

# **GC&SJ Operating Rules 2007**

**The Colorado Railroad Museum's  
Golden City & San Juan Railroad**

**Rules and Regulations  
of the  
Operating Department**

GOLDEN CITY  
SAN JUAN

2007

This book supersedes all prior rule books.

#### **Visitor Injury or Illness**

1. Immediately report any incident to front office and notify 9-1-1 if medical assistance is required.
2. Do not attempt any type of first aid other than for minor cuts or scratches.
3. Stay with injured person until emergency personnel arrive. If necessary, send someone to front gate of parking lot to direct emergency personnel to location of injured person.
4. Make every effort to obtain in writing name, address and phone number of injured person, name and phone number of relative to be notified,

and names, addresses and phone numbers of any witnesses to incident.

5. If executive director or business manager are not on premises, both should be notified as soon as possible.

6. It is important to offer every possible courtesy and attention to the injured person.

7. A written report of the incident must be completed as soon as possible.

#### General Notice

Safety is of the first importance in the discharge of duty.

Obedience to the rules is essential to safety and is required.

To enter or remain an operating person is a pledge of willingness to obey the rules at all times.

Cooperation of each operating person in the enforcement of these rules is necessary.

The service demands the faithful, intelligent and courteous discharge of duty.

Rules cannot be written to cover every possible situation that may arise in connection with each and every task which is associated with your duties. Therefore, it is incumbent upon each operating person to ensure that they safeguard themselves, other operating persons, visitors and museum property.

#### General Rules

A. Operating persons must provide themselves with a copy of these rules and have a copy available for reference during operations.

B. Operating persons must be conversant with and obey the rules and instructions and have passed required examinations.

If in doubt as to the meaning of any rule or instruction, they must apply to the Museum Rules Instructor for an explanation.

Rules may be issued, canceled or modified by the Museum Rules Officer and Special Notice.

C. Operating persons must pass the required examinations to participate in operations.

D. Safety must be the first consideration in all operations. In all cases the safest course must be taken.

An operating person who is careless of their own safety, or that of others, will not be able to participate in operations.

E. Operating persons must not rely on the carefulness of others, but must protect themselves when their own safety is involved.

Each operating person will be held responsible for their observance of the rules.

They must cooperate with and assist each other in carrying out the rules and must report any violation thereof, or any condition or act by any person that may imperil the safety of persons, trains or museum property.

F. Accidents and personal injuries or fire must be immediately reported to the **Museum Office Person in Charge**. Then, the Colorado Railroad Museum's Emergency Procedure - Fire and Visitor Injury or Illness Procedure, found at the front of this Rule Book, must be followed.

Defects in track, or any condition which may affect the safe operations must be reported to the Trainmaster immediately.

The Trainmaster will see that such defects are evaluated and corrected as necessary, before train operation continues.

G. The use of narcotics is prohibited. The use of intoxicants or any beverage containing intoxicants by operating persons during or within 8 hours before operations or having in their possession during operations is prohibited.

Operating persons shall not participate in operations under the influence of any drug, including those prescribed by a doctor or dentist, that will in any way adversely affect their alertness, coordination, reaction, response or safety nor shall such drug, medication or other substance be used by operating personnel during operations.

H. Smoking is prohibited on the property where danger of fire exists therefrom and at other designated locations.

I. Operating persons must expect the movement of trains, engines, cars or other moveable equipment at any time, on any track, in either direction.

J. It must be assumed by all operating persons that the general public will be present around all tracks and that these visitors will be unfamiliar with operating procedures and signals.

Operating persons must watch out for these visitors with extra care, assuming they will be preoccupied and unaware of train movements. Trains, engines and equipment will move **With Caution** in these situations.

Operating persons must maintain a safe distance from equipment and **do not**

1. Cross or step foul of tracks closely in front or behind moving equipment or close to the end of equipment.
2. Go between equipment if the opening is less than 20 feet apart.
3. Cross tracks in front or behind standing equipment unless there is at least 20 feet between the person and the equipment.

Operating persons must not step on the top of the rail or within the movable part of a switch or derail.

Operating persons/employees should not walk and stand between the rails unless it is required to perform their duty.

Operating persons must inform themselves as to the location of structures or obstructions where clearances are close.

K. Operating persons must conduct themselves in such a manner that the museum will not be subject to criticism or loss of good will.

