

## **120-3-28 RULES AND REGULATIONS FOR CARNIVAL RIDES**

### **Rule 120-3-28-.01 Purpose**

These rules establish minimum safety standards for the installation, assembly, repair, maintenance, use, operation, disassembly, and inspection of amusement rides at carnivals and fairs. These safety standards are for the protection of the employees and the general public using these rides.

### **Rule 120-3-28-.02 Application**

The rules apply to amusement rides at carnivals and fairs, to the manager of such rides, and to the persons employed in connection with these rides and to their employees.

### **Rule 120-3-28-.03 Definitions**

Those definitions as listed in Chapter 15 of Title 25 and:

- (a) "Approved" means in compliance with these Rules and Regulations.
- (b) "A.S.T.M." - the American Society of Testing Materials.
- (c) "Average Adult Passenger" means for the purpose of design, a person weighing 170 Pounds.
- (d) "Average Child Passenger" means, for the purpose of design, a child weighing 75 Pounds and is 12 years of age or under.
- (e) "Carnival" means an enterprise principally devoted to offering amusement or entertainment to the public in, upon, or by means of amusement rides in any number or combination, whether or not associated with other structures or forms of public attraction, and which is located at a temporary location.
- (f) "Commissioner" means the Safety Fire Commissioner or his/her designee.
- (g) "Engineer" means licensed mechanical engineer.
- (h) "Engineering evaluation" an evaluation completed by a licensed mechanical engineer of all structural components and all sub-systems of the ride. This shall include but not limited to electrical, mechanical, hydraulic, pneumatic systems, safety restraints, fencing, stairs, platforms and welding.
- (i) "Fair" means an enterprise principally devoted to the exhibition of the products of agriculture or industry and at or in connection with which amusement rides are provided.
- (j) "Guardian" means a person 16 years of age or over.
- (k) "Guardian Restrictions" means a condition placed on a ride where a child passenger must be accompanied on the ride by a guardian.
- (l) "National Electrical Code" means the NFPA, NEC 70 Code.
- (m) "Manager" means a person having possession, custody, or managerial control of an amusement ride

at a carnival or fair, whether as owner, lessee, agent, or otherwise.

- (n) "Pinching Hazard" means any configuration of components that would pinch or entrap the fingers or toes of a person.
- (o) "Puncture Hazard" means any surface or provision that would puncture a person's skin under casual contact.
- (p) "Ride Operator" means a person who controls or has the duty to control the operation of one or more rides causing such rides to go and stop or perform its entertaining function. The ride operator shall not operate more than one (1) ride at a time.
- (q) "Rated Capacity" means a capacity established by the design engineer for the normal loading and operation of a ride, or in the absence thereof, as established by the Commissioner, after inspection and determination.
- (r) "Ride".
  - 1. "Major Ride" means a device to carry a specific number of passengers, adults, or children, either by power or gravity, in cars or other suitable fixtures for conveying persons.
  - 2. "Kiddie Ride" means a device designed primarily for use by children but which may accommodate adults.
  - 3. "Miscellaneous Ride" means any other ride not specifically provided for, described, or defined in these rules.
- (s) "Rope", "Wire Rope", and "Cable" are interchangeable terms except where the term fiber rope is used.
- (t) "Safety Factor" or "Factor of Safety" means the ratio of the ultimate or breaking strength of a member or piece of material to the actual working stress or to the maximum permissible or safe load stress or when in use.
- (u) "Safety Devices."
  - 1. "Restraining Device" means a safety belt, harness, chain, bar, or other device which affords actual physical support, retention, or restraint to the passenger of a ride.
  - 2. "Containing Device" means a strap, belt, bar, gate, or other safety device designed to prevent accidental or inadvertent dislodgment of a passenger from a ride but which does not actually provide physical support.
  - 3. "Safety Retainer" means a secondary safety cable, bar, attachment, or other device from becoming disengaged from the mechanism or from tipping or tilting in a manner to cause hazards to persons riding on, or in the vicinity of, a ride.
  - 4. "Chains" should be referred to according to the material from which they are constructed; alloy steel chains, wrought iron chains, commonly known as hardware chains.
- (v) "Serious Personal Injury" means death, dismemberment, visible significant disfigurement, visible

significant or permanent loss of use of a body organ, member, function or system, compound fractures, visible uncontrolled bleeding, heart attack, stroke, or unconsciousness likely attributable to trauma to the head, as a result of the operation or malfunction of a carnival ride.

- (w) "Personal Injury" means sustained bodily harm resulting in medical treatment such as trauma, cuts, bruises, burns and sprains, but does not include Minor Injury/Illness or any mental disease or disorder not accompanied by physical injury at the time of the incident and further does not include false arrest, detention, imprisonment, confinement, slander, libel, violation of privacy or mental distress.
- (x) "Minor Injury/Illness" means physical or mental incidents such as fainting, bruising, or minor lacerations for which treatment is limited to rest, cleansing, dispensation of over-the-counter medication, plastic adhesive bandage strips, fluids by mouth, or similar assistance.
- (y) "Property Damage" means physical injury to, or destruction of tangible property to the structure or operational parts (including safety equipment and devices) of a carnival ride, sustained by reason of accident or malfunction, other than routine wear and tear, but does not include damage to personal property.

**Rule 120-3-28-.04 Owner/Operator Responsibility; Rider Responsibility; Warnings and Signage**

- (1) Every manager of a carnival ride shall comply with or effect compliance with all provisions of these rules and regulations, and every employer and employee shall comply with all provisions which concern or affect his conduct.
- (2) Each owner, manager, or lessee is responsible for filing one of the following with the Office of Insurance and Safety Fire Commissioner prior to any ride being placed into operation:
  - (a) A certificate of insurance against liability for injury to persons arising out of the operation of the carnival or fair ride in the amount of at least one million (\$1,000,000) dollars.
  - (b) A bond for and in the same amount as stated in (a) above.
  - (c) Cash or other security acceptable to the Department for and in the amount as stated in (a) above.
- (3) All ride patrons shall:
  - (a) Obey all posted signs, including but not limited to, warning signs, instruction signs, and directions signs, which are not inconsistent with these rules:
  - (b) Obey the instructions of ride attendants;
  - (c) Properly use all safety equipment provided;
  - (d) Act in a responsible manner while using a carnival ride, device or attraction;
  - (e) Refrain from acting in any manner that may cause or contribute to injury to self or others;
  - (f) Not participate or use a carnival ride, device or attraction while under the influence of alcohol

or any intoxicating substance; and

- (g) Be subject to any or all of the following penalties for violation of this Section A:
  - 1. Removal from the ride, device or attraction and barred from returning that day;
  - 2. Removal from the carnival owner's property and barred from returning that day;
  - 3. Subject to a civil penalty up to a maximum of \$100 per infraction to be assessed in accordance with the civil penalty provisions of these rules.
- (4) All ride patrons, or, if the patron is a minor, the patron's parent or guardian, shall report in writing to the carnival owner or his designee any injury sustained on a carnival ride prior to leaving the carnival owner's premises, unless the ride patron (or parent or guardian) is unable to file the report because of the severity of the injuries, in which case the report shall be filed as soon as reasonably possible.
- (5) Sign Requirements:
  - (a) Warnings and directions shall be based upon the standards of the American Society of Testing Materials (ASTM) or the American National Standards Institute (ANSI), or, if expressly approved by the Commissioner, other nationally recognized technical or scientific authority in the amusement ride or carnival ride industry.
  - (b) Signs shall be displayed in a public and conspicuous place on or near the ride, device or attraction in letters clearly visible from at least a distance of 15 feet.
  - (c) Rider responsibilities and potential penalties shall be posted in at least one public and conspicuous location on the premises of the carnival owner.

