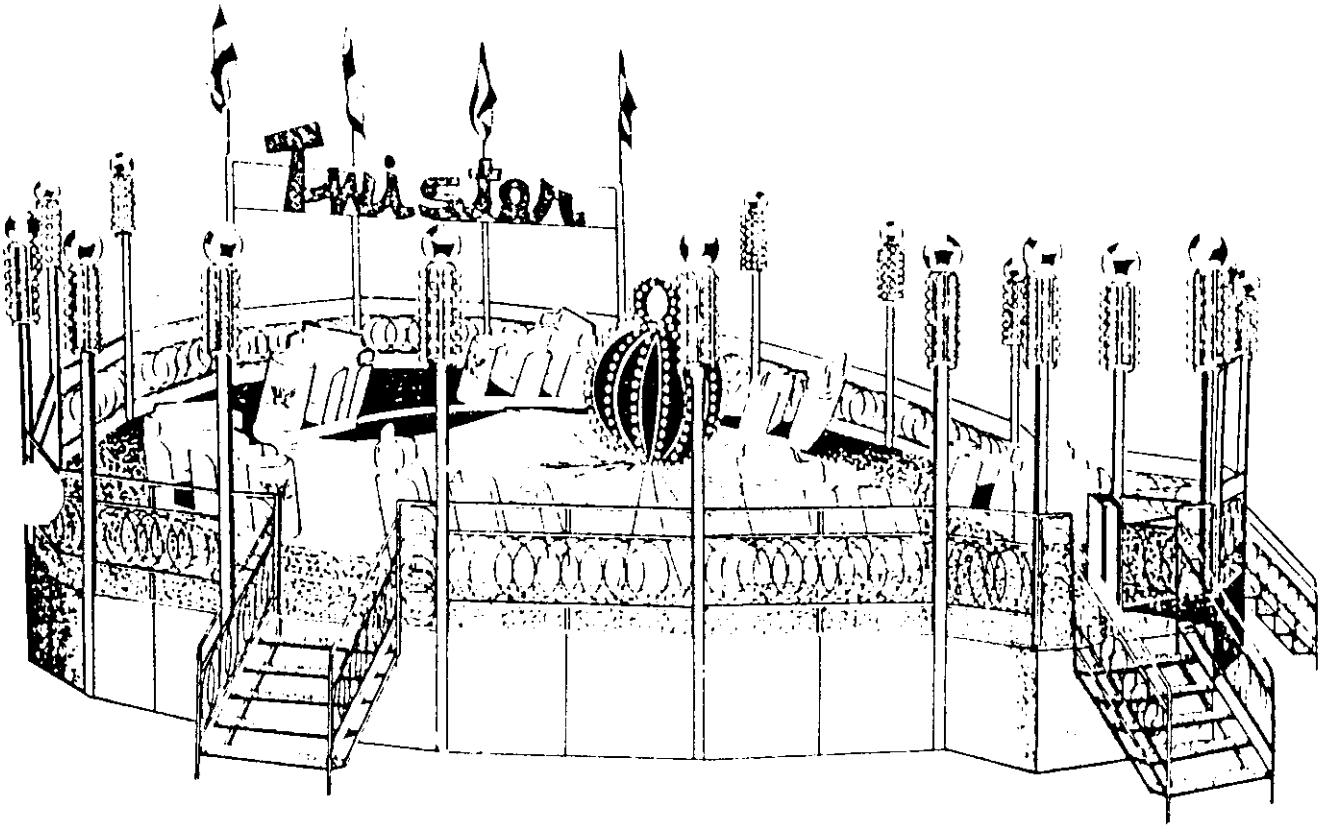
TWISTER

Ride Serial Number _____ Owner _____ Date _____

FIELD INSPECTION POINTS

1. ( ) Inspect blocking and leveling.
2. ( ) Inspect lock nuts on leveling jacks.
3. ( ) Inspect hydraulic valves for leveling jacks.
4. ( ) Inspect cable leads, electrical connections and grounding per local code.
5. ( ) Inspect fences and steps for proper installation and leveling. Check all jack stands.
6. ( ) Inspect floor hinges for cracks.
7. ( ) Inspect floor and track with ride running.
8. ( ) Inspect seats for cracks.
9. ( ) Inspect head rest in each seat (Bulletin 138).
10. ( ) Inspect the seats for restraining belts. 2 belts are required on the front seat, 3 belts on the rear seat (Bulletin 63).
11. ( ) Inspect to see that all track clamps are locked.
12. ( ) Inspect drive chain adjustment.
13. ( ) Inspect wheel on end of sweep for wear.
14. ( ) Inspect seat spindles for cracks and bearing adjustment.
15. ( ) Inspect pin and hairpin through seat and spindle.
16 ( ) Inspect brake operation on each seat.
17. ( ) Inspect bolts in center hub area (Bulletins 104 and 104A).
18. ( ) Inspect the joint between inner and outer sweeps (Bulletin 91).
19. ( ) Inspect sweeps for cracks.
20. ( ) Inspect sweep bearing housings for cracks and check bearings for looseness.
21. ( ) Inspect control lever and detent (Bulletin 89).
22. ( ) Check for smooth acceleration. Braking pressure must be 700 psi (Bulletin 90).
23. ( ) Check speed of ride - 9 rpm maximum (Bulletin 117).
24. ( ) Check ride for excessive vibration.
25. ( ) Inspect the structure for cracks, bad welds, etc.
26. ( ) Inspect electrical wiring for short circuits, bad wires, etc.
27. ( ) Inspect for hydraulic leaks.
28. ( ) Inspect overall appearance of ride for cleanliness and general overall upkeep.

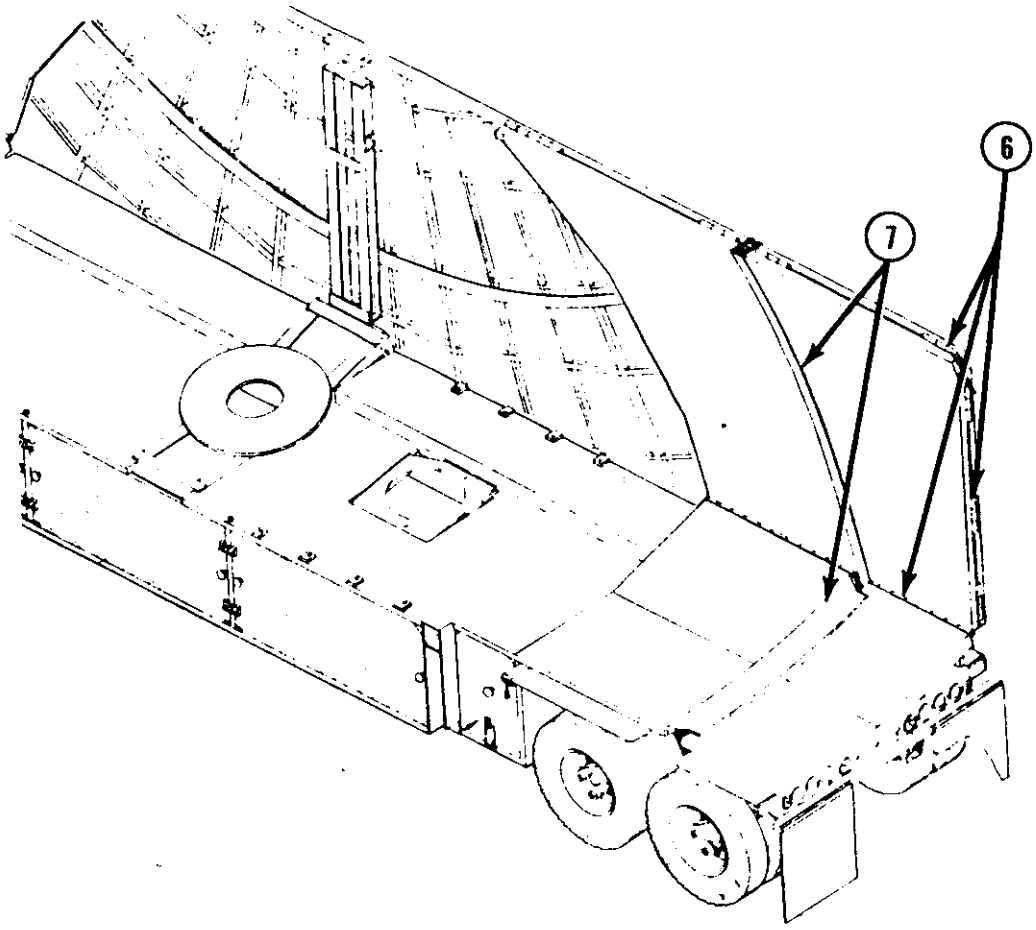


21. ( ) Inspect control lever and detent (Bulletin 89).

22. ( ) Check for smooth acceleration. Braking pressure must be 700 psi (Bulletin 90).

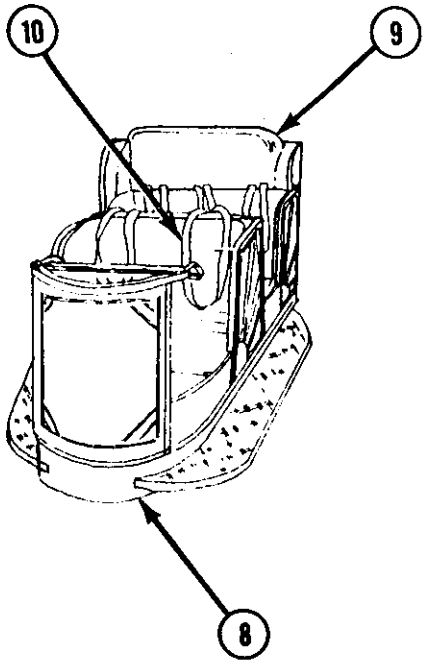
23. ( ) Check speed of ride - 9 rpm maximum. (Bulletin 117).

24. ( ) Check ride for excessive vibration.



6. ( ) Inspect floor hinges for cracks.

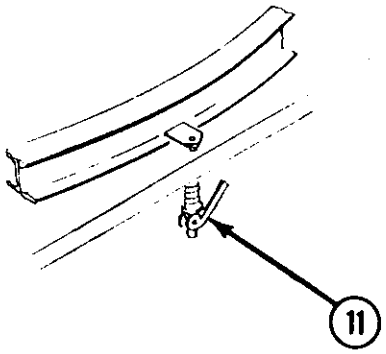
7. ( ) Inspect floor and track with ride running.



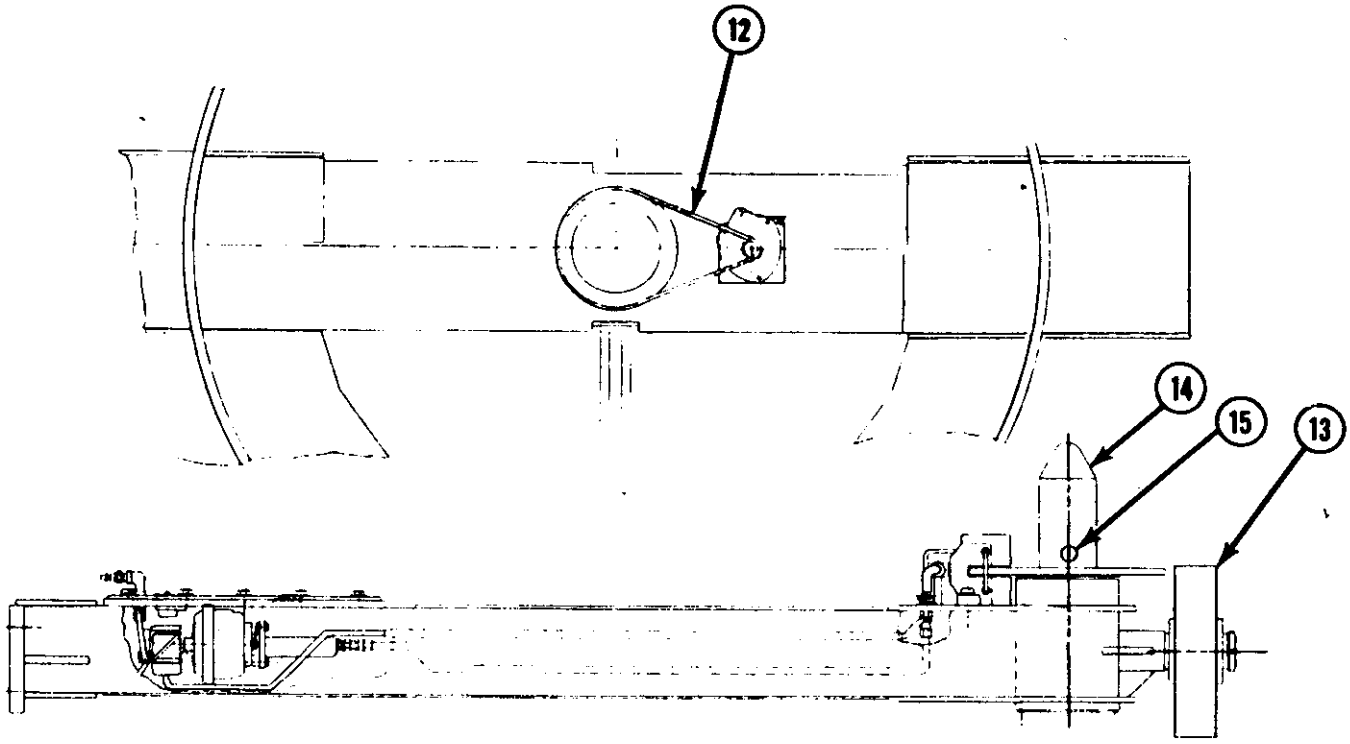
8. ( ) Inspect seats for cracks.

9. ( ) Inspect head rest in each seat (Bulletin 138).

10. ( ) Inspect the seats for restraining belts. 2 belts are required on the front seat, 3 belts on the rear seat (Bulletin 63).



11. ( ) Inspect to see that all track clamps are locked.



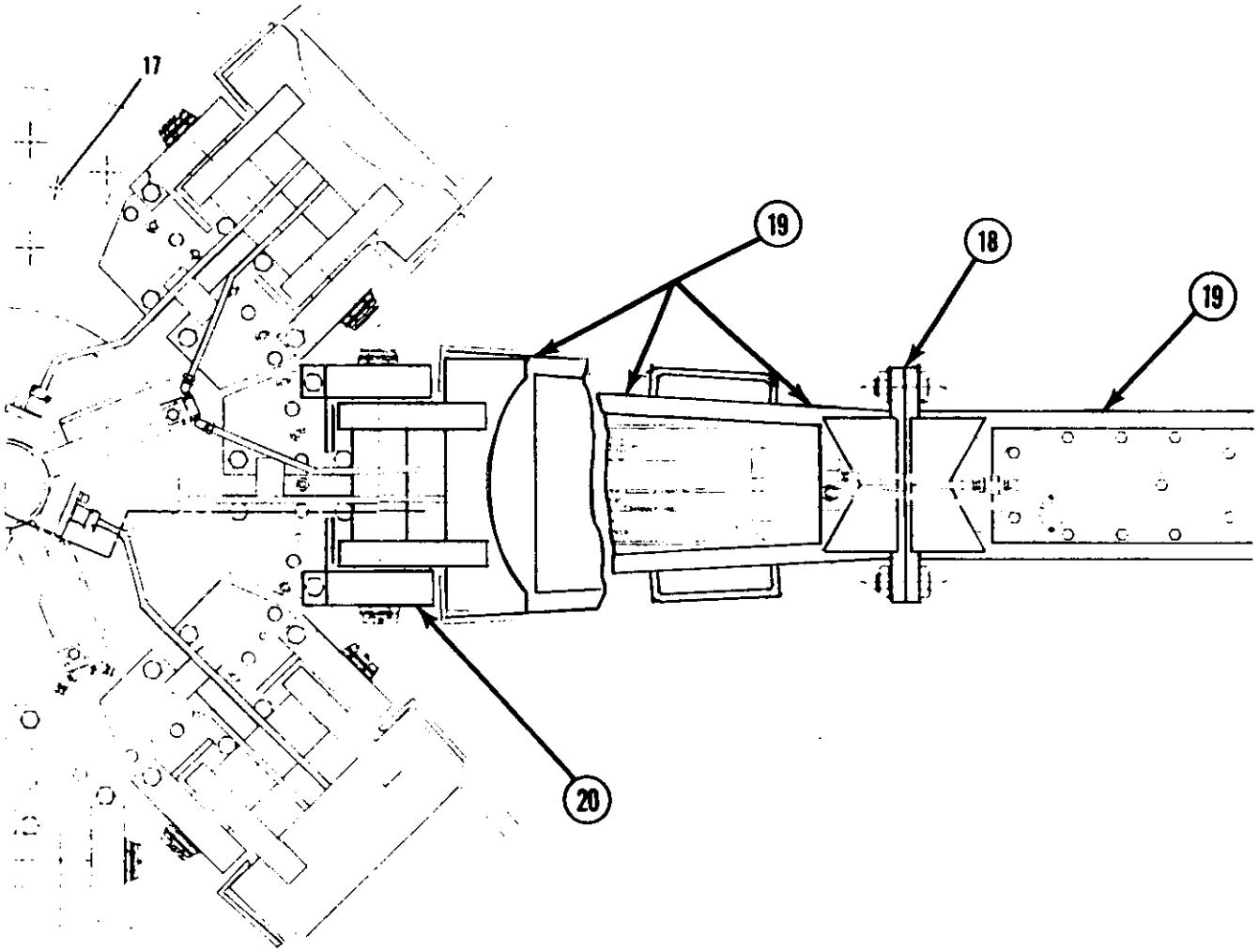
12. ( ) Inspect drive chain adjustment.