L. Operating persons must not occupy the roof of a moving car, caboose or other moving equipment.

Operating persons getting on or off moving equipment is **prohibited**, except in case of an emergency. Trains will be stopped before getting on or off of equipment.

### General Safety Rules

1. "Safety First" This applies to all activities at the museum. If any operation can't be done safely, it must not be done at all. Rules can't be written to cover every possible situation, but in all cases the safest course must be taken. Safely working in the railroad museum environment will allow you to have a rewarding and enjoyable experience.

2. Each individual is responsible for their own safety, the safety of others and the safety of property.

3. Always be on the alert for hazardous or unsafe conditions. If they are found, eliminate them; if this can't be done, report them to the "Museum Employee in Charge", warn others and take such steps as necessary to protect the condition until it can be corrected.

4. Do not step on top of a rail, step over it and be alert for wet and slippery conditions.

5. Proper eye protection must be used when welding, grinding, chipping or using compressed air for removing dirt or scale.

6. When getting on or off equipment with ladders or vertical steps, always face the equipment and wear shoes or boots with a defined heel.

7. Do not use or operate any equipment unless you have been qualified by the museum for its use. This includes operation of railroad equipment, tractors, cutting torch, welder, table saw and radial arm saw. Training for their use is available and provisions are made for individuals to operate such equipment while under the direct supervision of a qualified person.

8. Do not get under any equipment being held up by jacks, unless it is also being supported by other devices with sufficient capacity to hold their weight if the jacks fail or are displaced.

9. Do not walk or jump over pits. Walk around them, unless a walkway for crossing them is provided.

10. Everyone will assist in keeping trash picked up and work areas clean and orderly.

11. Tools must not be left unattended outside shop buildings. All tools must be returned to their storage location after use.

12. The tractor must not be left unattended with the engine running or the bucket in the raised position.

13. The ash pit must be covered when not in use.

14. Visitors are not allowed to climb on top of equipment.

15. Shop buildings should be locked when museum persons are not in the area.

16. When outside the roundhouse, cabs of operable locomotives or geese will have all doors and windows closed and locked before being left unattended.

### General Operating Rules

100. Operations are under the control and supervision of the Trainmaster. Before operations begin, the Trainmaster, or other person in charge, will conduct a safety/job briefing with all employees and/or operating persons that are present. A new briefing will be conducted if new people arrive, or if changes occur to the operating plan or other conditions change. Each operating plan should consider hazards, assign specific responsibilities and an explanation of those assignments.

101. When equipment is moving, the Engineer or Motorman must maintain a constant lookout for people or objects on or near the track.

102. When equipment is backing, a constant lookout must be maintained at the rear of the movement by a crew member who is in contact with the Engineer or Motorman.

103. When equipment is shoved, the person protecting the movement must walk or ride the side of leading end of leading car giving signals. **Shoving blind is strictly prohibited.**

104. When more than one piece of equipment is in operation at the same time, **extreme caution** must be used to prevent collisions.

105. Visitors will not be allowed to ride on coach or caboose platforms or the outside of any piece of equipment. Passengers must be seated while the train is moving.

106. Whenever railroad equipment crosses the museum entrance crossing, the track must be seen or known to be clear. A crossing flagman will be used during all passenger operations and at other times if

possible. If no flagman is available during other operations, **extreme caution** will be used to prevent collisions.

106a. A yellow track light on the crossing signal indicates the signal is operating and the train or railroad equipment may proceed across the crossing with caution.

107. Riding on the foot boards of locomotives or tenders is prohibited.

108. The cab of a live locomotive will not be left unattended with visitors on the property.

109. The motors of geese will be turned off when the motorman is out of the cab, except when the hand brake is set and it is necessary for maintenance purposes.

110. Locomotive cab rides for museum visitors are given at the discretion of the engine crew and are limited to two visitors at one time.

111. Whenever equipment is in motion, climbing or riding on equipment end ladders is prohibited.

112. Do not cross track or place any part of your body between the rails when equipment is approaching within 50 feet. Stop the movement, then cross over or make adjustments.

113. Headlights will be displayed to the front of every train by day and by night.

#### Switches and Derails

120. The position of switches or derails is the responsibility of the person using them.

121. Persons handling switches and derails must see that they are properly lined for the route to be used. It must be seen that the points fit properly and lock or hook is in hasp before proceeding over it.