**Rule 120-3-28-.05 Application for Permit**

- (1) No carnival ride shall be operated at any time or location unless a permit is issued by the Office.
- (2) Each owner, manager, or lessee shall apply for a permit on or before January 1 of each year, on a form furnished by the Office. The following must accompany the application:
  - (a) Certificate of insurance, bond, or securities;
  - (b) List identifying each ride;
  - (c) Itinerary with intended dates and locations of use;
  - (d) An inspection fee of \$65.00 for each ride;
  - (e) An annual permit fee of \$50.00;
  - (f) The form of payment must be a certified check or money order made payable to the Office of Insurance and Fire Safety Commissioner.

- (3) In situations where an emergency booking makes the notification period impossible, the Office shall be notified by telephone at least 72 hours prior to set up and this notification shall be confirmed in writing.
- (4) In cases where an owner and/or manager finds it necessary to change his itinerary for any cause after having reported his itinerary to the Office, he shall notify the Office of the changes immediately.
- (5) In the event a special inspection is made, an additional fee of \$75.00 per hour and all traveling expenses incurred in connection with the inspection will be charged. The expenses shall be governed by the regulations for traveling expenses established for State Officials. In cases where one trip is made to inspect two or more locations for two or more parties, the traveling expenses shall be prorated between the parties on the basis of time and expenses incurred for each inspection. A special inspection is any non-routine inspection which includes but is not limited to:
  - (a) Failure to report a schedule change after scheduling an inspection.
  - (b) All violation follow-up inspections which require a special trip to verify compliance.
  - (c) Scheduling an inspection with less than 72 hours notice.
- (6) Carnival rides may be required to be inspected by an authorized person each time they are assembled or disassembled in accordance with regulations and standards established under this article.
- (7) All rides entering the state as of January 1, 2018 and intended to be utilized shall have an engineering evaluation completed within the last 12 months by a licensed mechanical engineer on the ride. All structural material and components of rides shall conform to recognized engineering practices, procedures, standards, and specifications. All ride components and their sub systems (electrical, mechanical, hydraulic, pneumatic systems) shall be part of this evaluation and shall meet ride manufactures requirements. The data shall include, but not limited to, the following materials, parts, or components of rides; structural materials including bars; cables; chains; ropes; rods; tubing; pipes; girders; braces; fittings; fasteners; trusses; pressure vessels; piping; gears; clutches; speed reducers; welds; bearings couplings; carriers such as tubs, cars, chairs, gondolas, or seating and carrying apparatus of any description; axles, hangers, pivots, safety bars, belts, harnesses, chains, gates; or other restraining, containing, or retaining devices. Any recommend repairs, or additional tests recommended by the engineer shall be completed prior to submission of this report. A report from the engineer shall be submitted to this office at the time of application of the permit or when any new or used ride is brought into the state and added to the itinerary.

#### **Rule 120-3-28-.06 Notice of Hearing and Penalties**

- (1) Issuance of Citation or Notice of Administrative Proceeding:
  - (a) If, upon inspection by an inspector or deputy inspector,
    1. A carnival ride is deemed to be in an unsafe condition,
    2. The owner, operator, user, contractor, or installer has not complied with the Carnival Ride Safety Law or these rules, or
    3. When a written warning has been issued and the violations continues, then the deputy

inspector shall issue the violator a Citation stating the date, time and place of the violation, the specific violation, the recommended penalty, and shall offer the respondent the opportunity for a hearing as set forth in this section.

- (b) If, upon receiving information from any source, the Chief Inspector determines that there is a reasonable belief that:
  - 1. A carnival ride may be in an unsafe condition,
  - 2. The owner, operator, user, contractor, or installer has not complied with the Carnival Ride Laws or these rules, or
  - 3. When a warning has been issued, the violation is a continuing violation, the Chief Inspector or the Director, Safety Engineering, on behalf of the Office, may issue Notice of Administrative Proceeding stating the date, time and place of the violation, the specific violation, the recommended penalty, and shall offer the respondent the opportunity for a hearing as set forth in this section.
- (c) The Director, Safety Engineering, upon review of a citation issued under subsection (a) above, may, in his sole discretion, dismiss the Citation and substitute therefore a Notice of Administrative Proceeding pursuant to subsection (b) above on the same, similar, or different violations, as required by the evidence.
- (d) The Commissioner, upon review of a Citation or Notice of Administrative Proceeding, in his sole discretion, may refer the matter to the appropriate prosecuting official for criminal or injunctive relief as permitted under law. In such event, the Commissioner may, in his sole discretion, elect to dismiss, suspend, or continue with the civil penalty proceeding.

(2) Hearing Procedure:

- (a) If a request for a hearing is not received from the respondent within the allotted time, the Director, Safety Engineering, on behalf of the Commissioner, may without further process impose a civil penalty not greater than the total of civil penalties set forth on the Citation or in the Notice of Administrative Proceeding. An administrative order under the authority of the Commissioner may be issued to collect the civil penalty assessed. If the civil penalty is not paid, the Commissioner may authorize the Director to file appropriate legal action in the name of the Commissioner through the Attorney General to collect the civil penalty.
- (b) Upon receipt of a request for a hearing pursuant to any Citation or Notice of Administrative Proceeding, the Director, Safety Engineering, shall determine, in his sole discretion, whether the hearing shall be held before the Commissioner of Insurance or referred to the Office of State Administrative Hearings. If the hearing is to be before the Commissioner, the Director shall set a date and time for the hearing and shall cause the case file to be referred to the Attorney General for legal representation of the Office Department. If the Director determines that a hearing before the Commissioner is not warranted, the matter shall be referred to the Office of State Administrative Hearings pursuant to O.C.G.A. 50-13-41(a)(1). The casefile for an OSAH proceeding may be referred to staff counsel within the Department or to the Attorney General for representation of the Department. The Office of State

Administrative Hearings will set the date, time and place of hearing as prescribed by OSAH Rules.

