1.3.5.1 Structures. No passenger Tramway installation shall be permitted to operate when a structure encroaches into the air space of the passenger Tramway , defined as the area bounded by vertical planes commencing at a point thirty-five (35) feet from the intersection of the vertical planes of the ropes or cables and ground surface.

For purposes of this rule, buildings controlled by the licensee used primarily for maintenance and operation of the lift and other Tramways shall not be considered structures; however, buildings must comply with the following.

- (1) No flammable liquids may be stored in the building, unless such flammable liquids are stored in UL listed storage cabinets.(2) The building must be within the view of the attendant but not impair the

sight line of the lift.

- (3) Entrances to all machinery, operators', and attendants' rooms shall be locked when not in use. Unattended entrances accessible to public, which may be left open, shall be equipped with barriers to prevent entry.

5.1.1.3.5.2 Cables or ropes. Any cable or rope installed on or near a ropeway that may represent a hazard to the ropeway shall be monitored to automatically stop the ropeway if the cable or rope fails. Failure would be defined as per Section 23.1 (g).

EXCEPTION: Track or haul ropes are excluded from this rule.

5.3.1.2.1 Requirements for signs.

- (a) The design of any sign as well as its support and the installation procedure of such sign shall be considered a minor modification if the sign or aggregate of signs on a given tower is greater than three feet square (nine square feet).
- (b) Signs, fasteners, or supporting members shall not interfere with the operation of the Tramway .
- (c) The design of structural components shall be reviewed to consider the increase in loading caused by any sign.
- (d) Signs shall not interfere with passenger or attendant vision.

5.3.1.3 Operational plan for transportation of recreational equipment. Each licensee shall have an operational plan that has procedures for transportation of sports equipment and recreational devices by foot passengers. This plan shall be consistent with the Tramway manufacturer's specifications and instructions, if any.

Section 6 Tows

6.1.1.3.3 Location of power lines. Power lines shall be located a minimum distance equal to the height of poles or support structures from any passenger Tramway so that poles and electrical lines cannot touch any portion of the Tramway , loading or unloading points or platforms and tow path, if applicable, upon collapse of poles or lines, unless suitable and approved precautions are taken to safeguard human lives.

6.1.1.3.3 Air space requirements.

6.1.1.3.3.1 Structures. No passenger Tramway installation shall be permitted to operate when a structure encroaches into the air space of the passenger Tramway , defined as the area bounded by vertical planes commencing at a point thirty-five (35) feet from the intersection of the vertical planes of the ropes or cables and ground surface.

For purposes of this rule, buildings controlled by the licensee used primarily for maintenance and operation of the lift and other Tramways shall not be considered structures; however, buildings must comply with the following.

- (1) No flammable liquids may be stored in the building, unless such flammable liquids are stored in UL listed storage cabinets.(2) The building must be within the view of the attendant but not impair the

sight line of the lift.

- (3) Entrances to all machinery, operators', and attendants' rooms shall be locked when not in use. Unattended entrances accessible to public, which may be left open, shall be equipped with barriers to prevent entry.

6.1.1.3.3.2 Cables or ropes. Any cable or rope installed on or near a ropeway that

may represent a hazard to the ropeway shall be monitored to automatically stop the ropeway if the cable or rope fails. Failure would be defined as per Section 23.1 (g).

EXCEPTION: Track or haul ropes are excluded from this rule.

6.2.3.2 Stop gates.

Automatic stop device(s) shall be installed at each terminal and beyond each unloading area to stop the tow if actuated by a person's passage.

For actuating device(s) of the suspended type, the suspended portion shall be strong enough to cause release of the actuating devices in use under the most adverse conditions, and each side shall be detachable and shall interrupt the operating circuit when detached.