122. After closing a switch or derail lock, it must be tested to be sure it is locked by pulling on the chain.

123. When practicable, crew members on locomotive must see that switches and derails near the engine are properly lined.

124. All main line switches must be lined and locked for main line movement, except when switching over them.

125. If located on a curve, a main line turnout equipped with switch points must in addition be equipped with a foot lock and be locked or clamped and inspected for proper fit after each use of the switch and the beginning of each day's operation.

126. Switchman normally should stand on the opposite side of the track from the switch stand before movement is started.

127. All derails must be left lined and locked in the derailing position, except when operating over them.

128. It must be known that a derail is opened before proceeding over the switch leading to it.

#### Hand Brakes

130. When cars are left standing, all cars must be chocked and be secured with operative hand brake, if possible.

131. Cars left standing without an operable hand brake will be chocked and chained.

132. If cars are left on a grade, they must be chained to the rail through the truck side frame, and secured with a lock. The down hill car on the grade will be the one chained.

133. Air brakes must not be depended upon to hold cars.

### Air Brakes

140. Brake equipment on locomotives and cars must be inspected and tested in accordance with the regulations set forth herein.

141. Brake pipe pressure for all trains is 70 pounds per square inch.

142. All condensation must be blown from the brake pipe of the locomotive before coupling hose to cars.

143. The independent brake valve must not be actuated during leakage tests.

144. To insure proper operation of the brakes, all angle and cut-out cocks must be fully open from the locomotive to the rear car.

145. When angle cocks are open, the handles stand straight (parallel) with the pipe and when closed the handles stand crosswise (at right angle) with the pipe.

146. Retaining valves will not be used.

147. Every car carrying passengers must have operating air brakes.

148. In regular passenger train operation, no more than one car with inoperative air brakes will be carried.

#### Initial Terminal Train Air Brake Tests

150. All trains must be inspected and the air tested as prescribed, by a qualified person, at the following points:

150a. Where the train initially is made up.

150b. When the train consist is changed.

151. Car brake cylinder piston travel should be adjusted on cylinders with 8-inch stroke to no less than 5 inches and no more than 7 inches.

#### Procedure for Initial Terminal Inspection and Test

152. After the air brake system is charged to within 5 pounds of the locomotive feed valve setting as indicated by a gauge on rear of train, or when the train line has been charged for 3 minutes or more, as indicated by a reliable watch, and after proper signal is received:

152a. 20 pound brake pipe reduction will be made from pressure indicated by brake pipe gauge on locomotive.

152b. After reduction is made, one long sound on the whistle should be made to indicate that brakes are applied for the test.

152c. After brakes have been applied, a brake pipe leakage test must be made for one minute. Brake pipe leakage must not exceed 5 pounds per minute.

152d. Inspection of the train brakes must be made to determine that angle cocks are correctly positioned, that the brakes are applied on each car, that piston travel is correct, that brake rigging does not bind or foul and that parts of the brake equipment are properly secured.

152e. When inspection of the application of the train brakes is completed and upon receipt of proper signal to release the brakes, air brakes must be released. Two long sounds of the whistle should be made to indicate that the brakes have been released.

152f. Each brake must then be inspected to see that all brakes have released.

152g. During a terminal air brake test, brakes must not be applied or released until proper signal is given, except in case of excessive brake pipe leakage.

153. A qualified person participating in the test and inspection shall notify the Engineer that the

initial terminal train air brake test has been satisfactorily performed.

154. If the brake pipe gauge indicates leakage in excess of 5 pounds per minute, Engineer must give one short and one long sound of the whistle and place the automatic brake valve in "Running" position to recharge train. Upon receipt of this signal, train must be inspected for leaks and leakage corrected, after which a complete test of brakes as prescribed by rule 152 must be made.

#### Application and Release Test

160. This test must be performed by qualified persons when:

160a. Whenever the locomotive is detached from the train.

160b. Whenever the train or engine crew is changed.

161. The train air brake system must be charged to within 5 pounds of locomotive feed valve setting.

161a. Upon proper signal to apply the train brakes, a 20 pound brake pipe reduction must be made. It must be determined that the brakes apply on the rear car as indicated by gauge or observation.

161b. Upon proper signal to release the train brakes, the automatic brake valve must be placed in the "Running" position. It must be determined that the brakes release on the rear car, as indicated by gauge or observation.

#### Running Air Test

165. Before the first downgrade movement after the initial air test, a running air test will be made at the top of the grade to assure that the train brakes are operating.