- (c) All hearings, whether before the Commissioner or before the Office of State Administrative Hearings, shall be subject to the powers and procedures set forth in the Administrative Procedure Act, including but not limited to O.C.G.A. 50-13-13 and 50-13-15.
  - (d) The decision of an administrative law judge made after a hearing before the Office of State Administrative Hearings shall be the initial agency decision as set forth in O.C.G.A. 50-13-41(d) and shall be subject to review by the Commissioner as set forth in O.C.G.A. 50-13-41(e). A hearing before the Commissioner shall be the final agency decision in the matter and shall be subject to judicial review as set forth in O.C.G.A. 50-13-19.
- (3) Guidelines for imposition of civil penalties:
- (a) Any person, firm partnership, corporation or other business entity, which violates this part, shall be subject to the imposition of civil penalties. Each day on which a violation occurs shall constitute a separate offense. Repeat offenders, including those who refuse to adhere to orders of inspectors, exceed the limitations of operating permits, or refuse to adhere to the requirements of these rules and regulations, may be referred appropriate prosecuting official for criminal (misdemeanor) or injunctive relief as permitted under law. Serious violations, including those causing serious bodily injury or death, or which exhibit gross negligence or serious disregard for public safety, may also be referred appropriate prosecuting official for criminal (misdemeanor) or injunctive relief as permitted under law.
  - (b) Notwithstanding the recommended minimum penalties set forth below, a serious violation, including those causing serious bodily injury or death, or which exhibit gross negligence or serious disregard for public safety, may receive the maximum penalty of \$5,000.00 for each violation including a first offense. The imposition of a penalty for a violation of this part shall not excuse the violation or permit it to continue.
  - (c) The deputy inspector issuing a Citation shall, at the time of issuance, specify a recommended civil penalty amount for each specific violation in accordance with these Rules and Regulations. The Director, Safety Engineering, is charged with the responsibility to ensure that recommended penalties for violations are graduated with the more serious violations receiving the heavier penalty and with assuring uniformity of recommended penalties such that offenders in similar circumstances with similar violations receive similar penalty recommendations. In this regard, the Director may dismiss a Citation and issue a Notice of Administrative Proceeding solely for the purpose of making an appropriate penalty recommendation.
  - (d) The recommended civil penalty set forth in the Citation or Notice of Administrative Proceeding shall be given great deference by the Hearing Officer. The *minimum* recommended penalties set forth below are normally for first offenses with only one violation being cited. The Hearing Officer shall, after hearing the case, consider factors in mitigation of the violations as well as those in aggravation. The Hearing Officer shall impose a penalty less than the recommended *minimum* penalty only upon finding unusually significant mitigating factors, and shall set forth those factors in the order. The Hearing Officer may impose a penalty substantially greater than the department's recommended penalty upon

finding significant aggravating factors associated with the violation, and shall set forth those factors in the order. The Hearing Officer shall consider the provisions of these Rules and Regulations guiding the assessment of penalties. In particular, the Hearing Officer, shall, in cases involving continued operation of equipment without valid operating certificates; continued operation of equipment after failing to notify the department of an accident involving structural damage, bodily injury, or death; or continued operation after an unsafe condition is detected or after the equipment is taken out of service by an inspector or deputy inspector, consider the imposition of separate penalties for each day of violation. The Hearing Officer shall not assess a penalty exceeding \$5,000.00 for each violation or each day of a continuing violation.

- (e) The Hearing Officer may, in addition to a civil penalty, recommend in the order that the Commissioner suspend for a period of time or indefinitely, operating certificates, permits to install, or certificates for contractors.

(4) Minimum recommended penalties:

(a) Specific violations:

1. Operating equipment without a certificate of inspection or permit. (Authority: O.C.G.A. 25-15-88 and 25-15-89)  
  
First offense .....\$250.00  
  
Second offense .....\$500.00
2. Operating equipment in an unsafe condition. (Authority: O.C.G.A. 25-15-96)  
  
First offense .....\$500.00  
  
Second offense .....\$1000.00
3. Failure to permit free access for the purpose of inspecting or investigating equipment.  
  
(Authority: O.C.G.A. 25-15-97)  
  
First offense .....\$500.00  
  
Second offense .....\$1,000.00
4. Failure to notify the Chief Inspector of any accidents involving serious personal injury.  
(Authority: O.C.G.A. 25-15-91 and 120-3-28-.14)  
  
First offense .....\$500.00  
  
Second offense .....\$1000.00
5. Failing to notify the Chief Inspector of an accident which involves death. (Authority:

O.C.G.A. 25-15-91)

First offense .....\$2500.00

Second offense .....\$4500.00

6. Placing ride back in service which has been "Re d-Tagged" or placed out of service by a deputy inspector, without first having the unit inspected. (Authority: O.C.G.A. 25-15-96(a))

First offense .....\$1000.00

Second offense .....\$2500.00

7. Placing ride back in service which has been involved in an accident prior to first having the unit inspected or otherwise cleared. (Authority: O.C.G.A. 25-15-91)

First offense .....\$1000.00

Second offense .....\$2500.00

(b) General violations:

1. Violating adopted Code, Standards, Rules, Regulations or Order. (Authority: O.C.G.A. 25-15-96(c)(2))

First offense .....\$250.00

Second offense .....\$500.00

2. Failure to post required signage such as, but not limited to, age, weight or height restrictions. Each day constitutes a separate violation. (Authority: O.C.G.A. 25-15-96(c)(2))

First offense .....\$250.00

Second offense .....\$500.00

3. Failure to file a required report. Each report constitutes a separate violation. (Authority: O.C.G.A. 25-15-96(c)(2))

First offense .....\$250.00

Second offense .....\$500.00

4. Any third repeated offense may subject the violator to the maximum civil penalty permitted under the Act (\$5,000.00).

### **Rule 120-3-28-.07 Identification and Rating Plates**

Every carnival ride shall be identified by a trade or descriptive name and an identification number, and there shall be firmly attached thereto in a readily visible location on a metal plate upon which there is legibly impressed the name and number of the ride, its model number if any, and the name and address of its manufacturer. Upon the same or another metal plate so attached, there shall be legibly impressed the maximum safe number of passengers and the maximum safe speed.

### **Rule 120-3-28-.08 Rebuilt and Modified Rides**

If a carnival ride which has withstood a performance test as required is thereafter materially rebuilt or so modified as to change its original action:

- (a) The ride shall be re-identified by a different name or identification number or both;
- (b) The ride shall be subject to all other provisions of this Chapter as if it were a new device not previously used.

### **Rule 120-3-28-.09 Control of Operation**

- (1) Carnival rides shall be operated only by competent operators at least 16 years of age.
- (2) Every operator shall have knowledge of the use and function of all normal operating controls, signal systems, and safety devices applicable to the ride and of the proper use, function, capacity, and speed of the particular ride which he is operating. An operator shall be in the immediate vicinity of the operating controls during operation and shall have complete control of the ride at all times while being operated for the public's use. When the ride is shut down, provisions shall be made to prevent operation by the public.
- (3) No person other than the trained operator shall be permitted to handle such controls during normal operation. This provision does not apply to carnival rides designed to be operated or controlled by a passenger.

### **Rule 120-3-28-.10 Overspeeding and Overloading**

A ride shall not be loaded beyond its rated capacity nor shall it be operated at an unsafe speed or at any speed other than that prescribed by the design engineer or manufacturer. When this information is not obtainable, the criteria for safe operating speeds and rated capacity shall be established by the Office.

### **Rule 120-3-28-.11 Medical and First Aid**

The owner and operator shall ensure the availability of medical and first aid.

- (a) While the venue is open or has patrons on the site, in the absence of an infirmary, clinic, or hospital available adjacent to the site or within one-half mile of the rides and attractions, one or more adequately trained and certified individuals shall be available on premises at all times with appropriate skills to render first aid and cardiopulmonary resuscitation. In addition, first aid supplies recommended and approved by the American Red Cross or by a consulting physician shall be readily

available.