The device shall be in accordance with the following as applicable:

a) Intermediate unloading areas: Required only when passengers are not permitted beyond the intermediate unloading area;

b) Terminal areas: Installed on the incoming side so that the distance from the stop gate to the first obstruction is more than 150% of the distance required to stop the empty tow operating at maximum speed. The stop device shall extend across the tow beneath the incoming rope and insofar as is practical the outgoing rope;

EXCEPTION: Loading areas where the deflection sheaves or bullwheels are enclosed by guarding, such that personnel or a passenger cannot be pulled into or have unauthorized access to the deflection sheaves or bullwheels, are not required to maintain a stop gate at the terminal loading area.

c) Fiber rope tows; Additionally, at unloading areas a device shall encircle the incoming fiber rope.

6.3.1.2.1 Requirement for signs.

(a) The design of any sign as well as its support and the installation procedure of each sign shall be considered a minor modification if the sign or aggregate of signs on a given tower is greater than three feet square (nine square feet). (b) Signs, fasteners, or supporting members shall not interfere with the operation of the

Tramway .

(c) The design of structural components shall be reviewed to consider the increase in loading caused by any sign. (d) Signs shall not interfere with passenger or attendant vision.

6.3.1.3 Operational plan for transportation of recreational equipment. Each licensee shall have an operational plan that has procedures for transportation of sports equipment and recreational devices by foot passengers. This plan shall be consistent with the Tramway manufacturer's specifications and instructions, if any.

Section 7 Reserved

Section 8 Reserved

Section 9 Funiculars (ANSI B77.2-2004)

2.1.1.8 Fuel tanks for combustion engines.

This rule is superceded by CPTSB Section 11. Please refer to CPTSB Rules and Regulations Section 11, Fuel Handling.

Section 10 Reserved

Section 11 Reserved

Section 12 Reserved

Section 13 Reserved

Section 14 Reserved

Section 15 Reserved

Section 16 Reserved

Section 17 Reserved

Section 18 Reserved

Section 19 Reserved

Section 20 Tramway Licensing

20.1 License Required.

A passenger Tramway not in compliance with these rules and regulations may be licensed if it has been granted the necessary exceptions pursuant to Section 1.2.3. Terms, conditions or requirements limiting any license may be imposed if reasonably necessary to effect compliance with these rules and regulations or to protect the safety of the public.

20.2 Issuance of License.

No license applied for shall be issued by the Board until it has received a verified and notarized statement from the area operator that the deficiencies in the inspector's report have been remedied and the authority appointed by the Board has corroborated such statement. Such corroboration may be made by review of the above verified statement; subsequent inspection; the Board's own investigation; the receipt of additional documentation requested by the Board; or any other means which the Board or appointed authority deems appropriate. The certificate shall be issued as soon as possible, but no later than seven (7) days after receipt of such statement, unless the Board has reasonable grounds to delay issuance and has given notice of such action and its reasons to the area operator affected prior to expiration of such seven (7) day period. The license, or copy thereof, shall be displayed prominently at the place where passengers are loaded.

20.3 Expiration of licenses.

Tramways are licensed during the fall licensing period or the spring licensing period as designated by the Board for one calendar year.

1. The fall licensing period shall be prior to the winter operating season.
2. The spring licensing period shall be prior to the summer operating season.

If the Tramway is closed, the requirements of X.3.3 Maintenance must be current before the Tramway can reopen for public operation. Licenses shall expire one calendar year from the date of issue.

Section 21 New Installations and Modifications

21.1 Definitions.

21.1.1 New Installation.

“NewInstallation” means any passenger Tramway installation not previously licensed and shall include both new and relocated passenger Tramways (also reference rules 1.2.4.1 and 1.2.4.2).

21.1.2 Major Tramway Modification.

“Major Tramway Modification” means any modification to a passenger Tramway which alters its verified design or verified construction and which results in a substantive change:

- (a) in design speed of the system; or
- (b) in capacity by changing the number of carriers, spacing of carriers, or load capacity of carriers; or
- (c) in the path of the rope; or
- (d) in the type of brakes and/or backstops or components thereof; or
- (e) in structural arrangements; or
- (f) in power or type of prime mover or auxiliary engine; or
- (g) to control system logic.

Design and construction verifications are required. A major Tramway modification may be deemed a new installation by the Board and current requirements shall be applicable (reference rule 1.2.4.3).