#### "Blue Flag" Rule

This rule is to be used whenever it is necessary to work on the engine or car(s) of a train that is in operation or when persons are working on or about

locomotives or cars that are not otherwise protected when switching operations are taking place.

171. A blue signal displayed at one or both ends of an engine, car or train, or on engineman's side of cab and throttle, indicates that work is being done on or about it. When thus protected, it must not be coupled to or moved. Only the man placing it can remove it, unless it is transferred to the custody of another, which must be done before the man placing it leaves the museum, or the blue flag is removed. Other equipment must not be placed on the same track so as to intercept the view of the blue signal without notifying the man placing it. When emergency repair work is to be done under or about cars in a train and a blue signal is not available, the engineman and fireman or motorman will be notified and protection must be given those engaged in making the repairs.

#### Locomotive Bell and Whistle & Horn Signals

180. Engine bell or goose horn must be sounded when equipment is about to be moved, when approaching and passing the main museum road crossing, occupied passenger platforms and elsewhere when necessary as a warning signal.

181. The use of whistle signals will be kept to the minimum, in both number and duration, consistent with safe train operation.

182. The whistle/horn signals prescribed are illustrated by "o" for short sounds and "\_\_\_" for longer sounds. The sound of the whistle should be distinct, with intensity and duration proportionate to the distance the signal is to be conveyed.

- |     |     |                                      |
|-----|-----|--------------------------------------|
| (a) | ___ | When standing: Brakes applied.       |
| (b) | ___ | Brakes released, Proceed.            |
| (c) | o   | After stopping: Train will not move. |

- (d) o o o      When standing: Back up.  
When running: Train will  
stop at next station.
- (e) o o o o      Call for signals.
- (f) o \_ \_      Inspect train for air  
leaks or sticking brakes.
- (g) \_ \_ o \_ \_      Approaching museum  
entrance crossing when  
flagman is not present.
- (h) o o o o      Warning to person on or  
very near track.

### Radio Rules

The following rules and requirements cover the use of the museum's railroad radio system and govern its use.

190. Radio communication systems are under the jurisdiction of the Federal Communications Commission. The museum is responsible to the Commission for the proper operation by employees and volunteers.

191. The radio must be used only in connection with museum and railroad business and in compliance with these operating rules.

191a. No person shall knowingly transmit any false emergency communication, any unnecessary, irrelevant or unidentified communication, nor utter any obscene, indecent, or profane language via radio.

192. Only persons specifically authorized to do so by the FCC are permitted to make any internal adjustments to a railroad radio.

193. An emergency call must be preceded by the word "Emergency" repeated 3 times. Such calls must be used only to cover initial reports of de-

railments, collisions, injuries, fires, obstructions to track or other matters which would cause injury or damage to property and contain as complete information thereon as possible.

193a. All persons must give absolute priority to an emergency call from another station and, except in answering or aiding a station during an emergency, must refrain from sending any communication until there is assurance that no interference will result to the station initiating emergency calls.

194. Before transmitting, a person must listen a sufficient interval to insure that the channel is not already in use.

195. Radio calls must be promptly acknowledged; acknowledgement may be delayed only if it would interfere with other duties relating to safety.

196. During each tour of duty, enginemen and conductors are responsible for verifying that radios are working properly.

196a. Radio test must consist of an exchange of voice communication, determining quality and readability of transmission.

197. To indicate to the receiving person the transmission is ended and that a response is not expected, the transmitting person must say the word "out".

198. To indicate to the receiving person the transmission is ended and that a response is expected, the transmitting person must say the word "over".

199. When radio is being used for switching, the direction and distance to be traveled must be given.

199a. When radio is being used to control a movement and additional instructions are not given, the movement must be stopped in one-half the distance specified, unless further instructions are received.

199b. Failure of communication must be regarded as a "stop" signal.

### Hand Signals and Their Use

200. Hand signals may be used in lieu of radio signals, especially when switching. But a combination of hand and radio signals cannot be used. A job briefing will be held when a change from hand to radio or radio to hand signals is to be made.

201. If operations are being directed by hand, a white light will be used to give signals at dusk and during the night.

202. When practicable, hand signals to trains must be given on engineer's side, but hand signals must be respected when received from either side.

203. All operating persons must keep a vigilant lookout for signals and must act upon them strictly in accordance with the rules.

204. The utmost care must be exercised by crew members to avoid acting upon signals that are not understood, or that may be intended for other trains or engines. In case of doubt, movement must be stopped or, if stopped, no movement made until understanding is reached.