13. ( ) Inspect wheel on end of sweep for wear.

14. ( ) Inspect seat spindles for cracks and bearing adjustment.

15. ( ) Inspect pin and hairpin through seat and spindle.

16 ( ) Inspect brake operation on each seat.

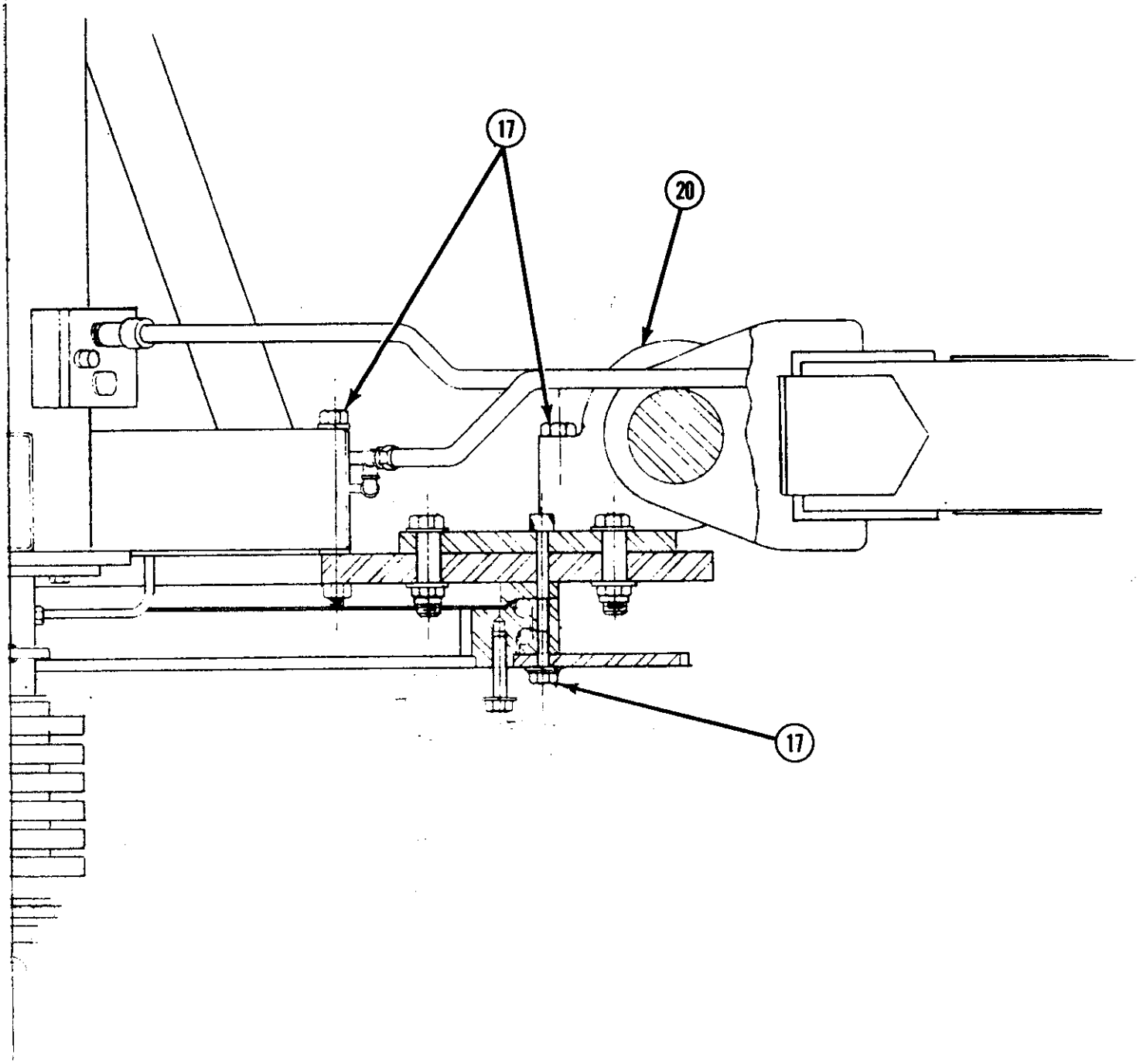


17. ( ) Inspect bolts in center hub area (Bulletins 104 and 104A).

18. ( ) Inspect the joint between inner and outer sweeps (Bulletin 91).

19. ( ) Inspect sweeps for cracks.

20. ( ) Inspect sweep bearing housings for cracks and check bearings for looseness.



17. ( ) Inspect bolts in center hub area (Bulletins 104 and 104A).

20. ( ) Inspect sweep bearing housings for cracks and check bearings for looseness.

Number: 63

Date: 1-2-74

Supersedes:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Numbers:

Ride: TWISTER

Subject: INSTALLATION OF RESTRAINING BELTS

URGENT

This Service Bulletin is to inform you as a TWISTER owner of a condition that makes the addition of restraining belts to your TWISTER cars necessary and desirable. A complete set of these restraining belts will be shipped to you immediately upon return to us of the enclosed card.

<u>These restraining belts are to be installed in all your TWISTER cars immediately upon receipt</u>.

Chance Manufacturing Company, Inc. is requiring the installation of these restraining belts because of circumstances which have recently come to our attention.

As you know, we have no control over the duration of or number of successive rides a patron is allowed to ride. From field observations, it is surmised that some ride operators are giving too long a ride and allowing patrons to ride a number of times in succession.

Either or both of these conditions may present a hazard to the patron.

Any amusement ride which involves movement imposes a given amount of "G" force in the patron's body. The amount of "G" force and the length of time that such force can be endured varies greatly among individuals.

Should a ride patron reach his or her limit of endurance, blackout could possibly result. If this were to happen, they could possibly slide down and out of the car seat.

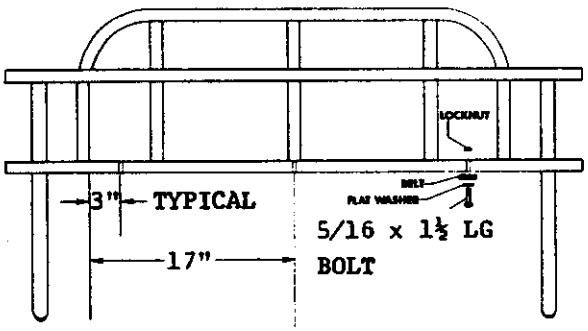
You, as a ride owner, should instruct your ride operators of these possible dangers and we would recommend:

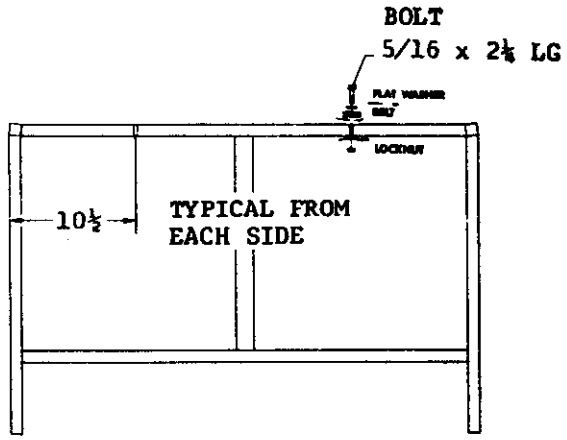
1. Do not give patrons too long a ride.
2. Do not allow a patron to ride in succession.

On the reverse side is a complete set of instructions for installing the belts. In addition you will receive installation instructions with the restraining belts.

INSTALLATION OF BELTS

1. Remove the headrests from the cars and drill three 5/16" diameter holes in each one as shown.
2. Install 5/16 x 1½ LG bolt, flat washer and restraining belt from bottom side of tube on the headrest and secure with locknut.
3. Drill two 5/16" diameter holes down thru the square tube that supports the back of the front seat of each car.
4. Install 5/16 x 2¼ LG bolt, flatwasher and restraining belt from top side of tube and secure with locknut.





FRONT SEAT BACK

NOTE

When installing belts make sure they are not twisted before bolting.

OPERATION OF RIDE AFTER BELTS ARE INSTALLED

Do not start ride until all passengers have slipped under the Restraining Belts so the belt rest around their mid-section and under arm pits.

CHANCE MANUFACTURING CO., Inc.

Number: 67

Date: 2-14-74

Supersedes:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Numbers: 73-2301 THRU 73-2309

Ride: Twister

Subject: Floor lift cylinder-structure addition.

TWISTER OWNERS

In order to improve the structure of the floor lift beam cylinder mounting bracket, we ask that the following change be added to both floor lift beams. Weld two ½" steel plates, one to each side of the hydraulic cylinder mount, in accordance with the dimensions shown in the detail section. Ride owner to furnish plates to be added.

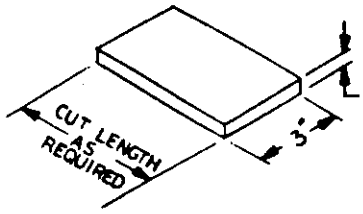
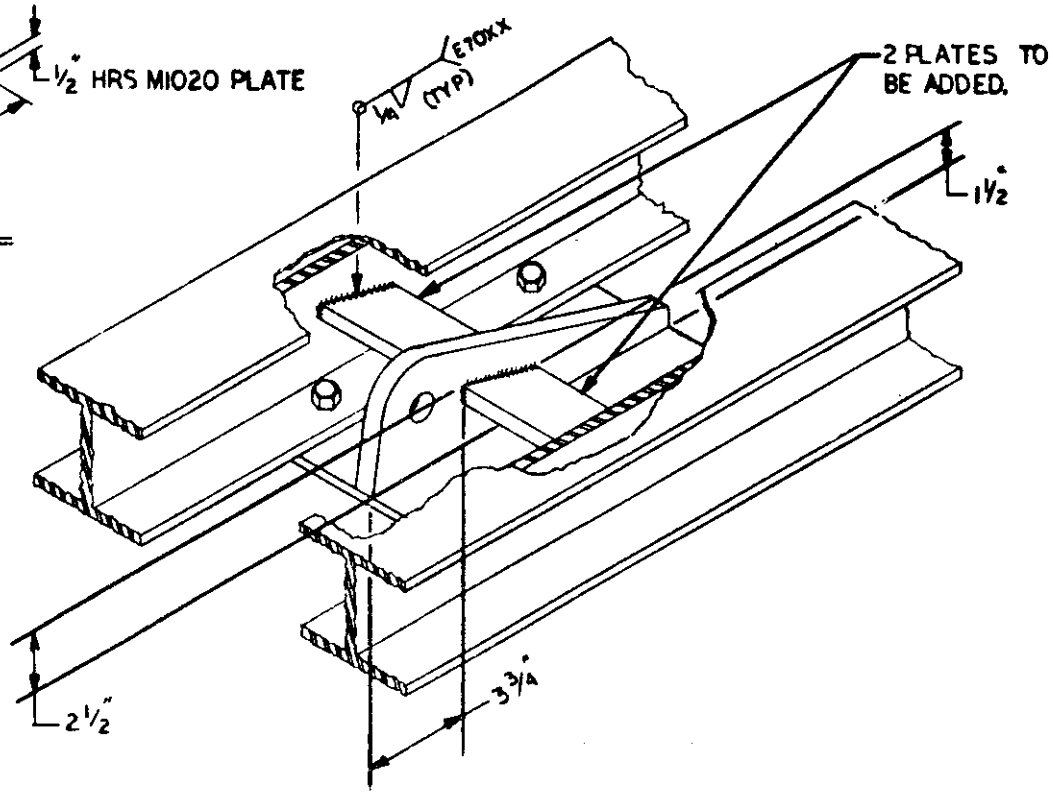


PLATE DETAIL



DETAIL SECTION OF FLOOR LIFT BEAM

Factory and Sales Office: 4219 Irving • P.O. Box 12328 • Wichita, Kansas 67277 • (316) 942-7411

CHANCE MANUFACTURING CO., Inc.

Number: 71

Date: 5-5-74

Supersedes:

America's Largest Manufacturer of Amusement Rides

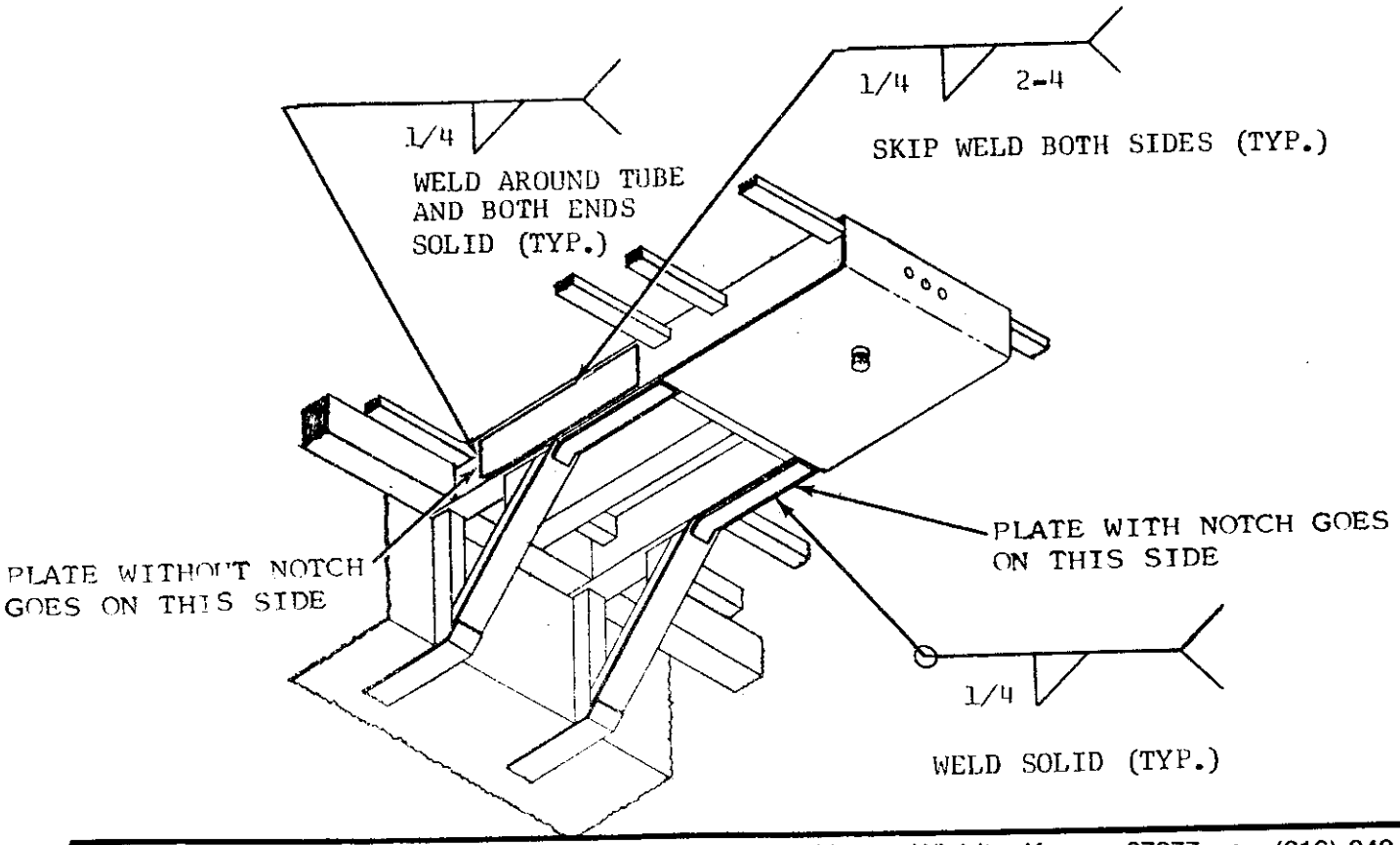
SERVICE BULLETIN

Effective Serial Numbers:

Ride: TWISTER

Subject: Trailer Reinforcement

We wish to inform all Twister owners of an area on the Twister trailer that could be termed marginal as far as strength goes. Should the trailer become bogged in mud and you try to jerk it free, it is possible that the main support tubes could bend. This could also happen if the trailer were bouncing severely on a rough highway. Enclosed is a print showing details of some plates. We are recommending that these plates be added to the trailer immediately. The print calls for 3/8" thick plate and this is recommended. However, if the 3/8" plate is not available, 1/4" plate could be substituded.



Number: 89

Date: 11-8-74

Supersedes:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Numbers: 73-3201 thru 74-3216

Ride: TWISTER (CHANCE BUILT)

Subject: **INSTALLATION OF CONTROL LEVER DETENT**

The following instructions cover installation of a Control Lever Detent which is to be added to each TWISTER.