21.1.3 Minor Modification.

“MinorModification” means any modification, addition, or deletion to a passenger Tramway which does not meet the criteria of a major modification but which results in a significant change in the Tramway's verified design or verified construction and materially affects its integrity, operation or control. A design verification is required, however, no construction verification is required. A minor modification may be considered a major modification at the discretion of the Board. If the authority appointed by the Board disagrees with the classification of the modification as “minor”, the matter may be referred to the Board for a final decision.

21.1.4 Minor Alteration.

“MinorAlteration” means any other addition or deletion to a passenger Tramway which does not meet the criteria of a major or minor modification or one for one replacement, and which does not materially affect the Tramway's integrity, operation or control. No design or construction verification is required. A minor alteration may be considered a minor modification or a major modification at the discretion of the Board.

21.1.5 One for One Replacement.

“One for One Replacement” means the replacement of a component with an equal component. A one for one replacement shall be considered as normal maintenance and not as a modification. No design or

construction verification is required.

21.2 Procedures Prior To Public Operation for New and Relocated Installations.

21.2.1 Submittal of Notice of New or Relocated Installation.

Before construction of the new or relocated installation begins, the area operator shall give notice of such activity to the Board on the required forms and include the appropriate fee.

21.2.2 Acknowledgment of New or Relocated Installation.

Upon receipt of the notice, the Board shall send an acknowledgment of such to the area operator together with the appropriate forms and requirements to complete the procedure as set forth in these rules and regulations.

21.2.3 Submittal of Request for Exception.

If the area operator proposes to depart from these rules and regulations, a request for exception must be made in writing by the area operator as set forth in rule 1.2.3.

21.2.4 Exception Request Procedure.

Within thirty (30) days after receipt of the request for exception as provided for in 21.2.3, the Board shall notify the area operator in writing of its action on the requested exception. If the Board denies or limits the requested exception, the Board's notification shall set forth the reasons for such action. Within sixty (60) days of the mailing of such notification, the area operator may appeal the Board's decision as provided for in Article 4 of Title 24 of the Colorado Revised Statutes.

21.2.5 Submittal of Verification of Design.

Before construction of the new installation is begun, the Professional Engineer in responsible charge of the design shall verify to the Board on the appropriate forms that the passenger Tramway design conforms to all rules and regulations of the Board. Copies of such designs, plans and specifications shall be submitted with this written verification.

21.2.6 Submittal of Acceptance Test Request.

Acceptance tests will be scheduled by the Board on a first come, first served basis. At least thirty (30) days before a requested acceptance test, the area operator shall notify the Board of a projected date for the required acceptance test. Upon receipt of such notification the Board shall establish a tentative acceptance test date for such passenger Tramway and shall notify the area operator of the same. If the projected date changes the area operator shall immediately notify the Board of same, and the Board shall reschedule the acceptance test. No later than three (3) days before the date of the acceptance test, the area operator shall notify the Board that the passenger Tramway is completed and ready for testing. The area operator shall verify to the Board that the required hours of continuous operation have been accomplished in accordance with 2.1.1.11.2 or 3.1.1.11.2 or 4.1.1.11.2. Upon receipt of such timely notifications, the initial inspection and acceptance test shall proceed as scheduled.

21.2.7 Submittal of acceptance test procedure.

At least thirty (30) days before the scheduled acceptance test date, the area operator shall submit an acceptance test procedure which was prepared by the Professional Engineer in responsible charge of the design (see 2.1.1.11, 3.1.1.11, 4.1.1.11, 5.1.1.11, 6.1.1.11, 8.1.1.11, or 2.1.1.11 ANSI B77.2-2004) for approval by the Board or the authority appointed by the Board.

21.2.8 Submittal of Verification of Construction.

After the new installation or relocation is completed and before the initial inspection is conducted, and before the acceptance test is observed, the Professional Engineer in responsible charge of the Tramway construction shall verify to the Board on the appropriate forms that the foundations, soils and concrete test samples have been inspected and completed according to the design, plans and specifications for such work. This document shall be required prior to the acceptance test.