205. Crew members giving signals must locate themselves so as to be plainly seen and give them so as to be clearly understood.

206. When not involved in giving hand signals, operating persons must avoid making motions which might be construed as a hand signal.

### Hand and Lantern Signals

207a. Stop/Apply Brakes      Swung  
at right angle to the track.

207b. Emergency Stop      Swung  
quickly at right angle to the track.

207c. Proceed/Forward      Hand(s)  
and arm(s) moved toward the body (counter-clockwise) or lantern raised and lowered vertically.

207d. Back up/Reverse Hand(s)      and  
arm(s) moved away from the body (clockwise) or lantern swung in circle above head.

207e. Release Brakes      Hand  
held steady over head.

207f. Slow      Hold  
hand steady & extend arm straight out.

207g. Car Length      Starting  
with your hand near your head, move hand up and away at 45 degree angle until arm is fully extended. Repeat once for each car length.

208. Other ("Western") hand signals can be used if all operating persons are told of this in advance at the job briefing

208a. Forward      Both      hands  
moved away from the body, starting with them together in front.

208b. Back Up      Both  
hands moved toward the body starting with them away from the body.

208c. Couple Up      Bring      hands  
together with the fingers cupped.

208d. Uncouple      Over-lapping  
cupped hands pulled apart.

208e. Apply Brakes      Hand      waved  
horizontally across the body.

208f. Proceed      Hand      waved  
vertically up and down.

208g. Easy      Hands      out-  
stretched with fingers up and arms rocked up and down.

208h. Couple Air Hoses Hands held at 45 degrees above chest with fingers cupped and hands brought together.

### Crew Responsibilities

209. Any object waved violently by any person on or near the track will be taken as a stop signal.

210. Trains operate under the authority of the Conductor and he will give the signal to the engineer or motorman, to move. The Conductor can delegate his authority to another operating person, if necessary.

211. The locomotive or goose is the responsibility of the Engineer or Motorman properly qualified to operate the locomotive or goose.

211a. Under his supervision and direction, another person may operate the locomotive or goose.

212. A locomotive or goose will not move before a signal is given by bell, horn or whistle.

213. The Engineer or Motorman will report any defect, on the form provided for that purpose, and notify the relieving Engineer or Motorman of same.

214. If a train or goose is going to be delayed due to derailment or breakdown, passengers should be detained using care to avoid injuries.

### Switching Operations

220. All persons involved in switching, except those on the locomotive, must have a brake club available.

221. When switching, cars must be pushed or pulled to a stop. **Kicking cars is prohibited.**

222. Before uncoupling, wheels must be blocked and hand brakes set.

223. Couplings must be tested by stretching coupling to see that pins have dropped before removing blocks and releasing brakes.

224. Persons must not go between cars and/or locomotives, one or both of which are moving. If adjustments are necessary, all movement must be stopped.

225. Cars connected by chains or other means must be disconnected by hand before uncoupling them.

226. Setting out cars on steep grades should be avoided. If necessary, they must have hand brake set and chained to the rail, before the locomotive is uncoupled.

227. In picking up such a car with the locomotive upgrade, it must be known that the car is securely tied down, so that if the coupling fails to make, the car can't run away.

228. Handling a car that has inoperative air brakes down grade below the locomotive is discouraged. If it must be done, the car will be chained to the next uphill car or locomotive with operative brake with figure "8" chain around the couplers.

### Turntables

230. Equipment shall not approach within 100 feet of the turntable unless the table is lined and locked for the track being used.

231. The turntable lock must be in place before equipment is moved on or off of it. When not in use, turntable must be locked in place and the stand locked with padlock. Equipment will not move off the turntable toward the roundhouse until the doors to that track are open and any person working on or near it notified, even if there is no intention of placing equipment inside.

232. When any piece of equipment is left standing on a track leading directly to the turntable pit, it must be chocked and have an operative hand brake set. If the hand brake is inoperative, it must be chained to the rail.

### Definitions

**Angle Cock:** A valve with an attached air hose at the end of a car or locomotive. It is open when its handle stands straight (parallel) to the pipe and closed when the handle is crosswise (at a 90 degree angle) to the pipe.

**Automatic Brake Valve:** A device to set and release all brakes connected to the train air line.

**Blue Flag:** A blue flag, blue light or blue sign used with the Blue Flag Rule.

**Derail:** A device that will derail a car to prevent it from going further on that track.

**Independent Brake Valve:** A device to set and release the locomotive brakes, while not affecting the other brakes connected to the train air line.