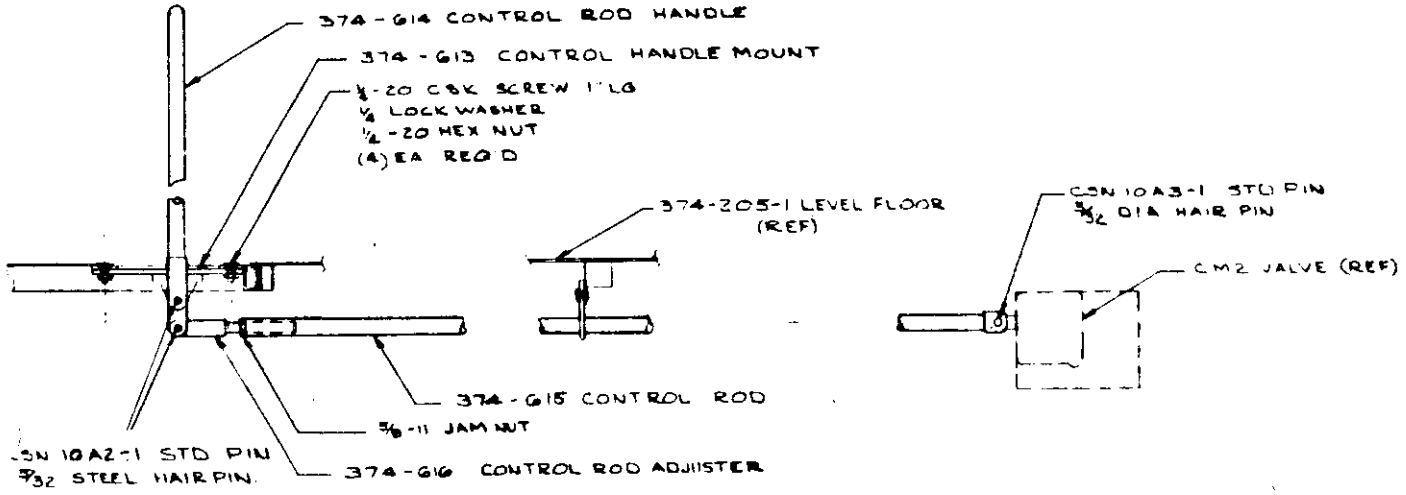
The detent will prevent an accidental engagement of the Control Lever during loading or unloading of the ride.

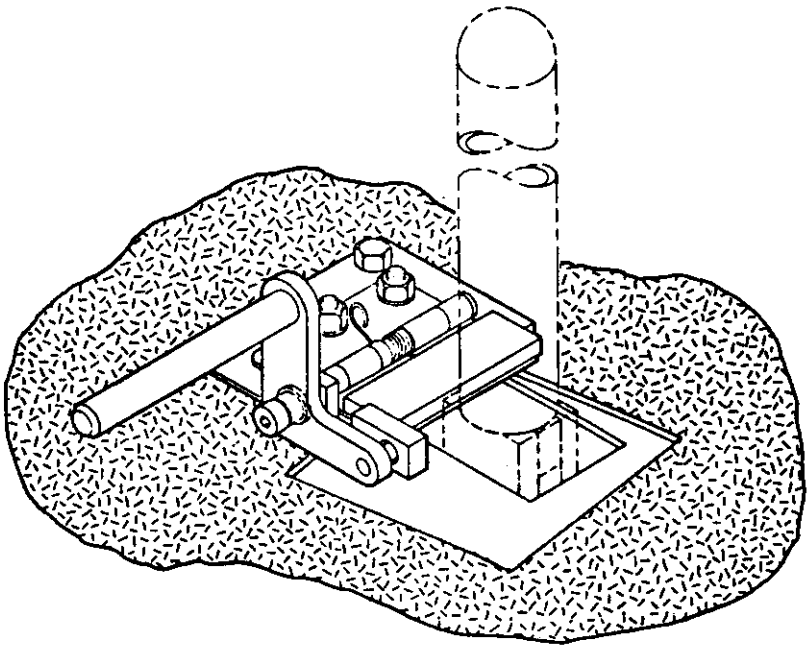
Quantity	Part Number	Description
1	374-610-3	Control Lever Detent Assy.
3 ea.	1/4-20 x 1 1/4 lg.	Bolt, Lock Washer, Nut

The ride must be erected and the Control Rod Handle and linkage installed.

Before installing the detent, the Control Rod Handle should be adjusted so it is in a vertical position.

To adjust handle, loosen the jam nut and adjuster on the control rod underneath the porch. Turn adjuster until Control Handle is vertical and tighten jam nut.





Position Detent Assembly in front of the Control Handle, centering it with the travel of the Handle.

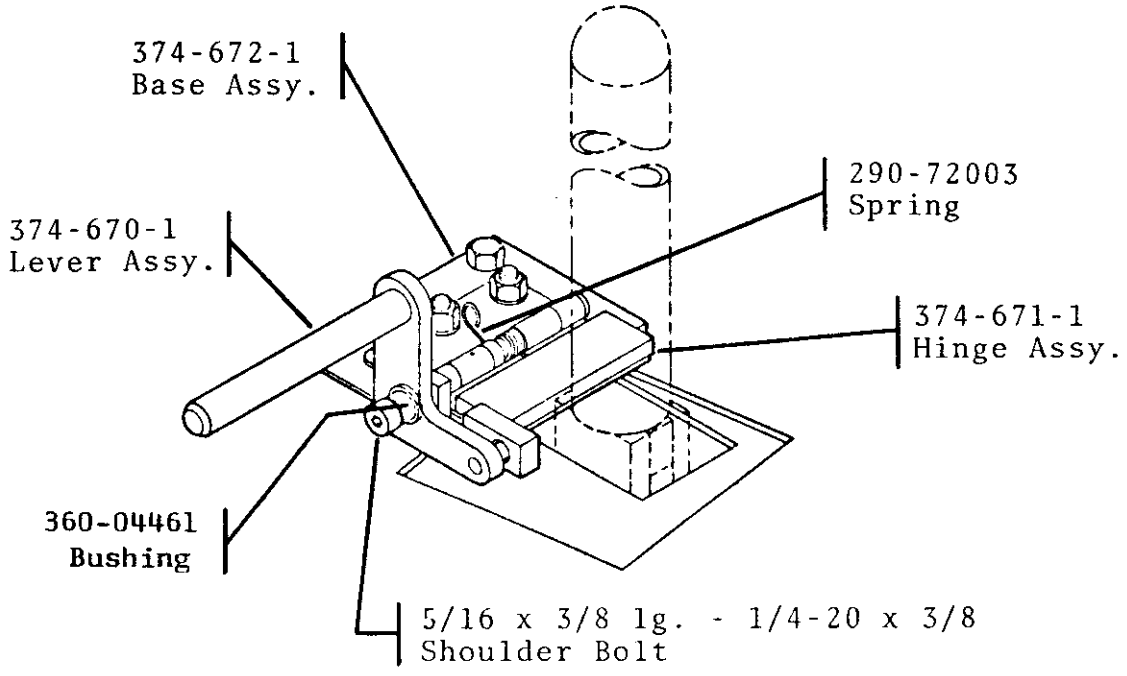
If there is any slop or play in the travel of the handle, push it forward gently until it is at the point of engaging the control valve.

Now, position the detent so that it is up against the Control Handle.

Mark and drill holes to match Detent Base Plate, securing with bolts provided.

REPLACEMENT PARTS

374-610-3 Control Handle Detent Assy.



Number: 90

Date: 11-8-74

Supersedes:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Numbers: 73-3201 thru 74-3216

Ride: TWISTER

Subject: BRAKE RELIEF VALVE PRESSURE SETTING

From field observations, it has become apparent that a number of TWISTER Rides are being operated with the "Brake Pressure Relief Valve" set at a higher pressure setting than the recommended 700 P.S.I. maximum.

This results in a severe braking action causing discomfort to ride passengers. In addition, it subjects the ride structure to undue stresses.

To eliminate this, we have enclosed a new spring that is to be installed in the relief valve. This will limit the valve to a maximum setting of approximately 700 P.S.I.

INSTALLATION OF SPRING

Remove the left rear possum belly door to gain access to hydraulic components.

The Relief Valve is readily accessible as can be seen in photograph.

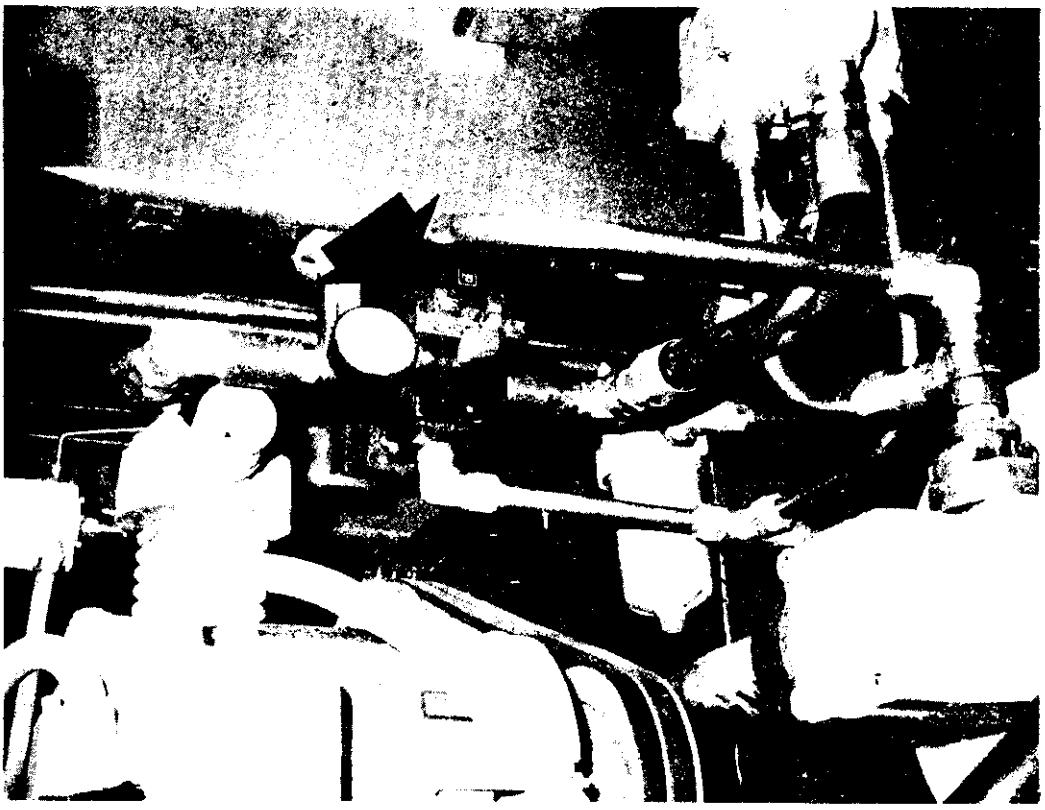
To replace spring, loosen the packing nut behind the Adjustment Knob, and carefully remove Adjustment Knob and Stem.

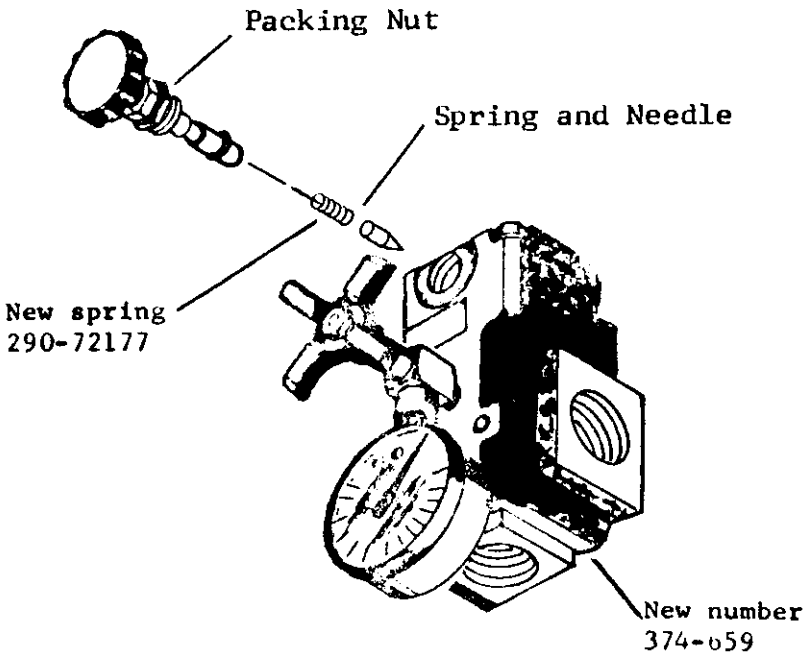
Replace spring and assemble in reverse order.

Run the ride and adjust Relief Valve to approximately 600-700 P.S.I.

CAUTION

Loosen carefully to advoid losing spring and needle, as they will pop out of the hole.





Valve shown removed from system for Clarity Only

DO NOT REMOVE VALVE FROM SYSTEM

NOTE

Change Valve callout on pages 36 & 42 of the Twister Manual, from MRFN 12P-0A-P-09AA to 374-659

Number: 91

Date: 11-10-74

Supersedes:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Numbers:

Ride: TWISTER

Subject: CHECKING SWEEP FOR CRACKS

One of the Outer Sweeps on a TWISTER has developed a crack in it. The crack developed across the top side starting from the access hole for the Master Cylinder. This has only shown up on one sweep and could be attributed to any one of several possible causes.

However, the most logical cause for the crack is simply that the cover plate was not bolted down tightly.

The cover plate, when tightened down, adds the necessary strength needed in this area of the sweep because of the access hole.

CHECKING SWEEPS
(Requires Minimum Two Persons)

All sweeps should be checked immediately.

Remove the cover plate * and inspect area around access hole.

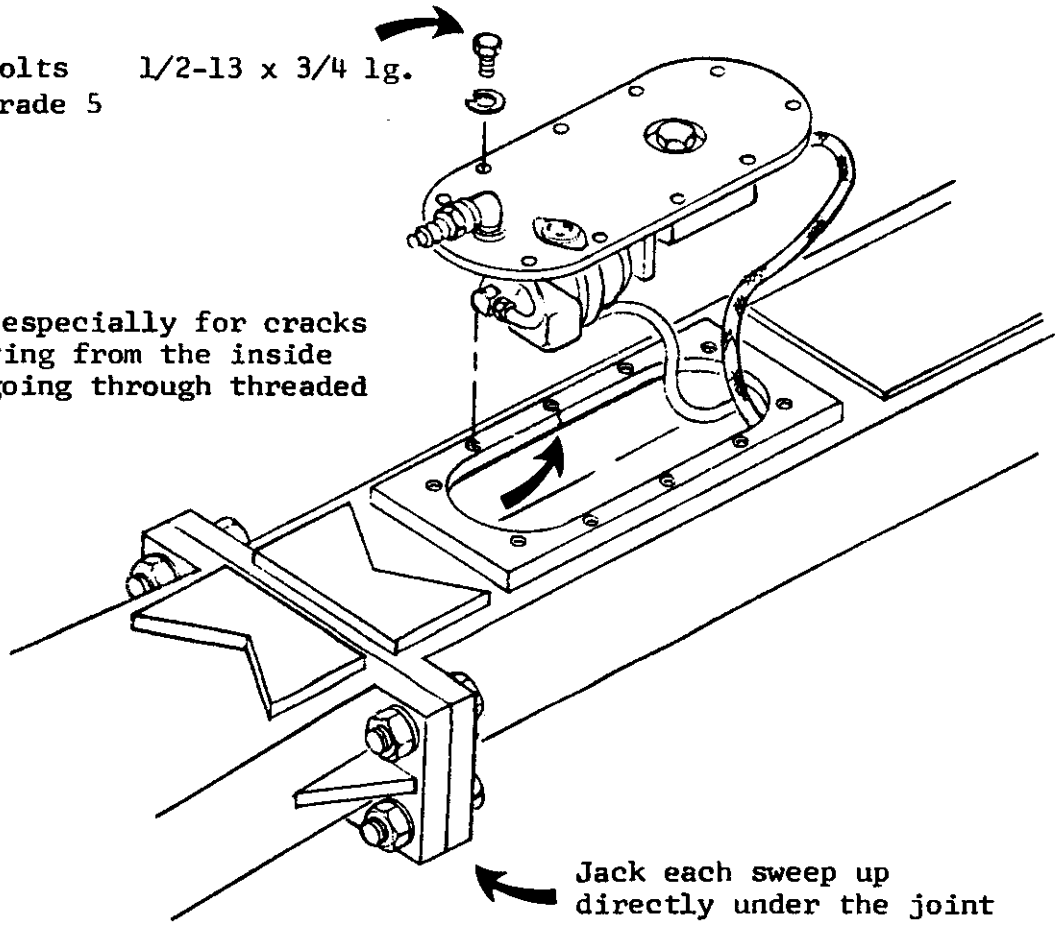
1. Look for cracks in the paint, if paint is old.
2. If ride has recently been painted, look for depressions which might indicate a crack into which paint has run.
3. If ride has been run since painting, again look for cracking or stretching, wrinkles, etc., in paint.

*NOTE:

If any cover plates are found to be loose during inspection, pay particular attention to these sweeps.

After preliminary check, block or jack each sweep up directly under the bolted joint for inner and outer sweep sections.

Again visually inspect area around access hole while having partner stand on the car and bounce. This will possibly cause crack to show up enough to visually sight if one exists.



Re-installing Cover Plates

If no cracks are found, install cover plates, torquing bolts to 75 ft. lbs. If bolts are greasy or oily, torque to 55 ft. lbs.

Check length of bolts before installing cover plates. The six bolts along sides should be 3/4 inch long grade 5 bolts. Longer bolts will bottom out against the sweep channel not drawing the cover plate down tight.