21.2.9 Submittal of As-Built Drawings and Additional Documents.

Prior to or during the acceptance test, the "As-Built" designs, plans, specifications and drawings signed and sealed by the design engineer shall be submitted to the Board.

Within thirty (30) days after the acceptance test, the authority appointed by the Board shall notify the area operator of any additional documents which must be submitted.

21.2.10 Inspection and Acceptance Test.

All inspections and acceptance tests shall be according to these rules and regulations. Items failing to pass the acceptance test shall be retested if so directed by the Board.

21.2.11 Submittal of Verification of Initial Inspection and Acceptance Test.

The Board inspector shall report to the Board the results of the Acceptance Test and any deficiencies.

21.3 Procedures Prior to Public Operation for Tramways with Major Tramway Modifications.

In addition to the applicable requirements of Section 20 and rule 1.2, the following procedure shall be completed prior to public operation of the passenger Tramway .

21.3.1 Submittal of Notice of Modification.

Before the major Tramway modification commences, the area operator shall give notice of such activity to the Board on the required forms and include the appropriate fee.

21.3.2 Acknowledgment of Major Tramway Modification.

Upon receipt of the notice, the Board shall send an acknowledgment of such to the area operator together with the appropriate forms and requirements to complete the procedure as set forth in these rules and regulations.

21.3.3 Submittal of Request for Exception.

If the area operator proposes to depart from these rules and regulations, a request for exception must be made in writing by the area operator as set forth in rule 1.2.3.

21.3.4 Exception Request Procedure.

Within thirty (30) days after receipt of the request for exception as provided for in 21.3.3, the Board shall notify the area operator in writing of its action on the request. If the Board denies or limits the requested exception, the Board's notification shall set forth the reasons for such action. The area operator may appeal the Board's decision as provided for in Article 4 of Title 24 of the Colorado Revised Statutes.

21.3.5 Submittal of Verification of Design.

Before construction of the major Tramway modification is begun, the Professional Engineer in responsible charge of the design of the Tramway major modification shall verify to the Board on the appropriate forms that the design, plans and specifications for the major Tramway modification conforms to all rules and regulations of the Board and is compatible with the existing Tramway design. Copies of such designs, plans and specifications shall be submitted with this written verification.

21.3.6 Submittal of Acceptance Test Request.

Acceptance tests will be scheduled by the Board on a first come, first served basis. At least thirty (30) days before a requested acceptance test, the area operator shall notify the Board of a projected date for the acceptance test. Upon receipt of such notification, the Board shall establish a tentative acceptance test date for such passenger Tramway and shall notify the area operator of the same. If the projected date changes, the area operator shall immediately notify the Board of same and the Board shall reschedule the acceptance test. No later than three (3) days before the date of the acceptance test, the area operator shall notify the Board that the passenger Tramway modification is completed and ready for testing.

21.3.7 Submittal of Acceptance Test Procedure.

At least thirty (30) days before the scheduled acceptance test date, the area operator shall submit an acceptance test procedure which was prepared by the Professional Engineer in responsible charge of the design of the major Tramway modification for approval by the Board or the authority appointed by the Board. The acceptance test procedure shall take into consideration the modification which was made to the passenger Tramway and should be tailored to test the critical components of said modification.

21.3.8 Submittal of Verification of Construction.

After the major Tramway modification is completed and before the initial inspection is conducted and before the acceptance test is observed, the Professional Engineer in responsible charge of the construction of the modification shall verify to the Board on the appropriate form that the construction and/or installation of the modification has been completed according to the design, plans and specifications for such work. This document shall be required prior to the acceptance test.

21.3.9 Submittal of As-Built Drawings and Additional Documents.

Prior to or during the acceptance test, the "As-Built" designs, plans, specifications and drawings signed and sealed by the design engineer shall be submitted to the Board.

Within thirty (30) days after the acceptance test, the authority appointed by the Board shall notify the area operator of any additional documents which must be submitted.