- (b) At the site office or other appropriate place on the site, the telephone numbers for physician, hospital, ambulance and local fire and police services shall be conspicuously posted for use by the staff and public in the event of emergency.

**Rule 120-3-28-.12 Fatalities, Personal Injury, and Accidents**

- (1) Accidents involving fatalities or serious personal injury. In the event of an accident involving fatalities, serious personal injury, or personal injury requiring immediate overnight hospitalization, and of which the owner or operator has knowledge (Authority: O.C.G.A. Sec. 25-15-91):
  - (a) The ride or activity shall be shut down and immediately taken out of service;
  - (b) The ride or activity shall be secured to prevent operation until the Office has conducted a full investigation; and
  - (c) The accident shall be immediately reported to the Office by telephone, and shall be augmented by a detailed written report submitted by certified mail or similar means not later than the close of the next business day following the accident.
- (2) Accidents in which further safe operations may be compromised. In the event of an accident involving either personal injury or property damage in which there is a Discernible risk that further safe operation of the ride or activity may be compromised (Authority: O.C.G.A. Sec. 25-15-91):
  - (a) The ride or activity shall be shut down and immediately taken out of service;
  - (b) The ride or activity shall be secured to prevent operation until the Office has conducted a full investigation; and
  - (c) The accident shall be immediately reported to the Office by telephone, and shall be augmented by a detailed written report submitted by certified mail or similar means not later than the close of the next business day following the accident.
  - (d) If, at the time of the telephonic report, the owner or operator and qualified repair technician present sufficient information to the Office, the Office may, in its discretion, permit the ride or activity to be promptly repaired and put back into service without an investigation and inspection. The Office shall make a record of such decision and record it upon the written report submitted concerning the accident.
- (3) All other accidents or incidents. In order to evaluate the overall safety of regulated rides and activities, and to permit the identification of trends which may permit the effective prevention of accidents, all other accidents and incidents involving personal injury or property damage, but not including minor personal injury/illness, sustained by reason of the operation or malfunction of a ride or activity shall be reported as follows (Authority, O.C.G.A. Sec. 25-15-91):
  - (a) The accident or incident shall be reported in writing to the Office within 30 days of the accident or incident, or within 30 days after a belated report of personal injury becomes known by the owner or operator. In the alternative, such reports may be accumulated and submitted on a monthly basis.

- (b) The report shall summarize the accident or incident; shall note any equipment repair or adjustment accomplished; and shall include any witness statements taken.

#### **Rule 120-3-28-.13 Inspections**

All inspections will be conducted in accordance with the applicable sections as follows:

- (a) ASTM (American Society of Testing Materials);
- (b) Standard Building Code;
- (c) National Electrical Code;
- (d) The Rules and Regulations as adopted by the Board and approved by the Commissioner;
- (e) As a minimum upon the ride manufacturer's specification and recommendations.
- (f) The requirements for welding procedures and welder qualifications use, AWS D1.1, D1.2, D1.3, D1.6 and C3.4 (American Welding Society Standards for the welding of steel, aluminum, sheet metal and stainless steel and torch brazing.)

#### **Rule 120-3-28-.14 Mechanical Failure Reports**

The owner and/or manager of an amusement ride shall report any major breakdown to the Office within 24 hours after occurrence of the incident by telephone or other media of immediate communication. The owner and/or manager shall confirm this report in writing within seven (7) days after the occurrence of the reportable incident. Upon being advised of such an incident, the Commissioner or his authorized agent, after reviewing the circumstances, may order the ride or device to be withheld from operation, and in such cases the Office shall conduct an immediate investigation. The ride shall be released for repair and operation only after a thorough and complete investigation by the Office.

#### **Rule 120-3-28-.15 Removal of Parts**

In instances of ride failure no part of a ride shall be moved or disturbed prior to an investigation by the Office.

#### **Rule 120-3-28-.16 Load Tests**

- (1) When the inspector deems necessary, a load test may be required prior to use on the following rides:
  - (a) Rides having suspended passenger seats or spaces;
  - (b) Rides normally operated at speeds or with movements creating severe centrifugal forces;
  - (c) Rides so elevated that structural failure is likely to cause passengers to be injured by falling;
  - (d) Rides as to which the Office has ordered a test upon finding it necessary to assure safety.

- (2) Evidence of Test. Unless a load test is made in the presence of a representative of the Office, they may accept a certified copy of such test made by a person qualified to perform such test, showing whether the ride withstood the test without failures in any material respect and setting forth such other relevant information as the Office may require. Until such a statement is so filed, it shall be presumed that the ride has not withstood the test as required.
- (3) Nature of Test. Each passenger seat or space shall be weighed with at least 170 pounds dead weight, except that in rides intended only for small children of which each seat or space shall be weighed with at least 75 pounds. While so loaded the ride shall be so operated at maximum normal speed as to test the full operation of all control devices, speed limiting devices, brakes, and other equipment provided for safety.
- (4) Effect of Test. If the Ride fails to withstand load test, it shall be deemed unsafe and shall not be used until it has withstood a subsequent load test without failure in any material respect. If the ride has withstood a load test without failure in any material respect, it shall be required to be so tested again only if rebuilt or modified or if there are reasonable grounds to believe that a further test is necessary to assure safety and the Office orders such test to be made.

#### **Rule 120-3-28-.17 Design Criteria**

Structural material and construction of rides shall conform to recognized engineering practices, procedures, standards, and specifications. The design, materials, and construction features shall incorporate safety factors acceptable to the Office. If a designer or manufacturer of equipment wishes to use materials not now covered by these rules or by reference to existing standards, full information concerning these materials or methods shall be submitted to the Office. The design, detail, materials, and construction features shall provide safety factors acceptable to the Office.

- (a) Manufacturers' analyses. Before a new carnival ride is put into operation for the public's use, or whenever any additions or alterations are made which change the structure, mechanism, classification, or capacity of any ride or device, the owner shall file with the Office a notice of his intention and shall furnish design data, safety factors, materials utilized, stress analysis is, and other pertinent data deemed necessary by the Office. This information shall also be furnished by the manager for existing rides if required by the Office. Such stress analysis and other data pertinent to the design, structure, factors of safety, or performance characteristics shall be in accordance with accepted engineering practices acceptable to the Office and written in English. Such data may be requested for, but not limited to, the following materials, parts, or components of rides; structural materials including bars; cables; chains; ropes; rods; tubing; pipes; girders; braces; fittings; fasteners; trusses; pressure vessels; piping; gears; clutches; speed reducers; welds; bearings couplings; carriers such as tubs, cars, chairs, gondolas, or seating and carrying apparatus of any description; axles, hangers, pivots, safety bars, belts, harnesses, chains, gates; or other restraining, containing, or retaining devices. Data shall be furnished at the request of the Office on forces generated by acceleration, or deceleration centrifugal action, inertia, kinetic or other forces constant, reversible, or eccentric.
- (b) Rating. Manufacturers shall identify the capacity of a carnival ride in terms of number of passengers and operating speed. This information shall be included on the identification and rating plates.
- (c) Seating and Carrying Devices.