If existing bolts are found to be longer than 3/4 inch, notify Chance Manufacturing. Specify quantity of bolts needed, and they will be shipped free of charge.

If ride must be operable before you receive new bolts, either cut the existing ones off to 3/4 inch or replace. Bolts purchased from suppliers other than Chance Manufacturing must be at least a Grade 5 but not more than a Grade 8 bolt.

EXISTING CRACKS

If any cracks are found, consult Chance Manufacturing Company before attempting to repair or operate ride.

FOLLOW-UP CHECKS

Check torque **values** on bolts securing cover plates weekly. Remove Cover Plates and visually inspect sweep monthly.

Number: 104

Date: 7-21-75

Supersedes:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Numbers:

Ride: TWISTER

Subject: Sweep Check

URGENT

One ride has reportedly developed some problems with the sweep joints where they attach to the center hub. In order to evaluate the precise area and cause, more information is needed from the field.

Please check each sweep on the ride and report findings to Mr. Richard G. Chance, General Manager, Phone - 316, 942-7411.

CHECK THESE AREAS

1. Inspect the plate and ears that bolt onto the Center Hub, paying particular attention to the area around the bolt holes. "B-B" and ears that house the Bearings shown in section "A-A".

Look for any signs of cracks in ears, plate or welds. If the ride has recently been painted, look for signs of cracking or stretching in the paint.

If an area is suspected of having cracks, clean area with solvent and apply thinned-down paint or dye penetrant, wiping off excess. Cracks should then show up as fine dark lines.

2. The sweep shaft is tack welded to the sweep ears as shown in "A-A". Inspect this area very carefully to see if welds are holding.

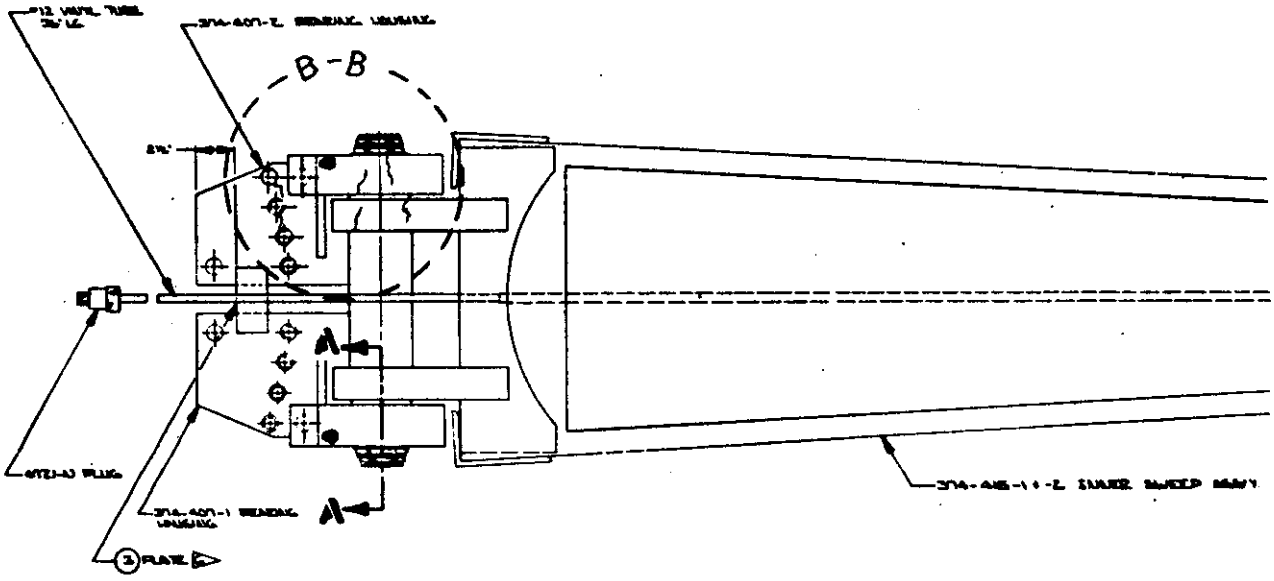
Also, check clearance between sweep ear and the bearing ear. There should be approximately 3/16 inch between the ears.

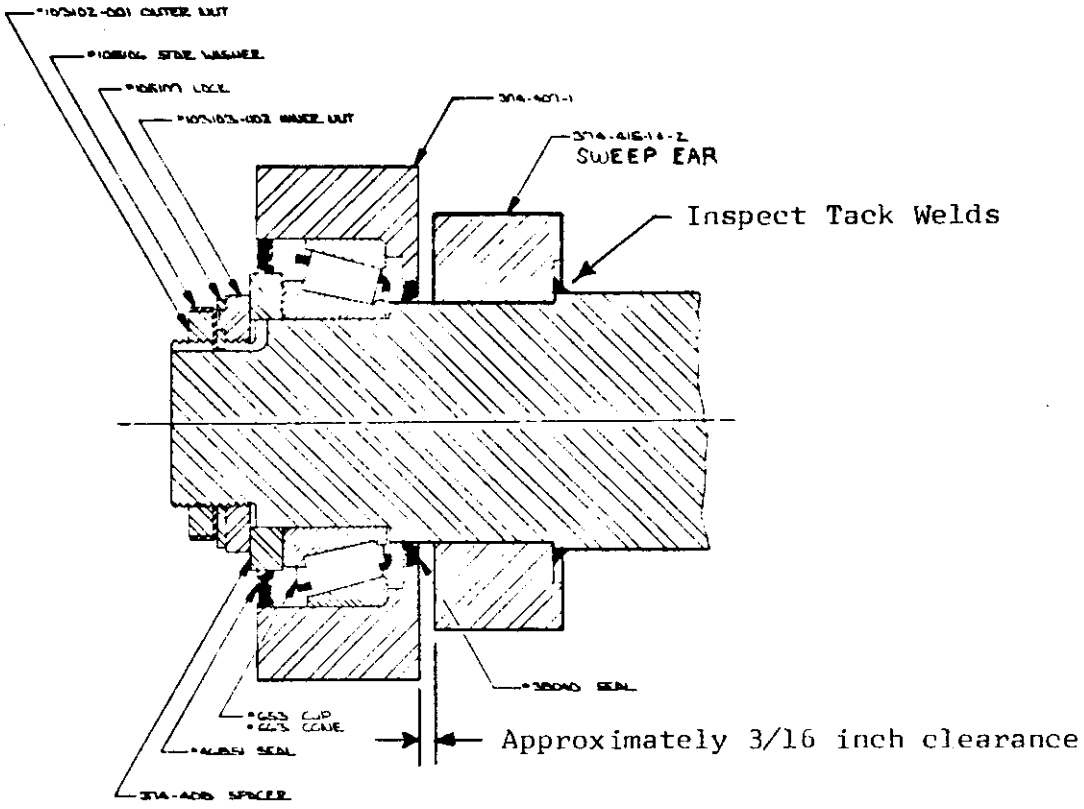
3. Have two men rock the outer sweep end and observe the hub end of the sweep for any signs of play in the bearings, etc.

REPORT FINDINGS TO CHANCE MFG. CO.

4. In addition to checking the sweep, make sure the Braking Pressure is limited to approximately 600 PSI as prescribed in Bulletin #90, 11-8-74. As stated in that bulletin, higher pressures subject the entire ride to undue stress forces during the braking cycles.

IF ANY CRACKS, ETC. ARE FOUND
DO NOT OPERATE RIDE





SECTION A-A

Number: 104A

Date: 9-19-75

Supersedes:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Numbers:

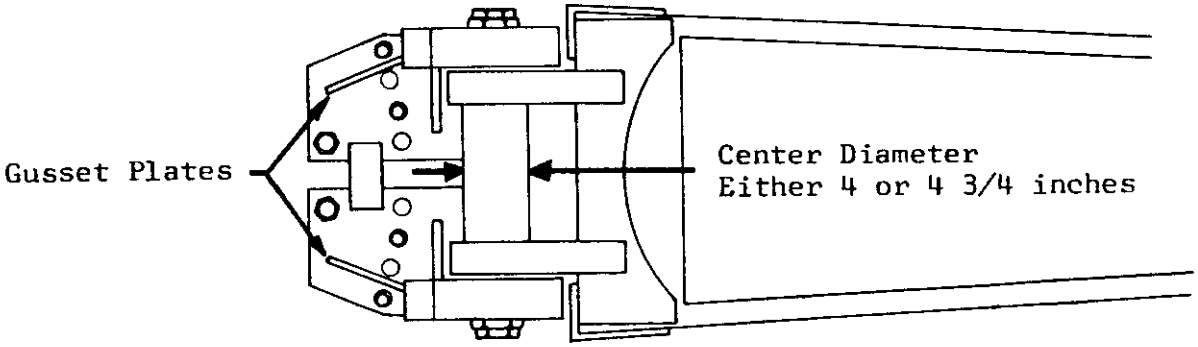
Ride: TWISTER

Subject: SWEEP REPORT

After evaluating the reports on the Sweep joints, Ref. Bulletin 104, it has been determined that it would be desirable to reinforce all exsisting sweep joints, that haven't already been done.

In order to accomplish this, additional information is necessary from each owner. Please answer the following, and notify us as soon as possible.

1. Center diameter of shaft.
2. Bearing housing (does or does not) have gusset plates as shown.



REPORT FINDINGS TO:

Mr. Richard G. Chance, General Mgr.
Chance Mfg. Co., Inc.
P.O. Box 2397
Wichita, Kansas 67201
Phone: AREA CODE 316, 942-7411

Number: 117

Date: 1-5-76

Supersedes:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Numbers:

Ride: TWISTER

Subject: SWEEP REINFORCEMENT
PUMP CHANGE
BRAKE VALVE

DO NOT OPERATE RIDE

Further observations and field reports have indicated that no TWISTER should be operated until the following conditions have been met:

1. Sweeps must be reinforced as described in Bulletin 104A, 105 or 106.

2. The pump supplying the drive circuit must be changed to slow the ride down from 13 R.P.M. to 9 R.P.M.

   New pump is a 25V-17A-1C10L Chance Manufacturing Part Number 260-56092.

3. Brake pressure relief valve is modified per Bulletin #90 to limit braking pressure.

If any of the above has not been completed, contact Mr. Richard G. Chance immediately.

Parts will be provided at no charge.

However, your account will be charged $205.10 to cover the cost of the new pump. This will be credited back to your account when you ship us the pump currently on your ride.

When contacting factory, be sure to specify information as requested in Bulletin 104A.

REPORT FINDINGS TO:

Mr. Richard G. Chance, General Mgr.
Chance Manufacturing Co., Inc.
P.O. Box 2397
Wichita, Kansas 67201
Phone: AREA CODE 316, 942-7411

Number: 138

Date: 7-9-77

Supersedes:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Numbers:

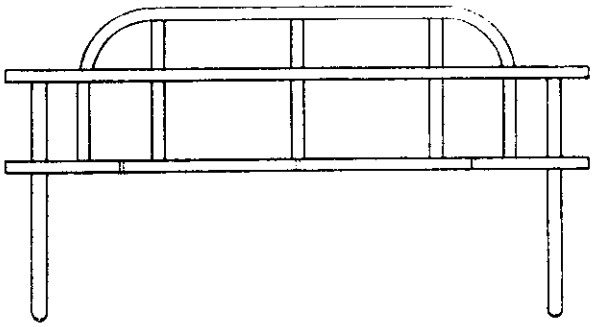
Ride: TWISTER

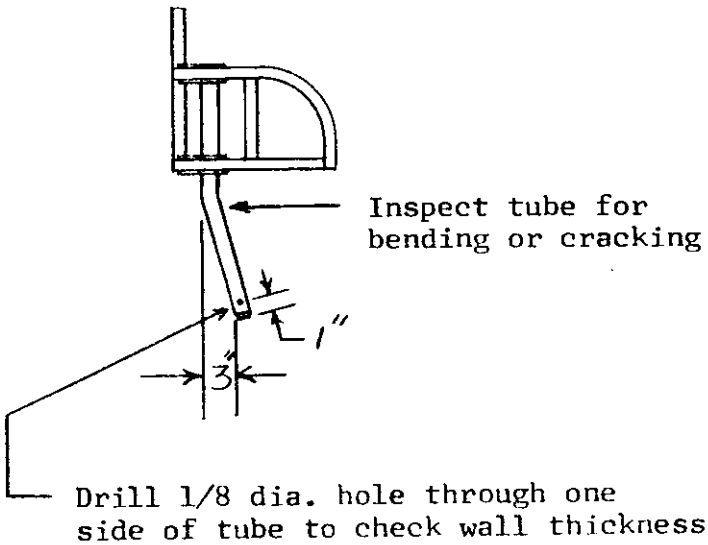
Subject: HEAD REST INSPECTION

All TWISTER owners must inspect the head rests on all TWISTER cars immediately. Remove each head rest and inspect the support tubes that fit down in the sockets on each car. Inspect for any signs of physical damage, such as bending or cracking. Next, drill a small hole, 1/8 inch, near the bottom of the support tube approximately 1 inch from bottom. Drill hole through one side of the tube only. Check wall thickness of tube. It should be 1/8 inch thick.

If any of the tubes show signs of bending or cracking, or if any tube has less than a 1/8 inch wall, immediately report such condition to Mr. Richard G. Chance, General Manager, Chance Manufacturing Company.

Any of the afore-mentioned conditions could result in a serious accident if the head rests are not inspected, and any faults corrected immediately.





Follow-Up Inspections

Inspect the head rest support tubes on a regular weekly basis as an added measure of safety.

Factory and Sales Office: 4219 Irving • P.O. Box 12328 • Wichita, Kansas 67277 • (316) 942-7411

Form TP-0007-883

Number: 60-169

Date: 8-14-78

Supersedes:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Numbers: ALL RIDES

Ride: TWISTER Subject: HUB EAR REPLACEMENT

All work must be done by competent, qualified mechanics capable of understanding the function of the parts and their proper installation.

Before installing this kit, read the instructions completely and familiarize yourself with the parts listed. Make certain all parts have been received. If any parts are missing, notify Chamce Manufacturing Co. immediately. Do not substitute an inferior grade of material or part.

The attached CERTIFICATION OF COMPLIANCE must be completed and returned to Chance Manufacturing, Inc. within seven (7) days of receipt of kit.

If you have any questions concerning the installation of this kit, please contact Chance Manufacturing for assistance.

With ride set up remove outer sweep. Fold stub sweep up and lock into place. Use an air arc to cut the broken ear loose around the outer edge of hub plate. Lower stub sweep and cut broken ear loose all the way around.

Disconnect air hose and wiring from stub sweep. Remove nuts bearing and seal from good ear on opposite side of sweep. Remove bolts from broken ear. Remove stub sweep and broken ear. Grind hub plate smooth.

Remove broken ear from stub sweep. Place bearings from broken ear along with new seal into new ear. Place outer attaching bolt in new ear and install new ear onto shaft. Start nuts onto shaft but do not tighten.

If any seals are damaged they must be replaced.

Install stub sweep and new ear on hub plate. Insert bearing along with new seal in opposite ear. Start adjusting nut on shaft but do not tighten. Start all bolts in new ear but do not tighten. Shove new ear as far as possible away from opposite ear and tighten bolts.

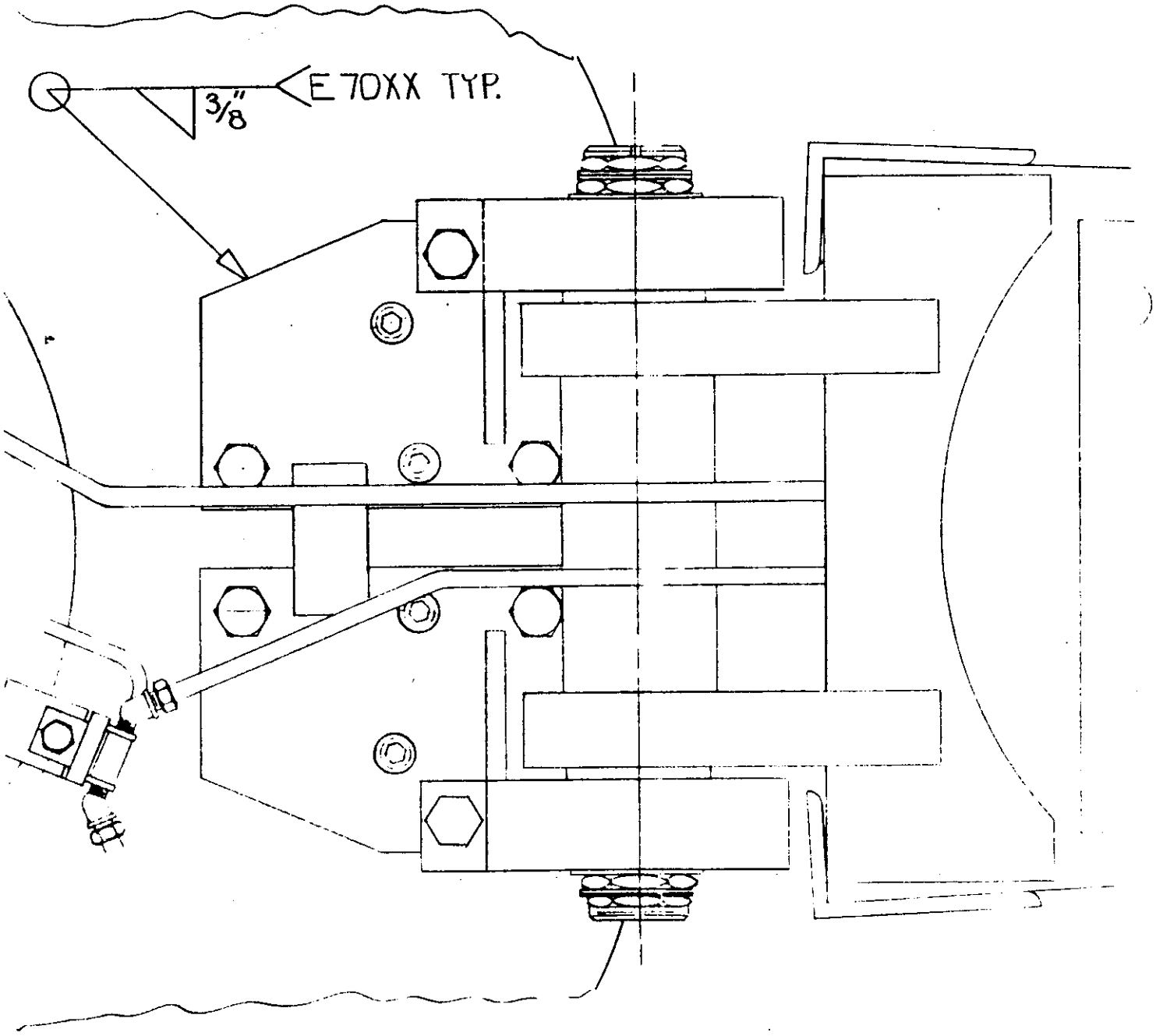
Center stub sweep in ears and lightly adjust bearings. It is recommended that the adjustments of these bearings be performed by someone familiar with adjustment of Temkin bearings.