21.3.10 Inspection and Acceptance Test.

All inspections and acceptance tests shall be according to these rules and regulations. Items failing to pass the acceptance test shall be retested if so directed by the Board.

21.3.11 Submittal of Verification of Initial Inspection and Acceptance Test.

The Board inspector shall report to the Board the results of the Acceptance Test and any deficiencies.

21.4 Procedures for Tramways with Minor Modifications.

21.4.1 Submittal of Notice of Modification.

Before the minor modification commences, the area operator shall give notice of such activity to the

Board on the required forms.

21.4.2 Acknowledgment of Minor Modification.

Upon receipt of the notice, the Board shall send an acknowledgment of such to the area operator together with the appropriate forms and requirements to complete the procedure as set forth in these rules and regulations.

21.4.3 Documentation of Minor Modifications.

The area operator shall keep a log documenting all minor modifications made to each of its passenger Tramways . Such log shall be readily available for inspection by the Board or designated representatives of the Board and shall contain at a minimum the following information:

- (a) Tramway name or other means of identification;
- (b) name of design engineer;
- (c) verification of design engineer on form approved by the Board;
- (d) date of modification;
- (e) purpose of modification;
- (f) description of modification;
- (g) names of personnel performing such modification;
- (h) date of modification review and acceptance by area operator or its authorized agent.

Each area operator's log of minor modifications shall be readily available to the Board's inspectors during every inspection.

21.5 Documentation of Minor Alterations.

The area operator shall keep a log documenting all minor alterations made to each of its passenger Tramways . Such log shall be readily available for inspection by the Board or designated representatives of the Board and shall contain at a minimum the following information:

- (a) Tramway name or other means of identification;
- (b) date of alteration;
- (c) purpose of alteration;
- (d) description of alteration;
- (e) names of personnel performing such alteration;
- (f) date of alteration review and acceptance by area operator or its authorized agent.

Each area operator's log of minor alterations shall be readily available to the Board's inspectors during every inspection.

Section 22 Inspections

22.1 Duty of the Area Operator.

It is the primary responsibility of the area operator to perform such inspections on passenger Tramways that are necessary to protect the safety of the public.

22.2 Duty of the Board.

The Board may cause to be made such inspections of passenger Tramways as it may reasonably require and may require the area operators to keep such records, make such tests, and produce such evidence as may be necessary in order to make the following determinations:

- (a) compliance with these rules and regulations and C.R.S. 25-5, Part 7;
- (b) compliance with any terms, conditions and requirements of licensure;
- (c) compliance with any requirements of a granted exception (variance);
- (d) inspection disclosed no unreasonable safety hazard.

22.3 Required Inspections

22.3.1 Annual Licensing Inspection.

The annual licensing inspection shall be made prior to approval of any application for licensure.

22.3.2 Annual Unannounced Inspection.

- (1) In addition to the annual licensing inspection, an unannounced inspection of every passenger Tramway shall be made at least once a year during the high-use season. No passenger Tramway shall be shut down for an unannounced inspection during normal operating hours, unless sufficient daylight is not available for the inspection. Up to five Tramway stops, not to exceed three (3) minutes in the aggregate, may be ordered by an inspector during normal operating hours. If additional stop time is required, it shall be done before or after normal operating hours.

Notwithstanding the provisions of this subsection, the Board reserves the authority to order a shutdown of a passenger Tramway for any reason set forth in these rules and regulations or in the Act.

- (2) The inspector conducting the annual unannounced inspection shall take particular note of any deficiencies noted in the annual licensing inspection report. The inspector shall note any uncorrected deficiencies in the inspection report. Any uncorrected deficiencies noted in the prior inspection may be grounds for revocation or suspension of license.

22.3.3 Acceptance Test Inspection. All new Tramways, Tramways on which major Tramway modifications have been performed, and Tramways which have not been operated for routine maintenance within the previous 2 years shall have an acceptance test inspection in accordance with 21.2.10 and 21.3.10.