1. Tubs, cars, chairs, seats, gondolas, and other carriers used on rides shall be designed and constructed as strong as practicable. The interior and exterior parts with which passengers may come in contact with shall be smooth, rounded, free from sharp, rough or splintered edges or corners, and with no protruding screws or projections which might cause injury. Parts upon or against which passengers might be thrown by action of the ride shall be adequately padded to prevent or minimize the possibility of injury. The upholstery or decoration shall be permitted.
  2. Propellers or other moving parts or decorations attached to tubs, cars, chairs, seats, gondolas, and other carriers shall be securely fastened to such equipment and keyed or otherwise secured so that they cannot come off during operation of the ride. Vanes, canopies, or other attachments which might become disengaged shall be secured with safety straps to prevent their flying away in case of breakage or dislocation.
- (d) Speed Limiting. A carnival ride capable of exceeding its maximum safe operating speed shall be provided with a maximum speed-limiting device.
- (e) Brakes and Stops.
1. On a ride where coasting renders the operation dangerous, either during the period while the ride is being loaded or unloaded or in case of power failure or other unforeseeable situation, a method of breaking shall be provided.
  2. If cars or other components of an amusement ride may collide in such a way as to cause personal injuries upon failure of normal controls, emergency brakes sufficient to prevent such collisions shall be provided.
  3. On rides which make use of inclined tracks; automatic anti-rollback devices shall be installed to prevent backward movement of the passenger carrying units in case of failure of the propelling mechanism.
- (f) Retaining, Restraining, and Containing Safety Devices.
1. Safety Retainer. Tubs, cars, chairs, seats, gondolas, or other carriers on a ride that depends upon a single means of attachment or support shall be equipped with safety retainers to prevent a carrier from being catapulted from the ride and to prevent any action of the carrier which might throw the occupants from the carrier if it becomes disengaged from its support or attachment.
  2. Restraining Safety Devices. Restraining devices used on tubs, cars, chairs, seats, gondolas, or other carriers on a ride, wherein the forces generated by the action of the ride require retention, restraint or actual physical support of the passenger, shall be designed, constructed, and installed to withstand impact and forces of a minimum of 850 pounds per passenger.
  3. Containing Safety Devices. On a ride design where, after inspection by the Office, it is deemed necessary to install safety devices to prevent accidental or inadvertent dislodgement of a passenger from any tub, car, chair, seat, gondola, or other carrier, a containing device shall be installed. This device shall be designed to withstand minimum forces of 850 pounds for the exclusive use of children, or the design load, whichever sets the greater minimum force.

4. Recommended passenger restrictions and limitations, where applicable, such as but not limited to, height, weight, age, passenger placement, or other appropriate restrictions shall be provided to the end user by the Manufacturer or seller of the amusement ride or device. In the event the manufacturer is unwilling or unable to provide said restrictions, thereby rendering himself in non-compliance with this law and ASTM Standards, the said restrictions and/or limitation must be established by the owner and/or manager and shall be acceptable to the Office.
- (g) Motors, Motor Circuits, and Controllers shall be manufactured and utilized in accordance with Article 430, National Electric Code. Any motor operating with greater than 50 volts shall have its frame grounded with a conductor.
  - (h) Safety Stop Circuits. Electrical safety stop circuits shall be closed circuits so in case of power failure, the system will cause the ride to which the circuit pertains to fail safe. Circuits shall be all metallic.
  - (i) Stairways, Landings and Ramps.
    1. Adequate stairways or ramps and the necessary landings and platforms shall be provided where people enter or leave a ride that is above or below grade or floor level at entrance to or exit from such ride. The design and construction of stairways, ramps, and railings shall conform to OSHA Standards for Walking-Working surfaces, except the requirement regarding the placement of stairway railings and guards. All stairs with more than one step shall have standard handrails or railings on both sides regardless of width, and when stairways are 88 inches or greater in width, a railing shall be placed approximately in the center. The construction of the standard railings and handrails shall be in accordance with the OSHA Rules and Regulations.
    2. Design of Stairways, Landings and Ramps. Stairways, landings, and ramps shall be designed, constructed, and maintained so as to sustain safely a live load of at least 90 pounds per square foot.
    3. Stairways, Ramps, and Platforms. Stairways and ramps shall be at least 21 inches wide. Stair treads shall be at least 9 inches deep exclusive of nosing and the height of rise shall not exceed 8 inches. Between any two levels the treads shall be of uniform depth and the risers of uniform height.
  - (j) Signal Systems shall be provided and utilized for controlling, starting, and stopping of a ride when the operator of the ride does not have a clear view of the point where passengers are loaded or unloaded. Where the need for coded signals is required, the code of signals adopted for operations of the ride shall be printed and kept posted at both the operator's and signalman's stations. Persons who use the signals shall be instructed in their use and shall be trained to understand thoroughly their operation and meaning. Signal systems shall be tested on each day prior to operation of the ride. A ride requiring a signal system shall not operate if the system is not performing correctly. Signals for the movement of operation of an amusement ride shall not be given until all passengers and other persons who may be endangered are in a position of safety.
  - (k) General Environment.
    1. Hazardous Weather and Riot. During a lightning storm, high wind storm, a period of tornado warning; fire, or when violence, riot, or civil disturbance occurs or threatens in or is a direct

threat to a fair or carnival lot, passengers shall be unloaded or evacuated from a ride and the ride shut down and secured immediately. Operations shall not resume until the situation has returned to a normal safe operating condition.

2. Illumination. Access and exit to and from amusement rides shall be provided with illumination by natural or artificial means of no less than 5 foot candles measured at grade level. No less than 10 foot candles of illumination shall be provided at work levels for assembly and disassembly of amusement rides.
3. A separate or emergency source of illumination shall be provided, excluding flashlights, in all portable trailers used as fun houses, dark rides, etc.

(l) Fire Prevention and Protection.

1. Fire Resistance of Fabrics. Fabrics constituting part of an amusement ride shall be fire-resistant to meet the following standards: Two strips or test sections either of the fabric used or other fabric identical therewith shall be tested. Each strip shall not be less than 6 inches wide and 12 inches long. Each strip shall be thoroughly dry and shall then be subjected to an open flame applied to the lower edge while the strip is held vertically for twelve seconds. Neither strip shall flame for more than two seconds after the test flame is removed from contact nor shall the average length of char exceed 2 1/2 inches. Such a test is not required by this section if other evidence of the required degree of fire resistance is accepted by the Office as sufficient.
2. Fire Extinguishers. Approved fire extinguishers shall be provided at or within fifty (50) feet of the operator station to secure reasonable and adequate protection from fire hazards.
3. Flammable Waste. Flammable waste such as oily rags and other flammable materials shall be placed in a covered metal container which shall be kept in easily accessible location.
4. Flammable Liquids and Gases. Gasoline and other volatile liquids and flammable gases when stored shall be kept in reasonably cool and ventilated places. Such liquids shall be in approved safety cans. Smoking and the carrying of lighted cigars, cigarettes, or pipes is prohibited in any area where such liquids or gases are stored or are transferred from one container to another.