**Retaining Valve:** An air valve that, when applied, can retain brake pressure on a car, even when the train brakes are released.

**Switch:** See Turnout.

**Trainmaster:** The person in charge of train operations for the day.

**Turnout:** An assembly of switch, frog and guard rails that permits equipment to go from one track to another.

**Turntable:** A bridge, with tracks, rotating horizontally to align its tracks with any adjacent radial track.

### Roadway Machinery and Equipment

420. Persons must keep clear of lifted loads or booms under strain and of cables or chains in tension.

421. Equipment operators must not move loads without proper signal from person in charge of the operation.

422. Riding on a load, hook, or bucket is prohibited.

423. When transporting rail that is at right angles to the equipment moving it, protection must be provided to prevent rail ends from swinging or hitting cars or structures.

424. It must be determined that no one is in a position to be injured before turning on electricity, gas, steam, air, water or starting any machine in motion.

425. Standing in front of or directly behind another person who is using a sledge hammer, spike maul, hatchet, axe, bar or other striking tool is prohibited.

426. During spiking operations, persons must stand clear to avoid being hit by flying spikes.

427. Materials and parts must not be piled or left in a manner in which they may fall.

428. Using fingers to align holes is prohibited.

429. Gasoline or other flammable liquids must be protected from open flames, and cutting or welding operations.

430. It must be ascertained that chains, cables, ropes and supports are of sufficient size and condition to safely carry the weight to be handled.

431. Leaving tools, equipment and tractors within 6 feet of the rail when not in use is prohibited.

432. Tools, materials or rubbish shall not be left where they constitute a slipping or tripping hazard.

433. Leaving a load suspended unattended is prohibited.

434. When lifting, care must be taken to lift the load smoothly and without jerks to the minimum height required.

435. Only persons who have been qualified to do so may operate equipment or machinery.

436. Chips or shavings from drills or other power tools or machines must not be removed by hand; use brushes, hooks or other suitable tool.

#### Fire Prevention

450. Fire protection equipment must be properly maintained.

451. Gasoline and other flammable liquids must be kept in approved containers and storage buildings.

452. Smoking or open flame is prohibited when fueling vehicles or equipment.

453. Smoking or open flame is prohibited in or around tool cars or building containing flammable materials.

454. When cutting operations are being done next to wood, the wood must be wetted down or otherwise protected.

#### Tractor Operating Rules

460. All fluid levels must be checked at the start of each day's operation.

461. The qualified operator is responsible for its safe operation and movement.

462. Only the operator shall ride on the tractor.

463. The tractor's speed must be such that it may be stopped within its own length (about 15 feet).

464. No movement of the tractor shall occur unless it can be done safely.

465. The bucket or forks must be lowered when the operator is off the tractor, unless operations require otherwise.

466. If the tractor is left unattended, the engine must be shut off, brakes set, bucket or forks lowered to the ground and ignition key removed.

467. During operation should anything unusual occur (i.e.: noise, vibration, leak, etc.), the tractor must be shut down, the cause investigated and repairs made if necessary.

468. When an operation with the bucket or forks is being performed, the operator will take signals from only one person on the ground. However, others are still responsible for their own safety.

469. When it is necessary to cross a track with the tractor, it should be done at as close to a right angle as possible.

470. When moving rolling stock with the tractor, a light hand brake should be set to prevent movement when tractor is stopped. Chocks should also be used. Pulling is preferable to shoving.

471. When pulling rolling stock with the tractor, a straight pull should be used if possible.

472. When shoving rolling stock with the tractor, the cars must be pushed on the coupler, not on the corner.

473. When pulling any object, persons in the area must stay clear of chains, cables, etc. in case of failure.

474. The weight limit for the tractor in a straight lift is 1100 pounds. The lift shall not exceed 6 ft. in height.

**Tractor Signals**

480. The following signals shall be used for signaling tractor operator:

480a. Lift Index finger extended, pointed up and rotated.

480b. Lower Index finger extended, pointed down and rotated.

480c. Tilt/Dump Hand and arm extended, far side toward tractor operator, and rotated sideways.

480d. Forward Hand(s) and arm(s) moved toward body (counter-clockwise).

480e. Reverse Hand(s) and arm(s) moved away from body (clockwise).