

COLORADO PASSENGER TRAMWAY SAFETY BOARD INCIDENT / COMPONENT LOG CODES

Cause Codes (Choose one or more codes)

Section 1 External to Lift

- | | |
|--|--------------------------------|
| 1.1 Wind | 2.1 Operator / Attendant Error |
| 1.2 Avalanche | 2.2 Maintenance Error |
| 1.3 Trees falling on line | 2.3 Fatigue |
| 1.4 Lightning | 2.4 Wear |
| 1.5 Rock Avalanches | 2.5 Mechanical Malfunction |
| 1.6 Mud Slides | 2.6 Electrical Malfunction |
| 1.7 Fire | 2.7 Unknown |
| 1.8 Sabotage | 2.8 Fuel Problem |
| 1.9 Third Party (<u>not</u> skier, operator, mechanic) | 2.9 Other |
| 2.0 Skier Error | 3.0 Ice |
| | 3.1 NDT Indication |

Failure Codes (Choose one or more codes)

Section 3 Dynamic Behavior of Ropes

- | | |
|--|---|
| 3.1 Haul rope going over track rope | 3.7 Deropement of the auxiliary cable (evac.) |
| 3.2 Track rope going over haul rope | 3.8 Deropement of cable at bullwheel |
| 3.3 Entanglement of auxiliary cable with other cable | 3.8.1 Deropement of cable at guide sheave |
| 3.4 Derailment of the track rope | 3.8.2 Deropement of cable at counterweight sheave |
| 3.5 Derailment of haul rope (bi-cable) | 3.8.3 Damage / Wear of haul rope |
| 3.6 Deropement of the monocable haul rope | 3.8.4 Damage / Wear of tension rope |

Section 4 Mechanical Components

- | | |
|--|--|
| 4.1 Gearbox damage or failure | 4.5.4 Hydraulic Plumbing failure |
| 4.2 Pillow block (bearing) damage or failure | 4.6 Other Mechanical damages or failures |
| 4.3 Brake damage or failure | 4.7 Structural failure |
| 4.3.1 Service Brake malfunction | 4.7.1 Crack in structural member |
| 4.3.2 E-Brake malfunction | 4.7.2 NDT indication |
| 4.3.3 HS Rollback malfunction | 4.7.3 Broken weld |
| 4.3.4 Bullwheel Rollback malfunction | 4.7.4 Broken Bolt/Connector |
| 4.4 Auxiliary engine damage or failure | 4.7.5 Failure of member to support Load/Member distorted |
| 4.5 Tensioning system damage or failure | 4.8 Bullwheel Weld failure |
| 4.5.1 Counterweight hung-up | 4.9 Bullwheel Bearing failure |
| 4.5.2 Counterweight bottomed out | 4.10 Shaft failure - Bullwheel & drive |
| 4.5.3 Hydraulic Ram failure | 4.11 Bullwheel liner failure |

Section 5 Electrical and Hydraulic Equipment

- | | |
|--|--|
| 5.1 Incoming Power failure | 5.3 Low voltage control system damage or failure |
| 5.1.1 Breaker/fuse failure | 5.3.1 Control wiring failure |
| 5.1.2 Standby Generator failure | 5.3.2 PLC/Computer failure |
| 5.2 Drive including motor & DC damage or failure | 5.3.3 Accel/Decel system failure |
| 5.2.1 SCR Drive failure | 5.4 Remote control equip. failure (start from cabin) |
| 5.2.2 AC Drive failure | 5.4.1 Deropement Switch/Circuit failure |
| 5.2.3 Drum Controller failure | 5.5 Other Electrical equipment failure |

Section 6 Carriers

- | | |
|---|---|
| 6.1 Chair, Cabin or other vehicle damage or failure | 6.9 Failure of grip to clamp on haul rope |
| 6.2 Carriage damage or failure | 6.10 Failure of grip to detach |
| 6.3 Track rope brake damage or failure | 6.11 Carrier derailment |
| 6.4 Track rope trigger mechanism damage or failure | 6.12 Carrier falls to ground |
| 6.5 Hanger assembly damage or failure | 6.13 Collision of two carriers |
| 6.6 Socket of haulrope carriage damage or failure | 6.14 Collision of carrier & structure of terminal |
| 6.7 Grip | 6.15 Collision of carrier and tower |
| 6.8 Grip slipping | 6.16 Collision of carrier and any obstacle |

Section 7 Line Equipment

- | | |
|---|---|
| 7.1 Damage/failure of structure (includes towers) | 7.2 Damage/failure of tower foundation |
| 7.1.1 Catwalk | 7.3 Damage/failure of any part of tower |
| 7.1.2 Crossarm | 7.4 Saddle damage or failure |
| 7.1.3 Lifting frame | 7.5 Sheave train damage or failure |
| 7.1.4 Handrails | 7.6 Line sheave damage or failure |
| | 7.7 Other failure or damage |

Section 8 Miscellaneous

- 8.1 Skier falling from aerial lift
- 8.2 Skier jumping from aerial lift
- 8.3 Skier injured on surface lift

Section 9 Other

- 9.1 Other