(m) Cleanliness. A suitable number of metal containers for refuse shall be provided in and around all amusement rides. Excessive accumulations of trash or rubbish shall be promptly removed. All parts of amusement rides used by passengers or customers shall be maintained in a clean condition.

(n) Equipment. Equipment used in connection with any ride shall be constructed, equipped and maintained to insure safe operation.

(o) Oil and Hydraulic Systems. Oil and hydraulic systems and other related equipment used in connection with amusement rides shall be free of leaks and maintained to insure safe operation at all times. Such systems shall have a dumping or bypass valve that shall be drilled and sealed at 125% of working pressure by the manufacturer and witnessed by a representative of the Office. Such systems shall be inspected at least annually and must be inspected before being put into service. All pressure gauges shall have the maximum safe working pressures conspicuously marked thereon. All systems shall have a manual lowering valve.

- (p) Pressure Vessels. Pressure Vessels used in conjunction with rides that meet the following criteria must be constructed in accordance with the ASME Code, repaired in accordance with the National Board Inspection Code, and safety inspected by a state inspector once each year.
- (q) Machinery and Machine Guarding.
1. General Requirements are as follows: machinery used in or with an amusement ride shall be enclosed, barricaded, or otherwise effectively guarded against contact. Guards removed for maintenance purposes shall be replaced before normal operation is resumed. One or more methods of machine guarding shall be provided to protect the public from injury. An example of double guarding is public barriers and gear shielding. Guards shall be fixed to the machine where possible and secured elsewhere if for any reason attachment to the machine is not possible. The guard or barrier shall be such that it does not offer an accident hazard in itself. Barriers shall be securely stacked or sandbagged to prevent movement or tip over by the public falling, pressing, or stumbling against them, and be at least 30 inches high. The barriers shall be located to keep the public at least six feet away from all major or spectacular rides, and at least three feet away from all kiddie rides. Ride entrances shall have a passenger waiting line retaining chain, bar gate, or device. All machinery designed for a fixed location shall be securely anchored to prevent walking or moving. All rides containing or having a mounting or mountings that would catch, wind up, or entangle long hair shall have attached warning signs.
  2. Mechanical Power Transmission. All power transmission devices and associated moving parts shall be shielded, enclosed, or barricaded to protect the public.
- (r) Welding, Cutting, and Brazing. No welding, cutting, or brazing shall be accomplished where the public can directly observe the process or be hit by sparks or flying materials generated by the process. Any welding, cutting, and brazing accomplished when the general public is in attendance, shall be accomplished behind temporary erected solid barriers. The ends of these shall be overlapped to prevent any direct exposure. If the operation cannot be shielded, the manager shall provide a means of keeping the public away from the point of work for a distance of 35 feet for all soldering, brazing, cutting, and gas welding up to 1/2 inch, 50 feet for all gas welding over 1/2 inch, and 150 feet for all welding utilizing electrodes up to 3/16 inch diameter. All larger arc welding operations shall be accomplished behind solid shielding or prior to or after public attendance hours.

### **Rule 120-3-28-.18 Operations**

- (1) Assembly and Disassembly.
- (a) Competent Supervision. The assembly and disassembly of an amusement device or a temporary structure shall be done by or under the immediate supervision of a person experienced and instructed in the proper performance of such work in respect to the device or structure.
  - (b) Quality of Assembly Work. Assembly work shall be performed in a proper and workmanlike manner. Parts shall be properly aligned and shall not be bent, distorted, cut or otherwise injured to force a fit. Parts requiring lubrication shall be lubricated in the course of assembly. Fastening and locking devices, such as bolts, cap screws, cotter pins, lock washers, etc., shall be installed where required for dependable operation. Nuts shall be drawn tight, cotter pins shall be spread, and lock nuts firmly set. Welding of parts upon which safe operation depends

will be in accordance to AWS Standards welding & brazing procedures done by welders qualified to those procedures, procedures shall be provide by the manufacturer.

- (c) Quality and Inspection of Parts. Parts which are excessively worn or which have been materially damaged shall not be used. Close visual inspection of parts shall be made during assembly to discover such wear or damage and immediate inspection of fastening devices shall be made after assembly to discover such wear or damage and immediate inspection of fastening devices shall be made after assembly to assure that they have been properly installed.
  - (d) Tools and Equipment.
    - 1. Persons engaged in the assembly or disassembly of amusement devices shall be provided with and shall use tools of proper size and design to enable the work to be done safely. Broken, damaged, and unsuitable tools shall not be used. Electrically operated tools shall be grounded during use.
    - 2. Ladders, scaffolds, and safety belts used in assembly or disassembly work shall be of such design, material, and construction as to provide reasonable and adequate protection to the persons using them.
    - 3. Fiber rope used in assembly or disassembly work shall be standard quality manila or equivalent in strength.
    - 4. Tackle blocks shall be of a size to fit the rope. All load-carrying equipment shall be designed and constructed throughout to support the intended load.
  - (e) Persons in Work Area. A sufficient number of persons to do the work properly shall be engaged for the assembly or disassembly of amusement devices. Persons not so engaged in this work and who may create a hazard shall be prevented from entering the work area.
- (2) Location. The general layouts shall be established such that continuous traffic patterns will exist. Box canyons formed by rides and concession booths shall be avoided. The egress of a ride or booth shall not be located immediately in front of hazardous equipment. The layouts shall be such that traffic patterns through the concession areas shall minimize traffic over any water or electrical lines. The intermingling of water lines and electrical lines shall be avoided. Long guy wires or narrow braces utilized for ride, or booth support shall be clearly marked with streamers or other devices to attract attention.
- (a) Temporary Ride. A ride shall be placed on solid footings to be secured to prevent shifting, tipping, swaying, or erratic motion. No cement, brick, or similar type blocks shall be permitted, unless approved by the Office. Provisions pertinent to erratic motion or sway does not apply to a ride designed to permit flotation characteristics or flexibility. Use of shim blocks shall be kept to a minimum. Depression in the ground near the ride footings shall be filled and tamped and adequate means of drainage provided to prevent water from collecting and softening supporting areas in case of rain. The areas surrounding the ride shall be clear and kept free from trash and tripping hazards. A daily inspection of the ride motion and footing shall be made.

(b) Public Protection.