Tack weld new ear to hub. Check adjustment of bearings and then weld ear to hub all the way around.

All welding must be performed by a welder that is certified under the American Welding Society Structural Welding Code DI. 1-75 or the equivalent.

Check torque on ear attaching bolts. Check bearing adjustment and lock adjustment in place. Install hoses, electrical connections and outer sweep.

The attached CERTIFICATION OF COMPLIANCE must be completed and returned to Chance Mnaufacturing Co., Inc. within seven (7) days of receipt of kit.



CHANCE RIDES, INC.
4219 Irving
Wichita, KS 67277-2328
U.S.A.
Phone: 1-800-242-6231 • FAX: 1-316-942-7416
Website: www.rides.com

Bulletin No: B090R1230-0
Release Date: November 1, 1999
Effective Date: November 1, 1999
Supersedes: N/A
Completion Date: February 1, 2000

SERVICE BULLETIN

Ride Manufacturer: CHANCE RIDES, INC.
Affected Production Dates: All

Ride Name: ALL RIDES
Affected Serial Nos.: All units

Model No.: All

Abstract of Issue:
Anti-Slip Surfaces

Reason For Release:

Injuries caused by slip-and-fall accidents are a well-recognized occurrence in the industry. Although aluminum tread plate has become a standard flooring material, certain conditions reduce its coefficient of friction. These conditions include, but are not limited to: moisture or other lubricants on the surface, excessive wear of the tread bars, etc. These conditions, combined with the variety of materials used in the construction of patron's shoes, can increase the risk of slip-and-fall accidents.

Chance Rides, Inc., installs anti-slip materials on appropriate areas of platforms, ramps, steps and walkways to improve the coefficient of friction in both wet and dry conditions.

Action to be Taken:

All owner/operators of the above noted amusement rides are required to inspect the condition of anti-slip surfaces on their rides. Worn or damaged anti-slip surfaces must be repaired or replaced. Anti-slip materials should be installed in additional areas as deemed appropriate by the owner/operator's particular application.

Detail of Issue:

In addition to the anti-slip materials installed at the factory, other products are available which can provide this safety benefit. Examples are anti-slip coatings, anti-slip tapes, cleats, etc. These after-market anti-slip materials can be installed in appropriate places at the owners determination. Anti-slip materials must be maintained per the manufacturer's instructions, provided with the product.

All work must be performed by qualified personnel, capable of understanding the function of the materials and their proper installation.

CHANCE RIDES, INC.
4219 Irving
Wichita, KS 67277-2328
U.S.A.
Phone: 1-800-242-6231 • FAX: 1-316-942-7416
Website: www.rides.com

Bulletin No: B090R1233-0
Release Date: November 1, 1999
Effective Date: November 1, 1999
Supersedes: N/A
Completion Date: N/A

SERVICE BULLETIN

Ride Manufacturer: CHANCE RIDES, INC. Affected Production Dates: All

Ride Name: ALL RIDES Affected Serial Nos.: All units

Model No.: All

Abstract of Issue:
Inspection and Maintenance Of Guards

Reason For Release:
Chance Rides, Inc. installs guards in areas, not otherwise protected by distance, where rotating or moving parts present a potential safety hazard. These areas include, but are not limited to, drive belts, rotating shafts, drive tires, fans, pinch points, etc. Guards are intended to be left in place at all times during operation.

Guards can be removed for maintenance or other service of the components underneath. Service in these areas must be performed only by personnel trained on the hazards associated with that specific service procedure.

Action to be Taken:
Missing, damaged, or improperly installed guards can cause damage to the equipment and can result in serious personal injury. All owner/operators of amusement rides are required to inspect and maintain all guards in good operating condition. If a guard is removed for service, it must be installed and properly secured before the ride is put back into operation. If safety decals are provided on or around a guard, they must be legible.

Detail Of Issue:
Replacement guards, fasteners and decals are available from Chance Rides, Inc.

All work must be performed by qualified personnel, capable of understanding the function of the parts and their proper installation.

NOTICE

Use only those components authorized, specified or provided by Chance Rides, Inc.

Chance Rides, Inc. SPECIFICALLY DISCLAIMS ANY LIABILITY for losses associated with any unauthorized alterations and/or modifications or additions and installations of unauthorized components.

CHANCE RIDES, INC.
4219 Irving
Wichita, KS 67277-2328
U.S.A.
Phone: 1-800-242-6231 • FAX: 1-316-942-7416
Website: www.rides.com

Bulletin No: B090R1229-0
Release Date: November 1, 1999
Effective Date: November 1, 1999
Supersedes: N/A
Completion Date: N/A

SERVICE BULLETIN

Ride Manufacturer: CHANCE RIDES, INC. Affected Production Dates: All

Ride Name: ALL RIDES Affected Serial Nos.: All units

Model No.: All

Abstract of Issue:

Hydraulic Hose Installation, Inspection and Maintenance

Reason For Release:

Chance Rides, Inc. utilizes hydraulic hoses in the design of all hydraulic systems. The material, size, length and configuration of each hose is carefully selected based on a number of factors. These factors include, but are not limited to, location, function, operating pressure and capacity.

Improperly installed hoses, or installation of the wrong hose can cause failure of the hose, resulting in leakage, rupture, or contamination of the hydraulic system. These types of failure can cause malfunction of the equipment or fire, and can result in serious personal injury.

Action to be Taken:

Replacement hoses are available from Chance Rides, Inc. If replacement hoses are procured from another source, the new hose must meet all specifications of the original hose. When a hose is removed, it must be routed in such a manner that the new hose is kept away from moving parts and electrical connections. Hoses must be inspected regularly and maintained to keep them in good condition. This bulletin provides guidelines on specific causes of hose failure. These guidelines must be considered as part of an overall inspection and maintenance process.

All work must be performed by qualified personnel, capable of understanding the function of the parts and their proper installation.

NOTICE

Use only those components authorized, specified or provided by Chance Rides, Inc.

Chance Rides, Inc. SPECIFICALLY DISCLAIMS ANY LIABILITY for losses associated with any unauthorized alterations and/or modifications or additions and installations of unauthorized components.

CHANCE RIDES, INC.
4219 Irving
Wichita, KS 67277-2328
U.S.A.
Phone: 1-800-242-6231 • FAX: 1-316-942-7416
Website: www.rides.com
E-mail: rides@rides.com

Bulletin No: B090R1229-0
Release Date: November 1, 1999
Effective Date: November 1, 1999
Supersedes: N/A
Completion Date: N/A

Ride Manufacturer: CHANCE RIDES, INC. Affected Production Dates: All

Ride Name: ALL RIDES Affected Serial Nos.: All units

Model No.: All

Detail Of Issue

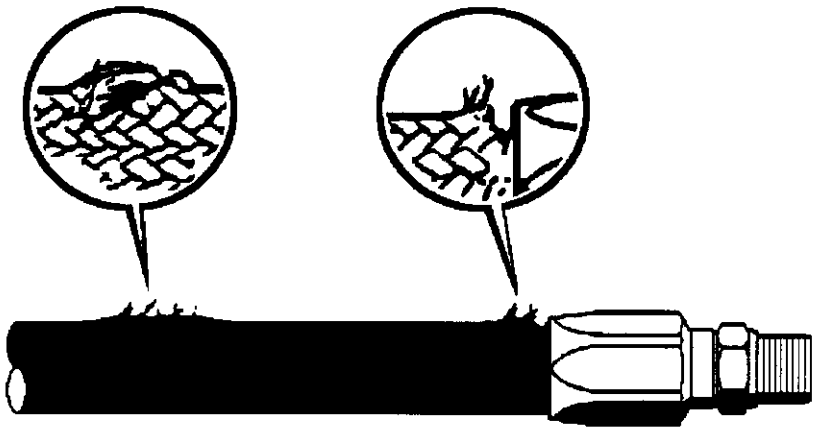
The following are common causes of hydraulic hose failure:

1. Improper pressure range
2. Excessive temperature (internal or external)
3. Fluid compatibility
4. Improper hose size - internal diameter
5. Improper hose length
6. Exceeding minimum bend radius
7. Hose / fittings mismatch
8. Improper alignment
9. Excessive abrasion
10. Improper use

1. Pressure Rating

Hoses must never be subjected to pressure greater than their rated working pressure. When the working pressure is exceeded, the safety factor is reduced, resulting in greatly shortened service life and premature failure, such as hose rupture or even "blow-offs" (separation of the hose from its end fitting). Premature failure increases operating costs through frequent replacement and increased down-time.

Hydraulic systems often experience momentary increases in pressure (surges and shocks) which are too short in duration to actuate the relief valve. When these pressure pulses are high enough and occur often enough, they exert excessive stress on the hose and reduce its life. Pressure peaks can cause failure in the hose, or at a fitting. When excessive pressure surges can be anticipated, a hose with a higher pressure rating must be selected.



CHANCE RIDES, INC.
4219 Irving
Wichita, KS 67277-2328
U.S.A.
Phone: 1-800-242-6231 • FAX: 1-316-942-7416
Website: www.rides.com
E-mail: rides@rides.com

Bulletin No: B090R1229-0
Release Date: November 1, 1999
Effective Date: November 1, 1999
Supersedes: N/A
Completion Date: N/A

Ride Manufacturer: CHANCE RIDES, INC. Affected Production Dates: All

Ride Name: ALL RIDES Affected Serial Nos.: All units

Model No.: All

Detail Of Issue (continued):

2. Temperature Rating

Temperature extremes, both internal and external, are major contributors to early hose failure. Hoses which are continuously exposed to heating/cooling cycles will experience accelerated deterioration. When these cycles occur in conjunction with repeated pressure surges, hose service life is drastically shortened.

Hoses can become embrittled through exposure to exterior temperatures of several hundred degrees. This condition can be created by improper routing of the hose (e.g., where a hose is located near a manifold or other hot area). In such cases, the hose must be re-routed or shielded from the heat source.

3. Fluid Compatibility

Another major consideration in the proper selection of hoses is fluid compatibility. The performance characteristics of any specific hose material must be compatible with the fluid which it will contact in service. Incompatible fluids will affect the hose liner. It may become embrittled, softened, dissolved, shrunken or swollen. These conditions can cause leakage at or away from the fittings, or blow-offs. Solid particles from deteriorating hoses can clog valves and filters.

4. Size

If the internal diameter of the hose is too small to handle the full flow demanded by the system, flow is restricted by friction. Friction results in heat, both in the hose and the fluid. Heat leads to reduced hose life.

5. Length

In any hose installation, allow some extra length in the hose for slack. Pressure changes can cause a hose to lengthen by up to 2% or to shorten by as much as 4%. For example, a 100-inch hose can contract to 96 inches. If the hose has no slack, it will tend to pull away from the end fitting and will be damaged.

CHANCE RIDES, INC.
4219 Irving
Wichita, KS 67277-2328
U.S.A.
Phone: 1-800-242-6231 • FAX: 1-316-942-7416
Website: www.rides.com
E-mail: rides@rides.com

Bulletin No: B090R1229-0
Release Date: November 1, 1999
Effective Date: November 1, 1999
Supersedes: N/A
Completion Date: N/A

Ride Manufacturer: CHANCE RIDES, INC. Affected Production Dates: All

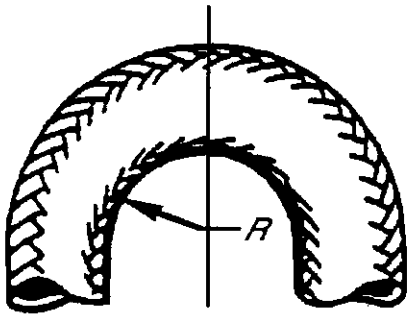
Ride Name: ALL RIDES Affected Serial Nos.: All units

Model No.: All

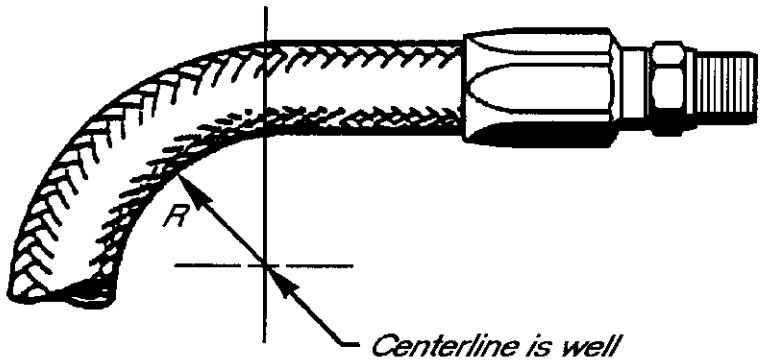
Detail Of Issue (continued):

6. Exceeding the bend radius

A bend radius that is too tight will result in reduced hose life. When a rubber hose exceeds its minimum bend radius the outside may appear smooth even if the inner tube is kinked. It is important to measure the bend radius as shown below to check that it is in the specified limits for that hose. Check with the supplier of the hose for its minimum bend radius.



Bend is too small



Centerline is well away from fitting

When a bend radius is too tight, immediately re-route the hose or use different adapters to correct the condition.

CHANCE RIDES, INC.
4219 Irving
Wichita, KS 67277-2328
U.S.A.
Phone: 1-800-242-6231 • FAX: 1-316-942-7416
Website: www.rides.com
E-mail: rides@rides.com

Bulletin No: B090R1229-0
Release Date: November 1, 1999
Effective Date: November 1, 1999
Supersedes: N/A
Completion Date: N/A

Ride Manufacturer: CHANCE RIDES, INC. Affected Production Dates: All

Ride Name: ALL RIDES Affected Serial Nos.: All units

Model No.: All

Detail Of Issue (continued):

7. Hose / Fitting Mismatch

When a hose blows away from a fitting, the can often be traced to either a mismatch where the wrong hose end fitting was selected for a particular hose or the fitting was incorrectly installed.

A typical hose/fitting mismatch is one in which the wall thickness of the hose is too large for the fitting. The fitting will not seat completely onto the hose without damaging one or both parts. This can cut the hose liner and result in leakage or blow-off.

Similarly, when a low pressure hose is installed onto a high pressure fitting, the hose wall is to thin to be gripped adequately. The hose will either blow-off or leak. Also, bubbling of the hose cover and leakage at the fitting are common.

CHANCE RIDES, INC.
4219 Irving
Wichita, KS 67277-2328
U.S.A.
Phone: 1-800-242-6231 • FAX: 1-316-942-7416
Website: www.rides.com
E-mail: rides@rides.com

Bulletin No: B090R1229-0
Release Date: November 1, 1999
Effective Date: November 1, 1999
Supersedes: N/A
Completion Date: N/A

Ride Manufacturer: CHANCE RIDES, INC. Affected Production Dates: All

Ride Name: ALL RIDES Affected Serial Nos.: All units

Model No.: All

Detail Of Issue (continued):

8. Improper Alignment

As hoses are routed and fittings tightened, the hose can become twisted. This condition must be avoided. A 7% twist in a hose can reduce its life by as much as 90%. Also, a twisted hose under pressure tends to "un-twist". This can cause the end fitting to loosen from its connection.

Hoses usually have a line printed on the outside as shown, called the "lay line". The lay line is useful as a point of reference in detecting twists in the hose. Keep the lay line straight as the hose is installed and fittings are tightened.