22.3.3.1 Acceptance test inspection during operating season.

Tramways that require relocation or a major modification during the Tramway's operational season shall have an acceptance test inspection in accordance with 21.2.10 and 21.3.10.

22.3.4 Special Inspections. In addition to the annual licensing and unannounced inspection of each

passenger Tramway, the Board may order such special inspections as it may require. Depending on the circumstances, the Board may reasonably require special procedures and conditions to be followed, including but not limited to, the following:

- (a) that such special inspections be unannounced;
- (b) that the passenger Tramway to be inspected be shut down during the inspection;
- (c) that the inspection be conducted by a person other than a regular inspector employed by the Board when special expertise is required;
- (d) that, in appropriate cases, the area operator conduct the inspection.

22.3.5 Additional required inspection.

In addition to the annual licensing and unannounced inspections for each passenger Tramway, there may be additional required inspections after each 2000 hours of operation.

22.4 Inspection Procedures for Annual Licensing and Unannounced Inspections

22.4.1 Inspection of Equipment.

The inspector employed by the Board shall conduct a visual and audible inspection. The inspection shall determine whether any item of equipment does not appear to be in proper working order.

The inspector is not required to conduct specialized testing or inspection of devices which can only be accomplished by persons with special expertise, but the inspector shall recommend to the Board that further, specialized inspections be conducted if either visual and audible inspection, review of the relevant records and documents, or presentation of any other evidence reasonably indicates that such a inspection is warranted.

22.4.2 Inspection of Records and Other Documents

- (1) The inspector, employed by the Board, shall reasonably review the required logs, manuals, test reports of required self inspections, and manufacturer's recommended operation and maintenance manuals.
- (2) If the logs and records required by these rules and regulations or by order of the Board are not properly kept, the inspector shall so advise the Board in writing. If any of the documents to be inspected exist, but are not present for the inspection, the inspector shall not certify the passenger Tramway being inspected to the Board for licensure until he has had an opportunity to review such documents.

22.4.3 Other Areas of Inspection.

The Board shall determine whether the area operator has established a reasonable training program for its operation and maintenance personnel and whether practices reasonably necessary for safe operations are being followed.

22.4.4 Inspection report.

Upon completion of the inspection, the inspector shall provide the area operator of the passenger Tramway (s) being inspected, or his agent, with a copy of the preliminary report of observations made during the inspection. As soon as possible, but no later than fifteen (15) days after the completion of the inspection, the inspector shall transmit to the Board a final report. This report shall include a statement

as to whether it reasonably appears to the inspector that the passenger Tramway (s) inspected comply with the statutes, these rules and regulations, and any other applicable orders of the Board, and that the inspection of such passenger Tramway (s) disclosed no unreasonable safety hazards.

For each passenger Tramway inspected, the inspector shall list the items not in compliance with these rules and regulations. The area operator of the passenger Tramway (s) inspected shall also receive a copy of the inspector's final report.

Deficiencies stated in the annual inspection report shall be remedied as set forth in section 20.2.

Deficiencies stated in the annual unannounced inspection report and in any additional required inspection report(s) shall be remedied. A notarized letter from the area operator, stating that all the deficiencies listed in the report have been corrected, must be received by the Board office within twenty-eight (28) days from the completion of the inspection.

Deficiencies stated in an acceptance test report(s) as required in 22.3.3.1 shall be remedied. A notarized letter from the area operator, stating that all the deficiencies listed in the report have been corrected, must be received and acknowledged by the Board office before the Tramway can open for public operation.

The inspection completion date shall be noted on both the preliminary and final inspection report.

22.4.5 Report of Unreasonable Hazard.

If the inspector finds a condition in the passenger Tramway construction, operation or maintenance, logs, records or other documents (including the absence of these documents) exists which may endanger the safety of the public, the inspector shall immediately notify the area operator, or his agent, in writing, to this effect at the time of the inspection. The inspector shall also issue an immediate report to the Board for appropriate investigation and order. In the event that any of the documents required to be inspected or the lack thereof indicates that a violation of the Board's rules and regulations exists, or that a condition in passenger Tramway construction, operation, and maintenance exists, either of which may endanger the safety of the public, the inspector shall not certify the passenger Tramway being inspected to the Board for licensure. Additionally, an immediate report shall be made to the Board for appropriate investigation and order.