1. An carnival ride shall not be used or operated while any person is so located as to be endangered by it. Areas in which persons may be so endangered should be fenced, barricaded, or otherwise guarded against public intrusion.
  2. Temporary booths shall not be located under aerial amusement rides. Temporary booths utilized for cooking food shall be located such that at least 10 feet of clearance exists on two sides for the use of fire equipment or other emergency vehicles, and shall not be located within 10 feet of amusement rides. A minimum clearance of six feet shall exist between an exterior ride and walls, building, and other structures. At least twelve feet of clearance shall be maintained between major and spectacular rides and at least three feet between all kiddie rides.
  3. At no time shall a ride be assembled, disassembled, or operated within the minimum clearance of power transmission lines as stated below, except when the transmission lines have been de-energized and disconnected or locked out.
    - (i) For lines rated 50KV or below, minimum clearance between the lines and any part of lifting crane, ride structure, or equipment shall be ten feet.
    - (ii) For lines rated over 50KV, minimum clearance between the lines and the lifting crane, ride structure, or equipment shall be ten feet plus 0.4 inches for each 1KV over 50KV.
    - (iii) During assembly or disassembly a person shall be designated to observe clearance of the equipment and give timely warning for all maneuvers where it is difficult to maintain the desired clearance by visual means.
- (3) The manager shall insure that there exists in the immediate vicinity a device or devices (for example; ladder, fire truck, or hydraulic lift) which are available for emergency removal of passengers from elevated amusement rides that will not operate.
- (4) Leveling and Alignment. Corner posts, central column or support structures of a ride designed to operate on a perpendicular axis shall be plumb and secured so that the path of the sweeps or platforms shall be level and operate on a true horizontal plane at right angles to the axis of the pivot. A ride whose carriers are designed to operate on a horizontal axis shall be leveled so that the carriers will orbit in a true perpendicular plane. The base of a ride employing a combination of orbiting planes or a ride whose carriers operate normally in a plane other than true horizontal or vertical shall be leveled, plumbed, and secured so that they will not tip or shift and will be stable under the most adverse operating conditions, except for a ride designed to operate properly whether the base is plumb or level or not.
- (5) Internal Combustion Power Sources.
- (a) Internal combustion power sources shall be of adequate type, design, and capacity to handle the design load.
  - (b) Fuel tanks should be of adequate capacity to permit uninterrupted operation during normal

operating hours and have caps that will not leak fuel if over turned. Where it is impossible to provide tanks of proper capacity for a complete day, the ride shall be shut down and unloaded or evacuated during the refueling procedure. Under no circumstance shall the fuel supply be replenished while the engines are running.

- (c) An enclosed area in which an internal combustion engine is operated shall be ventilated. Exhaust fumes from the engine shall be discharged outside the area. The equipment shall be properly grounded.
- (d) Internal combustion power sources shall be located in a manner permitting proper maintenance and shall be protected either by guards, fencing, or enclosure to prevent exposure to hazard and to secure the equipment from the public.
- (e) A manager shall provide and maintain portable fire extinguishers of the classification, capacity, and number prescribed by the Office.
- (f) A manager shall store and handle liquid petroleum gas employed either as fuel for internal combustion engines, for heat, or for illumination in a manner approved by the Office.
- (g) A manager shall store and handle flammable liquids in accordance with the standards of the Office. Bulk storage (quantities above 60 gallons) will not be permitted in the area accessible to the public.

#### **Rule 120-3-28-.19 Maintenance**

- (1) General. All equipment relative to carnival rides shall be given periodic maintenance service. This shall include proper lubrication and cleaning of machinery, engines, and motors. Worn mechanical parts and machinery shall be periodically inspected for loose fasteners. Lockout devices shall be engaged prior to inspecting or servicing a piece of equipment. Equipment and structure for amusement rides shall be kept free from protruding nails, loose nails, splintered wood, loose and wobbly seats, and rough, loose, or dangerous arm rests.
- (2) Wire rope:
  - (a) shall be thoroughly examined. Wire rope found to be damaged shall be condemned and replaced with new rope of proper design and capacity as per data tag that is attached. Any of the following conditions shall be cause for rope replacement.
    - 1. In running ropes, six randomly distributed broken wires in one rope lay, or three broken wires in one strand in one rope lay. A rope lay is the length along the rope in which one strand makes a complete revolution around the rope.
    - 2. In pendants or standing ropes, (ropes bearing the entire load and subjected to constant pressure and surge shocks) evidence of more than one broken wire in one rope lay.
    - 3. Abrasion, scrubbing, or peeling causing loss of more than 1/3 of the original diameter of the outside wires.
    - 4. Severe corrosion.

5. Severe kinking, severe crushing, or other damage resulting in distortion of the rope structure.
  6. Heat damage resulting from a torch or arc caused by contact with electrical wires.
  7. Reduction from normal diameter of more than 3/64 inch for diameters up to and including 3/4 inch; 1/16 inch for diameters 7/8 inch to 1 1/8 inches; 3/32 inch for diameters 1 1/4 inches to 1 1/2 inches. Marked reduction in diameter indicating deterioration of the core resulting in lack of proper support for the load carrying strands. Excessive rope stretch or elongation may be an indication of internal deterioration.
  8. Bird-caging or other distortion resulting in some members of the rope structure carrying more load than others.
  9. Noticeable rusting or developing of broken wires in the vicinity of attachments. If this condition is localized in an operating rope, the section in question can be eliminated by making a new attachment. This may be done rather than replacing the entire rope.
  10. All wire rope used to support, suspend, bear, or control forces and weight shall be double clamped.
- (b) Wire ropes used to support, suspend, bear, or control forces and weights involved in the movement and utilization of tubs, cars, chairs, seats, gondolas, other carriers, the sweeps, or other supporting members of a ride shall not be lengthened or repaired by splicing.
- (c) Couplings, sockets, and fittings shall be a design and type approved by the Office and installed in accordance with the instructions or specifications of the designer, engineer, or manufacturer.
- (3) Wood Components. Footings, splices, uprights, track timbers, ledgers, sills, laps, bracing flooring, and all other wood components of rides shall be inspected for deterioration, cracks, or fractures. Emphasis shall be given to insuring tight nails, bolts, lag bolts, and other fasteners. Wood members found to be defective shall be removed and replaced with material of equal or greater strength and capacity.
  - (4) Housekeeping. An adequate number of containers for refuse shall be provided in and around all amusement rides. Excessive accumulation of trash and refuse shall be promptly removed. All parts of amusement rides used by the public shall be maintained in a clean condition. All walkways between amusement rides shall be kept free from debris, obstructions, or other hazards.
  - (5) Electric Motors. Electric motors exposed to water shall be given a dielectric test annually to insure a safe operation and the results are to be kept with the carnival.
  - (6) Wire Rope Rollers, Drums, and Sheaves. The mechanical devices that brake, control, or come in contact with wire rope, such as rollers, drums, and sheaves shall be examined on a periodic basis to insure cleanliness and safe conditions. Mechanical devices with broken chips, undue roughness, or uneven wear shall be replaced immediately.

- (7) Articulation and Bearings.
- (a) The articulating pinions, frames, sweeps, eccentrics, and other mechanical members shall be inspected for wear, out or around, cracks, and other signs of deteriorations, and shall be kept in good repair.
  - (b) All main center spindles not visible to the naked eye shall be X-rayed or other approved means, by an accredited testing laboratory and one copy of the results of such tests shall be forwarded to the Office. Test results shall have listed the date of the test, name of the ride owner, and serial number for identification of the ride.
  - (c) Bear surfaces, ball joints, and other single or multiple direction mechanical surfaces shall be kept well lubricated and clean and inspected for out of round or out of spherical and shall be kept in good repair.
  - (d) Gear alignment and gear drives shall be kept in good repair.
- (8) Electrical Wiring. Motor wiring, general service circuitry, decorative wiring, festoon wiring, and concession stand wiring shall be inspected for insulation wear, fraying, or other signs of deterioration such as cracking. Secure tape repairs may be used; however, use of tape repairs shall be kept to a minimum. Wire clips on articulating devices shall be kept in good repair, and wires at elbows and at the end of articulating devices shall be emphasized during inspection.
- (9) Safety Devices. Retaining, restraining and containing devices shall be inspected to insure they can continuously fulfill their function. Worn and damaged areas shall be repaired immediately or shall be cause for immediate replacement.
- (10) Hydraulic Systems. The system is to be checked for leaks, damaged pipes, and worn or deteriorated hoses.
- (11) All welding will be in accordance to AWS Standards welding & brazing procedures done by welders qualified to those procedures. The procedures shall be provided by the manufacturer.