CHANCE RIDES, INC.
4219 Irving
Wichita, KS 67277-2328
U.S.A.
Phone: 1-800-242-6231 • FAX: 1-316-942-7416
Website: www.rides.com
E-mail: rides@rides.com

Bulletin No: B090R1229-0
Release Date: November 1, 1999
Effective Date: November 1, 1999
Supersedes: N/A
Completion Date: N/A

Ride Manufacturer: CHANCE RIDES, INC. Affected Production Dates: All

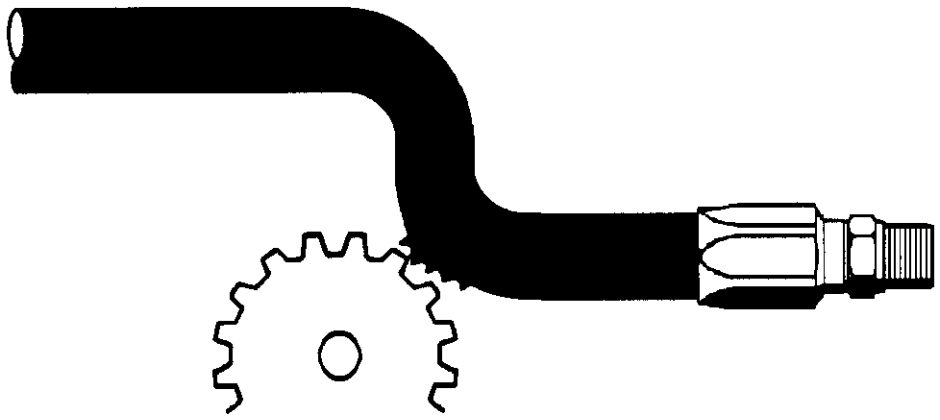
Ride Name: ALL RIDES Affected Serial Nos.: All units

Model No.: All

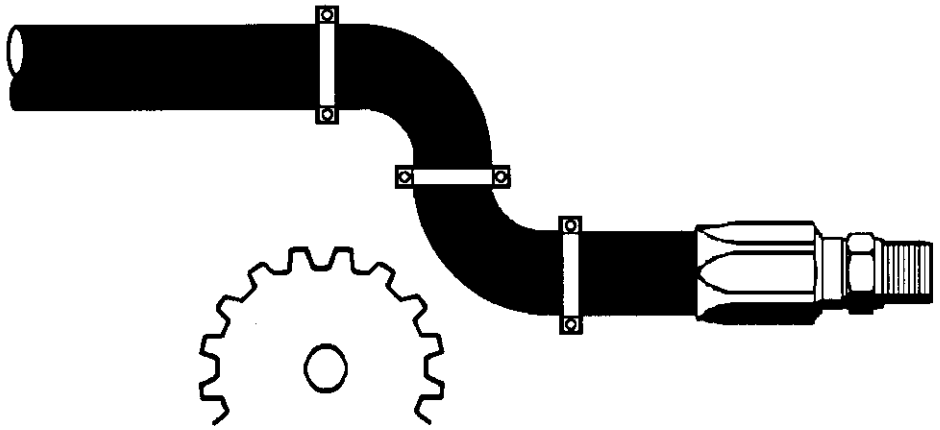
Detail Of Issue (continued):

9. Abrasion

Route hoses to avoid rubbing or abrasion between hoses, or between hoses and other components. While relative motion caused by moving parts is obvious, do not overlook motion created by vibration.



When a hose must be routed through tight areas or near moving parts, use clamps to secure the hose. Clamping helps keep hoses away from adjacent components. Do not exceed bend radius recommendations



CHANCE RIDES, INC.
4219 Irving
Wichita, KS 67277-2328
U.S.A.
Phone: 1-800-242-6231 • FAX: 1-316-942-7416
Website: www.rides.com
E-mail: rides@rides.com

Bulletin No: B090R1229-0
Release Date: November 1, 1999
Effective Date: November 1, 1999
Supersedes: N/A
Completion Date: N/A

Ride Manufacturer: CHANCE RIDES, INC. Affected Production Dates: All

Ride Name: ALL RIDES Affected Serial Nos.: All units

Model No.: All

Detail Of Issue (continued):

10. Improper Use

Treat hydraulic hoses with care. Although not delicate improper handling and use will severely shorten their life. Do not stand on hoses or hang onto them when working on the equipment. Do not drive over or set heavy objects on top of hoses. Do not force or pull on hoses as they are installed. Keep sharp tools and other objects clear of hoses.

NUMBER: B090R1166-0

DATE: NOV. 18, 1994

SUPERSEDES:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Number: ALL UNITS WITH THREE-POSITION SWING KNOBS

Ride: ALL RIDES

Subject: REPLACEMENT OF THREE-POSITION SWING KNOB SWITCH

Chance Rides, Inc. has determined, through field experience, that the three-position swing knob switches used on many Chance Rides, Inc. products may not meet our specifications. These swing knob switches are located on the operator's control panel and can be identified as those knobs which have three positions, the center position being the neutral position with the knob automatically returning to that position by means of a spring. These swing knob switches require routine inspection to insure the spring is functioning properly in returning the knob to the center position. If the spring breaks, the knob will not return to the center position. If the knob does not return to the center position, the ride may not function as the operator expects, resulting in possible injury to the operator, attendants and/or passengers.

Chance Rides, Inc. is now using a new three-position swing knob switch and requires all owner/operators of Chance Rides, Inc. products with three-position swing knob switches to order and install the new replacement knobs and mating contact blocks. Refer to the chart on this bulletin to help identify those rides having swing knob switches which need to be replaced, along with the quantity of swing knob switches and the number and kind of contact blocks required for each ride as well as the appropriate part numbers for each item. The cost of these new style swing knob switches and contact blocks will be credited back to the purchaser if the old style swing knob switch is returned to Chance Rides, Inc. within ninety (90) days of the date on this bulletin.

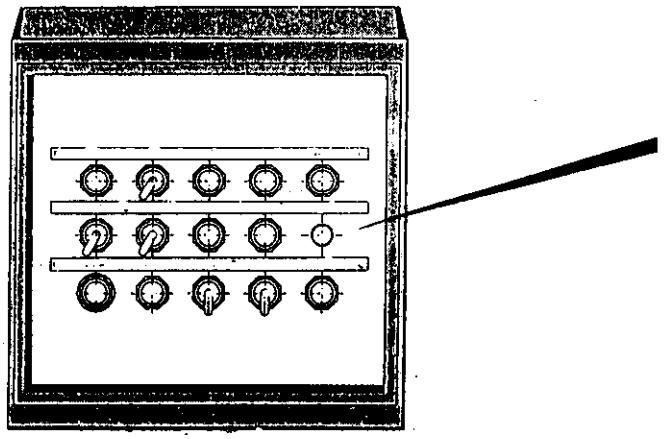
WARNING: TO PREVENT ELECTRICAL SHOCK, BE SURE THAT THE MAIN POWER TO THE UNIT IS TURNED OFF AND LOCKED-OUT BEFORE ATTEMPTING TO DO ANY ELECTRICAL WORK ON THE UNIT.

All work must be performed by qualified personnel, capable of understanding the function of the parts and their proper installation.

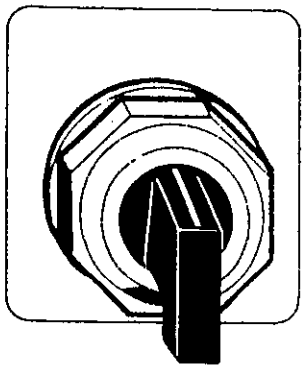
NOTICE

Use only those components authorized, specified or provided by Chance Rides, Inc.

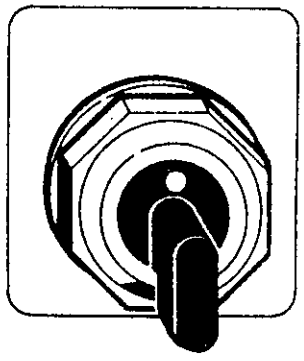
Chance Rides, Inc. SPECIFICALLY DISCLAIMS ANY LIABILITY for losses associated with any unauthorized alterations and/or modifications or additions and installations of unauthorized components.



EXAMPLE OF CONTROL PANEL
All control panels do not look alike.



NEW STYLE



OLD STYLE

PARTS NEEDED TO REPLACE OLD STYLE SWING KNOBS WITH NEW REPLACEMENT SWING KNOBS

RIDE	SERIAL NUMBER	SWING KNOB P/N 24842003	CONTACT BLOCK 1 N.O. P/N 20634601	CONTACT BLOCK 2 N.O. P/N 20634900	CONTACT BLOCK 2 N.C. P/N 20635200
CENTURY WHEEL	406-00193 -- 406-02594	2		3	
GIANT WHEEL	400-00188 -- 400-03894	2		3	
MGR W/HCP	ALL	1		2	
PHARAOH'S FURY	407-00194 -- 407-00294	1		1	
ROTOR	372-03688 -- 372-03893	2		2	
WIPEOUT	402-00190 -- 402-02894	3	3	3	
YO-YO	376-06889 -- 376-07593	1		1	
ZIPPER	106-14590 -- 106-18094	3		4	1

NUMBER: B090R1133-0

DATE: AUG. 6, 1993

SUPERSEDES:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Number: ALL UNITS WITH QUARTZ FLOODLIGHTS

Ride: ALL RIDES

Subject: FLOOD LIGHT SAFETY

Chance Rides, Inc. now installs a special tape to the lens of the factory installed quartz flood lights used on amusement rides. This tape helps prevent the glass lens from falling apart even if it should break. This provides an additional measure of safety to personnel and passengers of the rides.

Chance Rides, Inc. requires all owner/operators of Chance Rides products with quartz flood lights to order and install tape, part number 45001700 as outlined in this bulletin. Tape comes in 10 inch width and is available by the foot. Order the appropriate amount, to the nearest foot, to insure all flood lights have been completely covered. This tape is available at no charge if ordered within 90 days of the date on this bulletin.

All work must be performed by qualified personnel, capable of understanding the function of the parts and their proper installation.

NOTICE

Use only those components authorized, specified or provided by Chance Rides, Inc.

Chance Rides, Inc. SPECIFICALLY DISCLAIMS ANY LIABILITY for losses associated with any unauthorized alterations and/or modifications or additions and installations of unauthorized components.

Installation Instructions

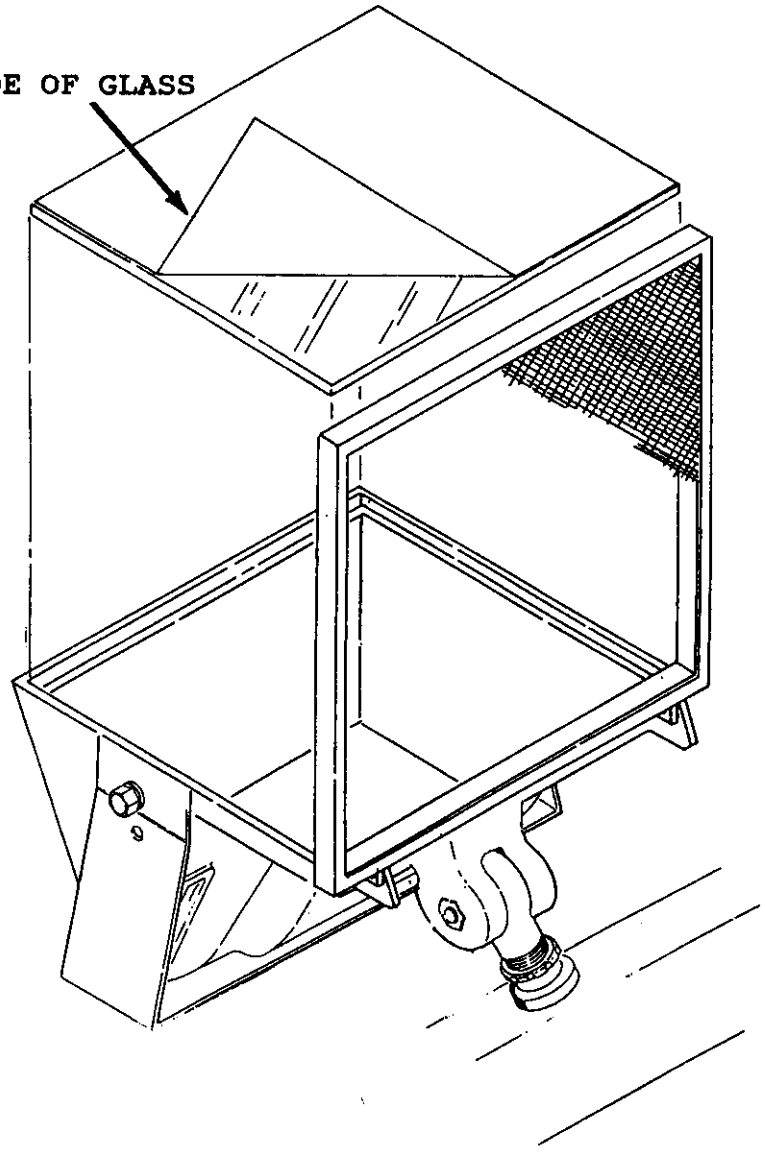
1. Remove glass lens from light fixture.
2. Measure and trim tape to fit lens.
3. Carefully remove the backing from the tape.
4. Apply tape to glass in such a manner as to prevent air bubbles from forming.

NOTE: A fine mist of water applied to the glass first may help eliminate air bubbles as well as increase the ease by which the tape is applied.

IMPORTANT: If water is used, make sure all water has evaporated from between the glass and the tape before turning light on. A period of at lease two days may be required for evaporation.

CAUTION: Quartz flood lights can get extremely hot. Do not attempt to apply tape after light has been on.

TAPE IS APPLIED TO OUTSIDE OF GLASS



ALL RIDES

NUMBER: B090R1128-0

DATE: APRIL 28, 1993

SUPERSEDES:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Number: All Units

Ride: All Rides Subject: Cable Inspection

Reference Standards: OSHA 1926-550 Subpart N
Cranes, Derricks, Hoists, Elevators and Conveyors

ANSI B30.5
5-2.4.3 Rope Replacement
5-2.4.4 Rope Maintenance

Chance Rides, Inc. recognizes the above listed standards with regards to cables (wire rope) used for rigging, slings, and hoists for the purposes of setup and/or tear down of an amusement ride. It is further recognized that no precise rules can be given to determine the exact life expectancy of any given cable, due to the variables to which that cable may be subjected. Continued use of a cable depends on the judgment of the individual who is authorized to evaluate the cable.

Chance Rides, Inc. requires that prior to each setup or tear down of an amusement ride, that the owner's authorized representative inspect and evaluate all cables, specified in this bulletin. Cables specified in this bulletin must be replaced if any of the following conditions exists:

1. Six randomly distributed broken wires in one lay;
2. Three broken wires in any one strand in one lay;
3. Wear of one-third the original diameter of outside individual wires;
4. Physical damage such as kinking, crushing, bird caging, or any other damage resulting in distortion of the cable structure;
5. Damage due to heat of any kind; or

Factory and Sales Office: 4219 Irving · P.O. Box 12328 · Wichita, Kansas 67277-2328 · (316) 942-7411 · FAX: (316) 942-7416

6. Reductions from the nominal cable diameter of more than any of the following:

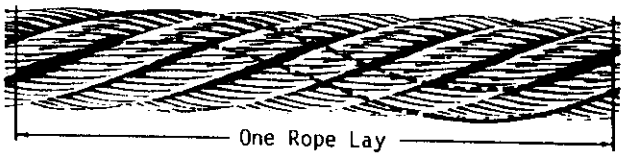
NOMINAL CABLE DIAMETER	MAXIMUM REDUCTION
5/16" AND SMALLER	1/64 OF AN INCH
3/8 - 1/2"	1/32 OF AN INCH
9/16 - 3/4"	3/64 OF AN INCH
7/8 - 1-1/8"	1/16 OF AN INCH
1-1/4 - 1-1/2"	3/32 OF AN INCH

All work must be performed by qualified personnel, capable of understanding the function of the parts and their proper installation.

NOTICE

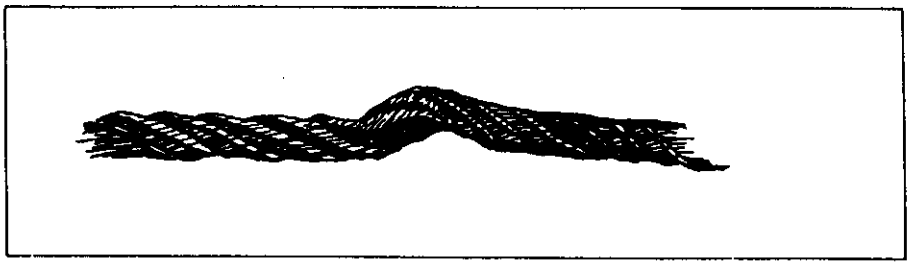
When it is deemed necessary to replace a cable, use only those components authorized, specified or provided by Chance Rides, Inc. If any alterations and/or modifications or additions and installations of unauthorized components are made to the original design without the manufacturer's explicit written consent or without direct supervision by a manufacturer's representative, Chance Rides, Inc. makes no claim as to the integrity of the altered or modified ride.

For inspection of drive cables or cables used to support the ride duri operation refer to Chance Rides, Inc. Service Bulletin Number B090R1071-0.