22.5 Qualified Inspectors

22.5.1 General Inspectors.

All required inspections as listed in Rule 22.3 in these rules and regulations shall be conducted by qualified engineers who shall have demonstrated to the Board's satisfaction that they have a working knowledge of the Board's current rules and regulations and inspection procedures.

22.5.2 Inspector conflict of interest.

No person, except a full-time employee of the Board, shall observe an acceptance test or conduct an inspection of a passenger Tramway if:

- (a) during the past two (2) years the inspector has been an employee of the owner or area operator of the Tramway ; or,
- (b) the inspector was involved at any level of the design, construction or modification of any Tramway at that area in the past five years; or,
- (c) the inspector provided any other services to that area in the past five years.

Each year, prior to July 1st, each contract inspector shall make known all potential conflicts of interest on appropriate forms provided by the Board.

Inspectors shall disclose all known and potential conflicts of interest, business association or other circumstances that could influence their judgment or the quality of their inspections each year prior to July 1st on appropriate forms provided by the Board. Should any conflicts arise during the year, the inspector is obligated to report them to the Board staff immediately.

This policy is not intended per se to prohibit employees or members of an inspector's firm or company from doing work for an area operator, provided that disclosures of potential conflict are made and that appropriate measures are in place to ensure that the inspector is not involved in, or privy to, information concerning the work.

Section 23 Passenger Tramway Incidents

23.1 Definitions.

"Reportable passenger Tramway incident" is defined as the following.

- (a) Any incident from a possible malfunction of a passenger Tramway in which a person is injured or killed. The Tramway shall cease operation as defined by Section 23.3 Limitation of operation.

For the purposes of Section 23, the term "injured" is defined as bodily damage requiring immediate medical attention.

- (b) Any incident in which a passenger is injured falling or jumping from a chair which is outside of the load or unload zone.

For the purposes of this rule, the "load zone" is defined as the area from the "wait here" sign to a point where the "no ski closure" ends or in the event there are no ski closures, at a point where the vertical clearance of the lift line is greater than eight (8) feet. This is measured from the bottom of the chair seat of an open carrier to the terrain or snow surface.

For the purposes of this rule, the "unload zone" is defined as the area approaching the unload area where the vertical clearance is less than eight (8) feet. This is measured from the bottom of an open carrier to the terrain or snow surface.

- (c) Any unintentional deropement of an aerial Tramway regardless of whether or not the Tramway is evacuated. This does not apply to Surface Lifts, Tows and Conveyors.
- (d) Any unplanned evacuation other than by prime mover or auxiliary power unit, regardless of cause. This does not apply to Surface Lifts, Tows and Conveyors.
- (e) Any fire involving Tramway equipment or structures that poses a risk to passengers, operating personnel or the structural integrity of the Tramway .
- (f) Failure of any electrical or mechanical component which results in the loss of control of the Tramway , unless the loss of control is a direct result of the malfunction of a single manual stop or speed control switch. Any of the following five (5) conditions is considered a loss of control:
 - (1) Tramway will not slow down when given the command to do so;
 - (2) Tramway will not stop when given the command to do so;
 - (3) Tramway accelerates faster than normal design acceleration;

- (4) Tramway self starts or self accelerates without the command to do so;
- (5) Tramway reverses direction unintentionally and without the command to do so.

(g) The failure of the following components or their primary connections are reportable:

Failure is defined as the inability of the listed components to continue to function as designed and continued operation would represent a hazard.

- (1) Terminal Structure;
- (2) Bullwheel;
- (3) Brake System Components;
- (4) Tower Structure;
- (5) Sheave, Axle or Sheave Assembly;
- (6) Carrier;
- (7) Grip;
- (8) Haul, Track or Counterweight Cable.