**Rule 120-3-28-.20 Electrical**

Electrical conductors and electrical equipment installed and utilized on or around carnival rides shall conform to the latest adopted edition of National Electrical Code, NFPA 70. The following rules are stated for emphasis and clarification and are supplement to the National Code. If any conflict exists or appears to exist, the National Code shall have precedence.

- (a) Installation. Portable electrical systems required by amusement rides shall be installed by a qualified electrician.
- (b) Grounding. A carnival shall not operate until all grounding electrodes, equipment, and safety grounding connections are secured, polarized, and tested. The grounding conductors shall conform to the National Electrical Code, as revised. Article 250 Grounding, Paragraph 250-94 Alternating Current Systems and 250-95 Size of Equipment Grounding Conductors. The path to ground from circuits, equipment and conductor enclosures shall (1) be permanent and continuous and (2) shall have ample carrying capacity to conduct currents liable to be imposed on it, and (3) shall have impedance sufficiently low to limit the potential ground and to facilitate the operation of the over-

current devices in the circuit.

1. Service Ground. Equipment or generators operating from a separate supply or supplies which are located closer than 8 feet and all service equipment within itself shall be bonded together. The service ground shall be established by connecting the grounding conductor to the service entrance neutral bar in the hot truck or generator and to an approved type service grounding electrode such as ground rods. A sufficient number of ground rods shall be spaced not less than 6 feet apart and at secure depth to obtain and maintain 25 ohms or less resistance to ground. A resistance of 3 ohms or less shall exist when grounding to a water system.
  2. Generator Grounding. Where electrical power is supplied for an amusement ride by a privately operated generating system, the generator and all equipment shall be properly grounded if the system incorporated a ground.
  3. Circuit and Equipment Safety. From the service entrance neutral bar, the circuit grounded and equipment safety grounding conductors shall be continuous and separate throughout the entire system. The portable outlet and terminal boxes shall contain a service ground through grounded receptacles for both circuit and safety. The equipment safety grounding conductors shall be attached to each ride such that a grounding resistance of 25 ohms or less is obtained. Separate steel tracks or steel framework, such as relief coaster tracks or big slides, shall have grounding the same as the service equipment.
- (c) Current Limiting Devices. Conductors shall be fused or protected to their current carrying capacities. No more than 6 disconnect switches are to be in the hot truck or generator unless a main switch is provided. All distribution lines from hot trucks or generators shall be either 100 amp. capacity. No fuses or current limiting devices shall be installed in the neutral or grounding conductors. Motors and lighting circuits shall be fused separately.
- (d) High Voltage Lines. The outlets of electric power lines carrying more than 120 volts shall be clearly marked to show their voltages.
- (e) Outdoor Apparatus and Wiring. Electrical apparatus and wiring located outdoors shall be of such quality and so constructed or protected that exposure to weather will not interfere with its normal operation.
- (f) Elevated Lines. Elevated power lines crossing access or other roads within the grounds of a carnival or fair shall be suspended as to provide minimum vertical clearance of 12 feet from the road surface and minimum horizontal clearance of 3 feet on each side of the normal passage space of vehicles.
- (g) Bus Bars. Bus bars shall be located low or near the bottom of the cabinet. Separate bus bars shall be provided for grounding neutral and phase conductors. Color codes painted on inside and outside of box, but not on contact surfaces of bus bars, are to be:

Ground-Green With Yellow Strip 1st Phase-Black

Neutral-White or Natural Gray 2nd Phase-Red

3rd Phase-Blue

On a 4 wire delta connected secondary, the phase conductor having the higher voltage to ground shall be

arranged. These color codes are to carry on through all connected wiring from service through portable power outlets and terminal boxes. Buses shall not be less than 200 ampere capacity. The load terminals in a switchboard or panel board shall be located so that it will be unnecessary to reach across or beyond a live bus (hot bus) to make a local connection.

- (h) Portable Power Outlet and Terminal Box. Boxes are to be rain tight and kept locked during the time when the general public is in the area. Wood boxes may be used if insulated on all sides with fire resistant material or painted with insulating varnish. The service power shall be connected to the box by receptacles mounted on the exterior wall which includes the safety grounding. The distribution within the box shall be accomplished by neutral terminal bar(s) and circuit breakers or fuses. The branch circuits which include the equipment safety grounding shall obtain their power through receptacles mounted on the exterior of the box. The exterior openings of the receptacles must be at least 6 inches above ground level and provided with a protective cover, draining eave, or canvas that will avoid the possibility of rain on the receptacle. If it is required to run conductors directly through an opening on the wall of the box for additional service or to obtain required amperage, the opening(s) shall be color coded and shall be sized to prevent public accessibility to the interior of the box. The fuses or breakers in the boxes shall be secured permanently in place, and all connections to the bus bars within the boxes shall be made with threaded screws and lugs of the proper size to fasten in place.
- (i) Power Sources. Electrical power sources shall be located in a manner permitting proper maintenance and shall be protected either by guards, fencing, or enclosure to prevent exposure to hazard and to secure the equipment from the public.

#### **Rule 120-3-28-.21 Daily Inspection**

The carnival rides shall be inspected each day they are intended to be used. This inspection shall be made by a person experienced and instructed in the proper assembly and operation of the device and shall be performed before the device is put into normal operation. The inspection and test shall include the operation of control devices, speed limiting devices, brakes, and other equipment provided for safety. A record of each inspection and test shall be made at once upon completion of the test and shall be kept with the device and available to the Office. An operator or manager shall not knowingly use, or permit to be used, a ride which is not properly assembled or which is defective or unsafe in any of its parts, controls, or safety equipment.

#### **Rule 120-3-28-.22 Special Situations**

- (1) This Code is to provide for the safety of life and limb and to promote the public welfare. Where a rule because of practical difficulty cannot be complied with literally or where its literal application would cause undue hardship, the Office may upon written request, grant exceptions, but only when it is clearly evident that reasonable safety is assured.
- (2) In the event that an unsafe condition is discovered during the course of a safety inspection on a carnival device and the manufacturer of that device is no longer in business and cannot be contacted for specific repairs, the Office shall determine the necessary requirements needed in order to return the carnival device to safe operating conditions.
- (3) Exemptions from Standards and Regulations approved by the Office. The owner/operator of the following equipment shall be exempt from applying for a permit or inspection. The owner/operator shall meet all other requirements of the Safety Act and these Rules.
  - (a) Mechanical bulls, climbing walls, human powered equipment or attractions, including but not limited to space balls, orbitrons, air supported structures, paddle boats, water cycles, bicycles.