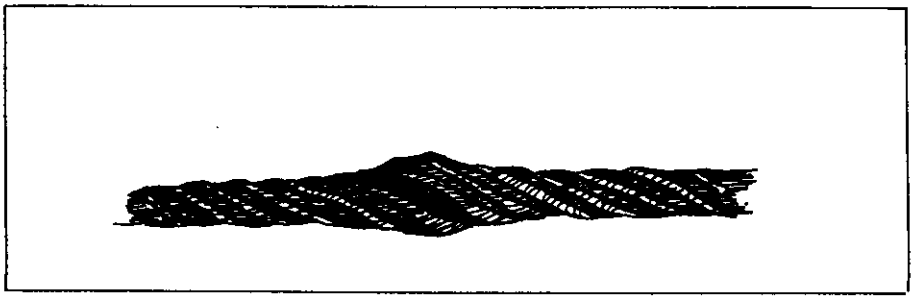


"Lay" as a unit of measure

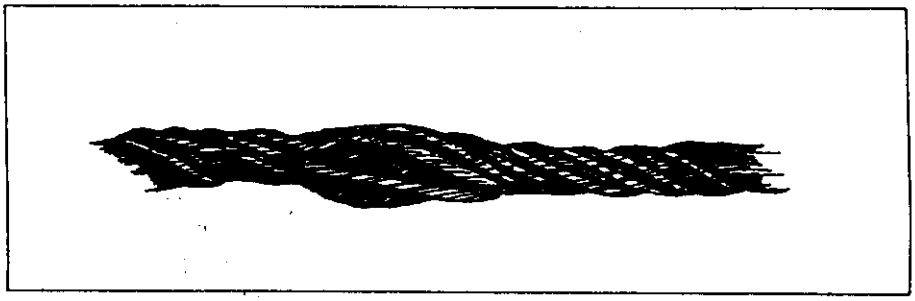
Cable Terms



Kinking



Crushing



Bird Caging

NUMBER: B090R1126-0

DATE: MARCH 12, 1993

SUPERSEDES:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Number: All Units

Ride: All Rides

Subject: Manufacturer's Specifications

Reference Standard:

ASTM - F24 Standards on Amusement Rides and Device

1. F853 Maintenance Procedures for Amusement Rides and Devices
2. F893 Inspection of Amusement Rides and Devices
3. F1159 Design and Manufacture of Amusement Rides and Devices

Chance Rides, Inc. at the time of the initial design and prototype manufacture determines by calculations and testing the appropriateness of the functional design criteria. The visual esthetics of the ride are also evaluated and together with the functional design criteria make up the manufacturer's design specifications. These design specifications are adhered to on all subsequently produced rides of the same style. Occasionally, through field experience, it becomes necessary to specify a modification to the original design specifications. Actual modification of the amusement ride to meet the change in design specifications can only be performed by qualified personnel, following the directives of a Chance Rides, Inc. Service Bulletin, Service Kit, or a Chance Rides, Inc. representative, where applicable.

Any modification performed on a Chance Rides, Inc. product outside the recommended directives established by Chance Rides, Inc. as referenced above, constitutes an unauthorized modification. Chance Rides, Inc. specifically disclaims any liability for losses associated with any unauthorized alteration and/or modification to any of its products. Chance Rides, Inc. will not issue letters for the operation of rides which do not meet the manufacturing specifications, this includes cases where the non-conforming modification is of an aesthetic nature only.

It is the responsibility of the individual inspector to thoroughly inspect the ride as deemed necessary, based on his knowledge and field experience to determine that the ride meets the manufacturer's specifications and/or is safe for operation.

NUMBER: B090R1108-0

DATE: MAY 1, 1992

SUPERSEDES:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Number: All Units - Chance Rides, Inc.
All Units - Chance Manufacturing Co., Inc.

Chance Rides, Inc. SPECIFICALLY DISCLAIMS ANY LIABILITY for losses associated with rides produced by Chance Manufacturing Company, Inc.

Ride: All Rides with Hydraulic Cylinders

Subject: Rod Clevis Bolt Warning Decal

Chance Rides, Inc. requires a warning decal to be in place on the clevises of all hydraulic cylinders equipped with screw-on clevises held by set screws or clamping bolts.

If your ride is equipped with hydraulic cylinders that have screw-on clevises with set screws or clamping bolts you are required to inspect the clevises for the warning decal. If the decal is missing, painted over or otherwise defaced, use the enclosed decal as a replacement, apply as shown on this bulletin. For additional decals call Chance Rides Customer Service Department and order part number 22203202.

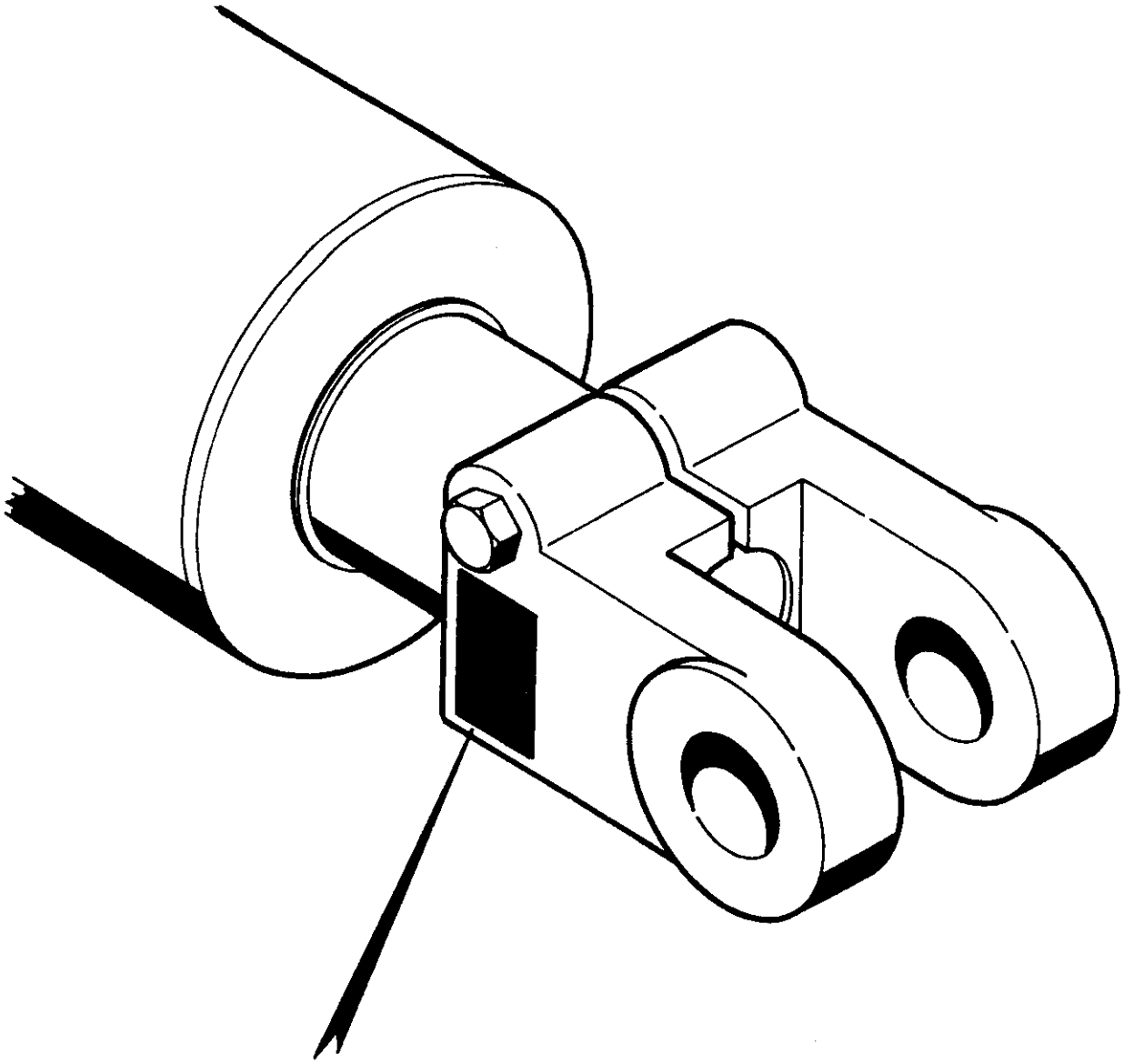
All work must be performed by qualified personnel, capable of understanding the function of the parts and their proper installation.

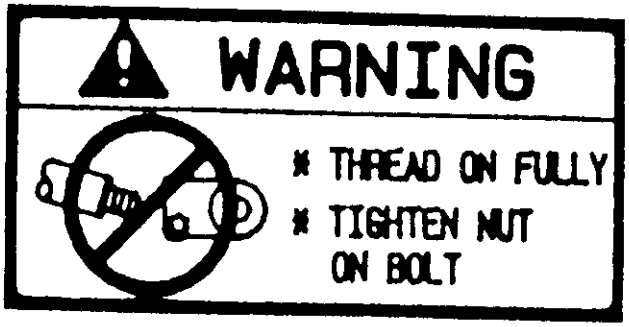
NOTICE

Use only those components authorized, specified or provided by Chance Rides, Inc.

Chance Rides, Inc. SPECIFICALLY DISCLAIMS ANY LIABILITY for losses associated with any unauthorized alterations and/or modifications or additions and installations of unauthorized components.

Factory and Sales Office: 4219 Irving · P.O. Box 12328 · Wichita, Kansas 67277-2328 · (316) 942-7411 · FAX: (316) 942-7416




WARNING
* THREAD ON FULLY
* TIGHTEN NUT ON BOLT

NUMBER: B090R1071-0

DATE: MAY 25, 1990

SUPERSEDES: 90-152

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Number: All Units - Chance Rides, Inc.
All Units - Chance Manufacturing Co., Inc.

Chance Rides, Inc. SPECIFICALLY DISCLAIMS ANY LIABILITY for losses associated with rides produced by Chance Manufacturing Company, Inc.

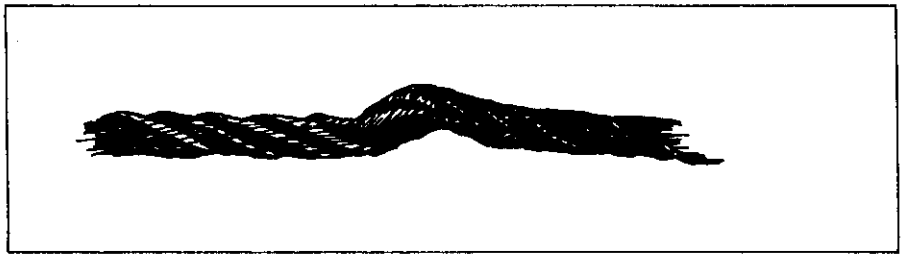
Ride: All Rides Using Cables Subject: Cable Inspection

Chance Rides, Inc. requires all owners of amusement rides produced by Chance Rides, Inc. which utilizes cables (wire rope) to inspect these cables weekly or at each set up, which ever occurs first. If cables are used to drive the equipment, or as the main support of the wright, they must be replaced if any of the following conditions exist. If cables are used in pairs, they must be replaced at the same time.

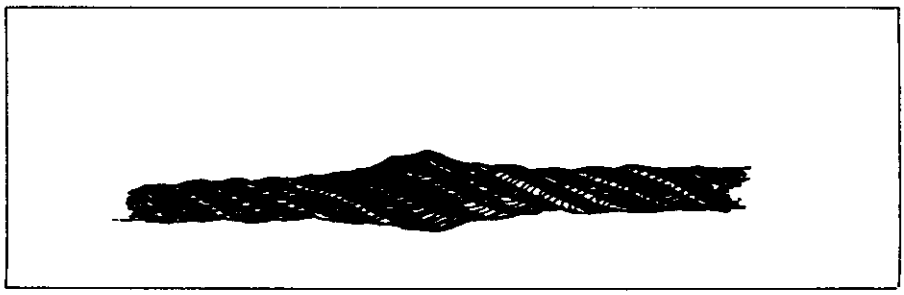
1. General evidence of severe corrosion.
   A. Rust appearing to stem from interior of cable
   B. Cable appears clean at present but previous corrosion is evident from pitted condition of wires.
2. Severe stretching occurring in a short section of cable, indicated by a marked reduction in the diameter of the cable.
3. Severe physical damage such as "kinking", "crushing", or "bird caging".
4. One strand being 75% broken through.
5. A number of wires, equal to the number in a strand, being broken in the length of one rope lay.

"Lay" as a unit of measure

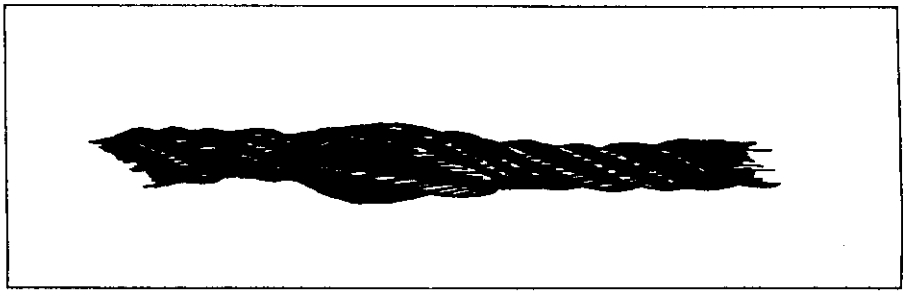
Cable Terms



Kinking



Crushing



Bird Caging

NUMBER: B090R1075-0

DATE: MAY 16, 1990

SUPERSEDES: 90-148C-00

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Number: All Units - Chance Rides, Inc.
All Units - Chance Manufacturing Co., Inc.

Chance Rides, Inc. SPECIFICALLY DISCLAIMS ANY LIABILITY for losses associated with rides produced by Chance Manufacturing Company, Inc.

Ride: All Rides

Subject: Replacement and torque requirements for functional load carrying capscrews

Capscrews used by CHANCE RIDES, INC. are classified as functional load carrying capscrews if:

- They are used as tension members in the erection or operation of a ride

  and/or

- They are required to resist shear through friction-type connections in the erection or operation of a ride

Capscrews are selected with consideration to grade, size and quantity, using joint capacities based on tightness torques of 60% of rated yield and group joint efficiency of 62.5%.

TORQUE REQUIREMENTS

Capscrews must be tightened to the torque values listed in the Torque Chart. These values were selected to produce a tightening torque range of 60% to 70% of proof load, when tightened with a hardened washer under the locknut or capscrew head (whichever is accessible for tightening). When the capscrew is tightened from the head end, apply anti-seize lubricant to the shank of the capscrew. When the threads are lubricated, use 10% less torque to tighten the capscrew.

DO NOT TIGHTEN CAPSCREWS OVER THE RECOMMENDED TORQUE. This can damage the capscrew, due to variances in coefficients of friction and torque wrench accuracy.

Always use a torque wrench. It is impossible to accurately measure the tightness of a capscrew by other methods. Torque wrenches must checked for accuracy twice each operating season.

CAPSCREW GRADES

CHANCE RIDES, INC. uses only Grade 5 or better capscrews and Grade 8 locknuts, with A325 hardened washers for functional loads. The Grade Markings Chart shows the capscrew markings to be found on Chance rides. The manufacturers identification symbols must be present on all functional load carrying capscrews.

CHANCE RIDES, INC. requires the use of cold-formed hex head capscrews with rolled threads. Hex bolts and hot-formed hex head capscrews are not recommended because they may machined threads, and can have die seams along the shank.

NEVER REPLACE CAPSCREWS OR LOCKNUTS WITH PARTS OF A LESS GRADE, OR OF DIFFERENT LENGTHS THAN THOSE SHOWN IN THE CHANCE PARTS CATALOG.

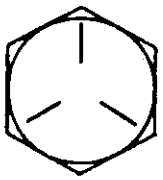
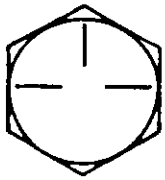
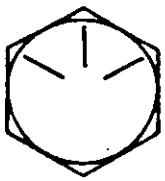
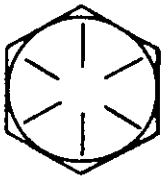
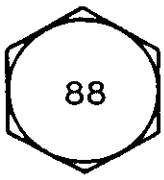
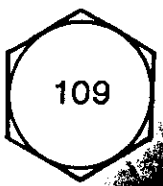
REPLACEMENT OF CAPSCREWS AND LOCKNUTS

When permanently installed capscrews and locknuts are disassembled for repair or adjustment, they must be replaced if they have been in service over five (5) years, or corrosion, or other damage requires over-torquing for removal. If a torque wrench is not used to measure excessive removal torques, the capscrews and locknuts must be replaced.

Capscrews and locknuts which are frequently disassembled for portability must be replaced each operating season. If the capscrews and locknuts become damaged, corroded or require excessive torque for removal, they must be replaced. If a torque wrench is not used to measure excessive removal torques, the capscrews and locknuts must be replaced.

GRADE MARKINGS
For Functional Load Carrying Capscrews

Manufacturer's identification symbols must be present on all capscrews.