23.2 Reporting to the Board

- (a) All reportable passenger Tramway incidents occurring during public operation shall be orally reported to a Board member or the authority appointed by the Board as soon as reasonably possible but no later than twenty-four (24) hours after the time of such incident or within twenty-four (24) hours after the incident becomes known to the area personnel. A written report shall be delivered to the Board on forms approved by the Board postmarked within five (5) days of such incident or postmarked within five (5) days after the incident becomes known to the area personnel.
- (b) A reportable incident discovered on dates when the lift is not open to the public shall be orally reported to a Board member or the authority appointed by the Board as soon as reasonably possible, but no later than seventy-two (72) hours after such incident becomes known to the area personnel. A written report shall be delivered to the Board on forms approved by the Board or postmarked within fifteen (15) days following the verbal report. However, all oral reports must be made prior to reopening a lift.

Area personnel is defined as personnel involved with the operation, supervision and maintenance of the Tramway . This includes, but is not limited to, lift maintenance, lift operations, ski patrol and all supervisory staff.

23.3 Limitation of Operation.

When a death or injury results from a possible malfunction of a passenger Tramway , as defined in Section 23.1 (a), the owner or area personnel of the Tramway shall immediately cease operation and notify the Supervisory Tramway Engineer or a member of the Board by telephone. No part of the Tramway shall be removed or disturbed before permission has been given by a Board member, the Supervisory Tramway Engineer, or his designated representative, except to the extent that such action is necessary to avoid further death or serious injury.

An investigation of the occurrence shall then be initiated within 24 hours and shall precede any authorization to resume public operation of the Tramway . The report of investigation shall include a factual account of the incident, the nature and extent of injuries to persons, damage to the passenger Tramway , any witness statements, any other pertinent details, and recommendations for remedial measures to be taken prior to resuming operating.

23.4 Logs - Components.

Area operators shall maintain a log in a format approved by the Board which shall contain reports of components replaced or repaired that do not meet the definitions of CPTSB section 23.1(g) and are not part of maintenance due to normal wear. These reports shall be submitted during public operation to the Board at monthly intervals not to exceed 60 days from the date of occurrence. When the lift is not open to the public, the Component Log shall be submitted on a monthly basis when routine maintenance is being performed.

This log shall be available for inspection and, if requested by the Board or its duly authorized representative, the area operator shall make copies available of the relevant records relating to any of the components.

23.5 Logs - Stoppages.

Area operators shall maintain a passenger Tramway log which shall contain reports of all passenger Tramway stoppages over ten (10) minutes. For each such stoppage, the log shall contain the following information:

- (a) name and/or number of the passenger Tramway ;
- (b) date of stoppage;
- (c) reason for stoppage;
- (d) description of any mechanical, structural, electrical, or other problem (if known);
- (e) under investigation (yes or no);
- (f) action taken, if any;
- (g) length of time the Tramway was down.

This log shall be available for inspection and, if requested by the Board or its duly authorized representative, the area operator shall make copies available of the relevant records relating to any of the stoppages.

23.6 Logs - Loading, Unloading Incidents and Passengers Falling or Jumping from Lifts

Area operators shall maintain a log which shall contain reports of all loading and unloading incidents in which injury occurs. This log shall also contain any incident in which a passenger falls or jumps from a chair with no injury, of which the area personnel has knowledge, that is outside the load or unload zone. For the purposes of this rule, the "load zone" and "unload zone" is defined in 23.1(b).

For each such loading and unloading incident, the log shall contain the following information:

- (a) name and/or number of the passenger Tramway ;
- (b) date the incident occurred;

- (c) name, address and age of person injured;
- (d) description of the injury;
- (e) description of the incident;
- (f) under investigation (yes or no).

For each such fall or jumping incident, the log shall contain the following information:

- (a) name and/or number of the passenger Tramway ;
- (b) date the incident occurred;
- (c) age and gender of person involved, if known;
- (d) location of incident;
- (e) under investigation (yes or no).

This log shall be available for inspection and, if requested by the Board or its duly authorized representative, the area operator shall make copies available of the relevant records relating to any of the incidents.