CORRECT MARKINGS	EXAMPLES OF UNACCEPTABLE MARKINGS
SAE J429 GRADE 5 MEDIUM CARBON 81,000 YIELD 	 GRADE 5.1 LOW CARBON  GRADE 5.2 LOW CARBON MARTENSITIC
ASTM A325 TYPE 1 MEDIUM CARBON LONGER SHANK & SHORTER THREAD LENGTH THAN GRADE 5 81,000 YIELD  ASTM A 325 TYPE 3 CORROSION RESISTING LONGER SHANK & SHORTER THREAD LENGTH THAN GRADE 5 81,000 YIELD 	 ASTM A325 TYPE 2 LOW CARBON MARTENSITIC
SAE J429 GRADE 8 MEDIUM CARBON 130,000 YIELD 	 ISO R898 CLASS 8.8 MEDIUM CARBON 92,000 YIELD 
ASTM A490 ALLOY STEEL LONGER SHANK & SHORTER THREAD LENGTH THAN GRADE 8 130,000 YIELD 	 ISO R 898 CLASS 10.9 ALLOY STEEL 130,000 YIELD 

Torque Chart

TORQUES FOR FUNCTIONAL LOAD CARRYING COLD FINISHED HEX HEAD CAPSCREWS WITH DRY ROLLED THREADS, USED WITH LOCKNUTS (SEE NOTE 3), AND TIGHTENED WITH AN ASTM A325 HARDENED WASHER UNDER THE CAPSCREW OR LOCKNUT HEAD (WHICHEVER IS ACCESSIBLE FOR TIGHTENING).

THIS TORQUE RANGE WILL DEVELOP 60% TO 70% OF PROOF LOAD.

REFER TO "REPLACEMENT OF CAPSCREWS AND LOCKNUTS" FOR CONDITIONS REQUIRING REPLACEMENT.

SIZE DIAMETER - THREADS/ INCH	FOOT POUND TORQUE RANGE (SEE NOTES 1 AND 2) WITH LOCKNUT AND HARDENED WASHER	
	SAE J429 GRADE 5 ASTM A325	SAE J429 GRADE 8 ASTM A490
1/4 - 20	5-6	7-8
1/4 - 28	6-7	8-10
5/16 - 18	11-13	15-18
5/16 - 24	12-15	17-21
3/8 - 16	19-24	27-33
3/8 - 24	22-27	31-38
7/16 - 14	30-35	45-55
7/16 - 20	35-40	50-60
1/2 - 13	50-60	65-80
1/2 - 20	55-65	75-90
5/8 - 11	95-115	130-160
5/8 - 18	105-130	150-180
3/4 - 10	165-200	235-285
3/4 - 16	185-225	260-320
7/8 - 9	270-325	380-460
7/8 - 14	295-360	415-505
1 - 8	400-490	565-690
1 - 12	440-535	620-755
1-1/8 - 7	495-600	800-975
1-1/8 - 12	555-675	900-1095
1-1/4 - 7	700-850	1135-1380
1-1/4 - 12	775-940	1255-1525
1-1/2 - 6	1215-1480	1975-2395
1-1/2 - 12	1370-1660	2220-2700

NOTES:

1. USE ANTI-SEIZE LUBRICANT ON CAPSCREW SHANK WHEN TIGHTENED FROM HEAD END.
2. USE 10% LESS TORQUE WHEN ANTI-SEIZE OR OTHER LUBRICANT IS USED ON THREADS.
3. USE SAME TORQUE RANGE FOR HOLES TAPPED IN STEEL.

NUMBER: B090R1075-0

DATE: MAY 16, 1990

SUPERSEDES: 90-148C-00

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Number: All Units - Chance Rides, Inc.
All Units - Chance Manufacturing Co., Inc.

Chance Rides, Inc. SPECIFICALLY DISCLAIMS ANY LIABILITY for losses associated with rides produced by Chance Manufacturing Company, Inc.

Ride: All Rides

Subject: Replacement and torque requirements for functional load carrying capscrews

Capscrews used by CHANCE RIDES, INC. are classified as functional load carrying capscrews if:

- They are used as tension members in the erection or operation of a ride

  and/or

- They are required to resist shear through friction-type connections in the erection or operation of a ride

Capscrews are selected with consideration to grade, size and quantity, using joint capacities based on tightness torques of 60% of rated yield and group joint efficiency of 62.5%.

TORQUE REQUIREMENTS

Capscrews must be tightened to the torque values listed in the Torque Chart. These values were selected to produce a tightening torque range of 60% to 70% of proof load, when tightened with a hardened washer under the locknut or capscrew head (whichever is accessible for tightening). When the capscrew is tightened from the head end, apply anti-seize lubricant to the shank of the capscrew. When the threads are lubricated, use 10% less torque to tighten the capscrew.

DO NOT TIGHTEN CAPSCREWS OVER THE RECOMMENDED TORQUE. This can damage the capscrew, due to variances in coefficients of friction and torque wrench accuracy.

Always use a torque wrench. It is impossible to accurately measure the tightness of a capscrew by other methods. Torque wrenches must checked for accuracy twice each operating season.

CAPSCREW GRADES

CHANCE RIDES, INC. uses only Grade 5 or better capscrews and Grade , locknuts, with A325 hardened washers for functional loads. The Grade Markings Chart shows the capscrew markings to be found on Chance rides. The manufacturers identification symbols must be present on all functional load carrying capscrews.

CHANCE RIDES, INC. requires the use of cold-formed hex head capscrews with rolled threads. Hex bolts and hot-formed hex head capscrews are not recommended because they may machined threads, and can have die seams along the shank.

NEVER REPLACE CAPSCREWS OR LOCKNUTS WITH PARTS OF A LESS GRADE, OR OF DIFFERENT LENGTHS THAN THOSE SHOWN IN THE CHANCE PARTS CATALOG.

REPLACEMENT OF CAPSCREWS AND LOCKNUTS

When permanently installed capscrews and locknuts are disassembled for repair or adjustment, they must be replaced if they have been in service over five (5) years, or corrosion, or other damage requires over-torquing for removal. If a torque wrench is not used to measure excessive removal torques, the capscrews and locknuts must be replaced.

Capscrews and locknuts which are frequently disassembled for portability must be replaced each operating season. If the capscrews and locknuts become damaged, corroded or require excessive torque for removal, they must be replaced. If a torque wrench is not used to measure excessive removal torques, the capscrews and locknuts must be replaced.

NUMBER: B090R1056-0

DATE: Feb. 9, 1990

SUPERSEDES:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Number: All Units

Ride: All Rides

Subject: General Safety - Taper Pins

It has come to the attention of Chance Rides, Inc. that the taper pins being used with amusement rides are subject to deterioration due to improper use and wear. Chance Rides, Inc. specifies certain pins for certain applications on amusement rides. These pins have been developed over a period of years, taking into account size, design, material and hardness characteristics. Only pins specified by Chance Rides, Inc. may be used on rides manufactured by Chance Rides, Inc. These pins are identified as shown in Illustration A.

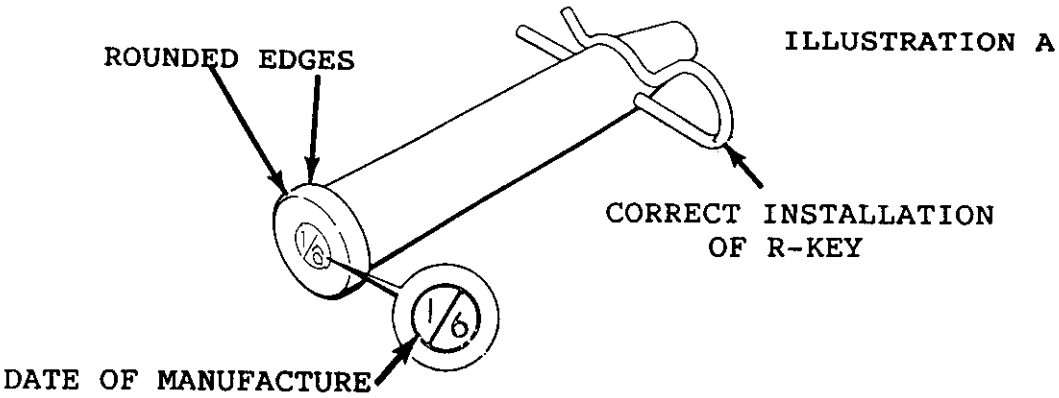
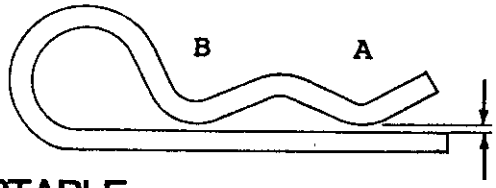


ILLUSTRATION A

Care should be taken when installing and removing taper pins. Since these pins are hardened (as are hammers and punches) care must be taken to strike the pin straight on. Striking a pin at an angle could cause the pin to chip resulting in bodily injury. For this reason **APPROVED SAFETY GLASSES OR GOGGLES MUST BE WORN AT ALL TIMES** when taper pins are being installed or removed. Any taper pin which is chipped, bent, or mushroomed on either end must be discarded and replaced with a new pin.

Factory and Sales Office: 4219 Irving · P.O. Box 12328 · Wichita, Kansas 67277-2328 · (316) 942-7411 · FAX: (316) 942-7416

All keepers (R-keys, hair pins, lynch pins, etc.) must be inspected fo wear. If any keeper is bent out of shape or sprung, as shown i Illlustration B, it must be replaced.

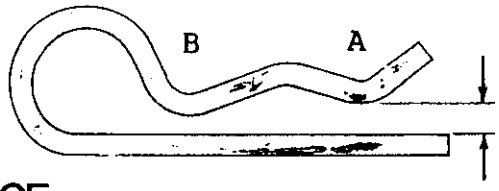


ACCEPTABLE

DIMENSION A

EQUALS DIMENSION

B IN A RELAXED POSITION



REPLACE

DIMENSION A IS

GREATER THAN DIMENSION

B IN A RELAXED POSITION.

NEVER ATTEMPT TO BEND A HAIR PIN BACK INTO SHAPE.
REPLACE IT WITH A NEW PART.

Chance Rides, Inc. recognizes and recommends the safety procedures specified in ASTM Standards F770 Operation Procedures for Amusement Rides and Devices and F853 Maintenance Procedures for Amusement Rides and Devices.

All work must be performed by qualified personnel, capable of understanding the function of the parts and their proper installation.

NOTICE

USE ONLY THOSE COMPONENTS AUTHORIZED, SPECIFIED OR PROVIDED BY THE MANUFACTURER. IF ANY ALTERATIONS AND/OR MODIFICATIONS OR ADDITIONS AND INSTALLATIONS OF UNAUTHORIZED COMPONENTS ARE MADE TO THE ORIGINAL DESIGN WITHOUT THE MANUFACTURER'S EXPLICIT WRITTEN CONSENT OR WITHOUT DIRECT SUPERVISION BY A MANUFACTURER'S REPRESENTATIVE, CHANCE RIDES, INC. MAKES NO CLAIM AS TO THE INTEGRITY OF THE ALTERED OR MODIFIED RIDE.

Number: B090R1049-0

Date: Sept. 15, 1989

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Number: All Units

Ride: ALL RIDES

Subject: Crowd Controls

Safety is a combined responsibility and effort of the ride manufacturer and the owner/operator. In conjunction with the safety features provided by the manufacturer, the following safety precautions must be observed by the owner/operator.

1. Inspect all entrance and exit constraints for installation and operation as per the manufacturer's specifications.

2. Inspect all entrances and exits for proper installation as per the manufacturer's specifications.

3. Affix safety warning signs and/or decals at all exits and/or entrances to warn persons of hazards. Size and color of signs and/or decals should be such that all wording is easily read.

4. Each ride should be staffed with an adequate number of trained personnel to maintain a safe operation.

5. All operators should be instructed on ride safety and the importance of crowd control around the ride. The safety items should include, but not be limited to, the following:

    a. Securing of fencing to prevent persons from entering a hazardous or secured area.
    b. Preventing persons from hanging over or sitting on the fence in a hazardous or secured area.
    c. Be particularly observant of small children.
    d. Be thoroughly instructed as to the function of all operating controls, and all emergency procedures.
    e. All ride personnel must stay clear of hazardous areas until the ride has come to a complete stop. These hazards include, but are not limited to, moving components of the ride.
    f. The ride personnel must be aware of the entrance and exit areas at all times, and must not allow persons to enter these areas while the ride is in motion, nor shall ride personnel allow persons to enter other hazardous or secured areas.

6. Persons obviously intoxicated or under the influence of drugs must not be allowed access to the ride.

7. All inspection and work must be performed by qualified personnel capable of understanding the function of the parts and their proper installation.

NOTICE

USE ONLY THOSE COMPONENTS AUTHORIZED, SPECIFIED OR PROVIDED BY THE MANUFACTURER. IF ANY ALTERATIONS AND/OR MODIFICATIONS OR ADDITIONS AND INSTALLATION OF UNAUTHORIZED COMPONENTS ARE MADE TO THE ORIGINAL DESIGN WITHOUT THE MANUFACTURER'S EXPLICIT WRITTEN CONSENT OR WITHOUT DIRECT SUPERVISION BY A MANUFACTURER'S REPRESENTATIVE, CHANCE RIDES, INC. MAKES NO CLAIMS AS TO THE INTEGRITY OF THE ALTERED OR MODIFIED RIDE.

Number: B090R1022-0

Date: March 21, 1988

Supersedes:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Numbers:

Ride: **ALL**

Subject: **NON-DESTRUCTIVE TESTING**

REFERENCE STANDARD:

1. **ASTM-F24 Standards on Amusement Rides and Devices**
   a. **F846-86 Testing Performance of Amusement Rides and Devices**
   b. **F853-86 Maintenance Procedures for Amusement Rides and Devices**
   c. **F893-87 Inspection of Amusement Rides and Devices**

Chance Rides at the time of design and manufacture determines by calculations and testing of a prototype amusement ride the appropriateness for use, of not only the parts, but the entire system of a newly designed ride. These calculations and tests are utilized to, as feasibly as possible, determine the requirements for expected design life of major components. Based on this design criteria, Chance Rides does not identify critical components on amusement rides to be singled out for non-destructive testing.

If through field experience there is an indication that a structural or mechanical problem may develop on rides currently operating, Chance Rides will notify owners by bulletin of the recommended procedures to inspect or correct the possible problem. Any possible defect which could affect the continued safe or proper operation of the ride should be reported immediately to the manufacturer by the owner/operator. This information is necessary so that a determination can be made for either the repair or replacement of possible defective parts.

Field repairs should not be undertaken without the approval and proper instructions from the manufacturer and should be performed by qualified personnel. These persons should have a complete understanding of both the component's function and the manufacturer's instructions.

It is the responsibility of the individual inspector to thoroughly inspect the ride as he deems necessary based on his knowledge and field experience and manufacturer's recommendations. If the inspector finds an area or component that could be a problem, structural or otherwise, the factory should then be notified. It is then the responsibility of the inspector to ensure that the manufacturer's recommendations for repair, replacement or otherwise have been completed and are in compliance with the required specifications.

Load testing is a destructive form of testing and is not recommended by the manufacturer as per our bulletin #B090R1002-0 dated May 14, 1986.

Number: B090R1002-0

Date: May 14, 1986

Supersedes:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Numbers:

Ride: ALL RIDES

Subject: Field Performance Testing of Amusement Rides

The following specifications conform with ASTM F846 standard guide for Testing Performance of Amusement Rides and Devices, in effect on date of ride manufacture.

1. Erection or Installation Testing: Each erection or installation of a ride shall be given an inspection prior to carrying passengers that shall include but not be limited to the following:

A. Determine that ride has been erected according to set-up procedures included in the operations manual.
B. Inspect field inspection points listed in the Field Inspection Guide.
C. Visual check of all passenger carrying devices including restraint devices and latches, and the pins and capscrews securing them.
D. Visual inspection of entrances, exits, stairways and ramps and devices securing them.
E. Test of all communications equipment necessary for operation of the ride or device.
F. Operate ride to determine that direction of travel conforms to the information plate, ride manual, field inspection guide or specification sheet.
G. Operate the ride for a minimum of three ride cycles to determine that the ride speed does not exceed the speed specified in the information plate, ride manual, field inspection guide or specification sheet.

2. Daily Pre-Opening Inspection: This inspection shall include a daily inspection of all items as specified in the previous Section 1. Erection or Installation Testing.

3. Documented Field Performance and Operational Testing: Documentation and certification shall be performed by a person who by demonstrated education and field experience is knowledgeable with the construction, erection, operation, maintenance and repair of amusement rides.

4. Operational Load Testing: Any operational test including load testing performed on a ride shall be completely nondestructive in nature. Overload testing exceeding the rated limits listed on the information plate, operation manual, field inspection guide or specifications sheet shall be deemed inappropriate. Where maximum total passenger weight is not readily available passenger capacity multiplied by 170 pounds per adult and/or 90 pounds per child may be used.

Nondestructive testing with inert loads can be accomplished only with special care as to placement of the load so that it is centered both vertically and horizontally as would be the load of the passenger it replaces. Extra seat reinforcement must be used to offset any load concentration created. Such tests shall be documented and certified as nondestructive by the person making the test and the agency requiring it. Results of all load tests shall be communicated to the factory upon completion by the Certifying Agency.

Conducting a nondestructive operational load test assures the testing agency only that it will carry a given load in a given way at a given moment and in no way assures future safety of the ride.

Conducting a destructive load or overload test also assures the testing agency that it will carry a given load in a given way at a given moment and in no way assures future safety of the ride. However, it also introduces the probability of inflicting serious irreparable damage to the ride that may or may not be apparent at the time of the test.

We consider inert load testing of any nature appropriate only for situations requiring experimental development of stress-strain testing during prototype development. A certificate of load test on the prototype and certification that each production ride met the design criteria when it was manufactured is available from the factory upon request.