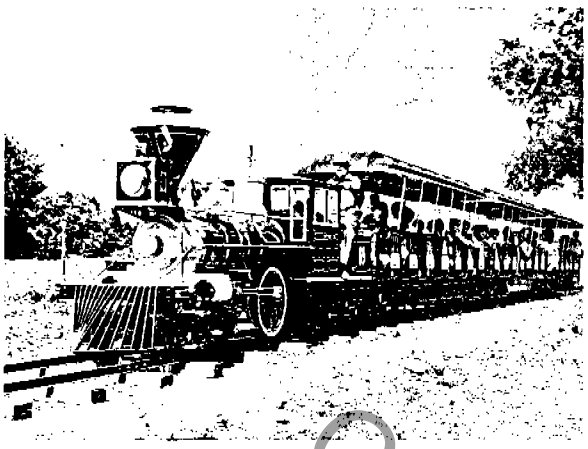
SPECIFICATIO

MFG: CHANCE RIDES, INC.
NAME: C.P. HUNTINGTON
TYPE: NON-KIDDIE

This ride conforms with all applicable ASTM amusement ride standards in effect on the date of manufacture.



1863 COACHES

BRAKES
Air brakes on all wheels, built-in emergency system applies all brakes if loss of air pressure occurs.

SEATING
Number of seats 7
Maximum number of passengers per seat ..... 2 adults or 3 children
Maximum passenger weight per seat ..... 340 lbs.
Maximum total number of passengers per coach ..... 14 adults or 21 children (loading from either side)
Maximum total passenger weight ..... 2080 lbs.
Minimum passenger height ..... 42 in. (unaccompanied by adult)

WEIGHT (empty) ..... 2,700 lbs.

TRACK GAUGE ..... 24 in.

MINIMUM TRACK CURVE RADIUS ..... 50 ft.

OPTIONS

PA SYSTEM: Transistor type amplifier controls and microphone installed in locomotive; 3 waterproof speakers in each coach.

TRIM: Chrome in place of brass.

DOME LIGHTS: Two dome lights per coach, controlled from locomotive.

COACH TOP: Cloth in place of fiberglass.

LOCOMOTIVE

ENGINE
Teledyne Continental industrial water-cooled engine
Number of cylinders ..... 4 (in-line)
Displacement ..... 165 cu. in.
Type of fuel ..... Gasoline or diesel
Maximum horsepower rating at governed speed
Gasoline engine ..... 64 @ 2400 rpm
Diesel engine ..... 55 @ 2400 rpm
Continuous horsepower rating
Gasoline engine ..... 51 @ 2400 rpm
Diesel engine ..... 47 @ 2400 rpm

TRANSMISSION
Funk Reverse-O-Matic through Chance-built reduction box and 90° drive gearbox to all 8 drive wheels.

BRAKES
Air brakes on all wheels, engine driven Midland air compressor, 3.61 cu. ft. air storage tank (ASME tested and certified tank).

OPERATOR CONTROLS
Directional control (combined throttle and transmission control), keyed ignition switch (gasoline engine), keyed ignition with pre-heat for glow plugs (diesel engine), remote throttle and choke (gasoline engine), smoker, bell, sander, PA, headlight, air whistle.

INSTRUMENTATION
Stewart-Warner gauges: water temperature, ammeter, oil pressure, air pressure, hour meter, pre-heat indicator light (diesel engine).

WEIGHT ..... 6,100 lbs.

TRACK GAUGE ..... 24 in.

MINIMUM TRACK CURVE RADIUS ..... 50 ft.

MAXIMUM RIDE SPEED ..... 12 mph

MAXIMUM RECOMMENDED GRADE ..... 3% (see "Grade Chart")

C.P. HUNTINGTON

Specifications are effective as of publication date. Because we try to improve every Chance Rides product, these specifications are subject to change without notice.

GRADE CHART

This chart is to be used as a **GUIDE ONLY.** The information contained herein is not to be used verbatim in determining what grades can be utilized for your particular installation. If there are any questions concerning grades, etc., about your installation, contact Chance Rides, Inc. for assistance.

PER CENT GRADE OR RISE PER 100 FT.	ANGLE DEGREES – & MIN.	NUMBER OF COACHES WITH 14 PASSENGERS EACH	
		NORMAL RAILS 15	SANDED RAILS 25
1	0°-34′	10	10
2	1°-9′	8	10
3	1°-43′	5	9
4	2°-17′	3	6
5	2°-52′	2	5
6	3°-26′	1	4
7	4°-0′	1	3
8	4°-34′	1	2
9	5°-9′	—	2
10	5°-43′	—	1
11	6°-17′	—	1
12	6°-51′	—	1
13	7°-24′	—	1
14	7°-58′	—	—
15	8°-32′	—	—
Maximum Draw Bar Pull		915 lbs.	1525 lbs.

PASSENGER CAPACITY AND LENGTH

28 PASSENGER
One locomotive and two coaches ..... 51 ft. 4 in.

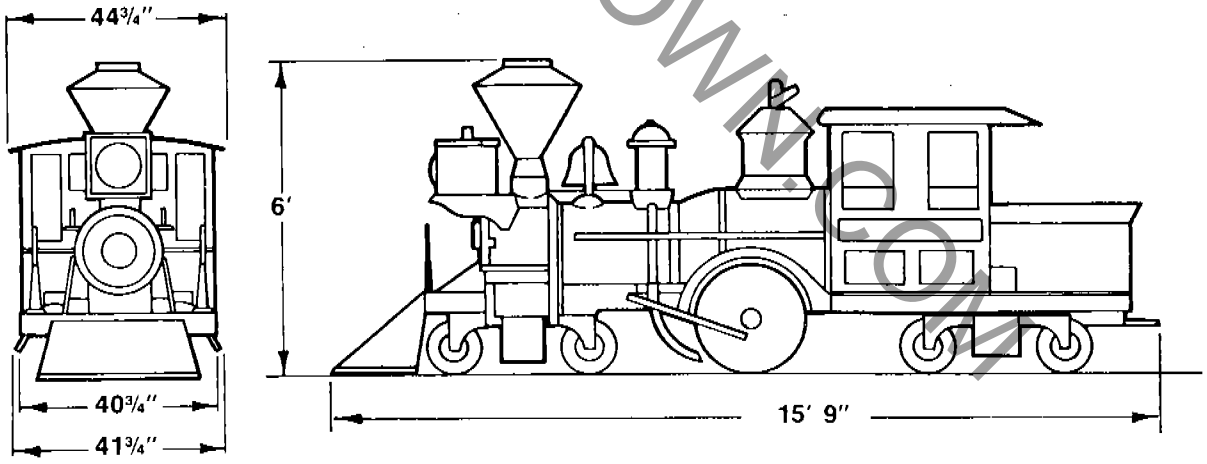
42 PASSENGER
One locomotive and three coaches ..... 69 ft. 2 in.

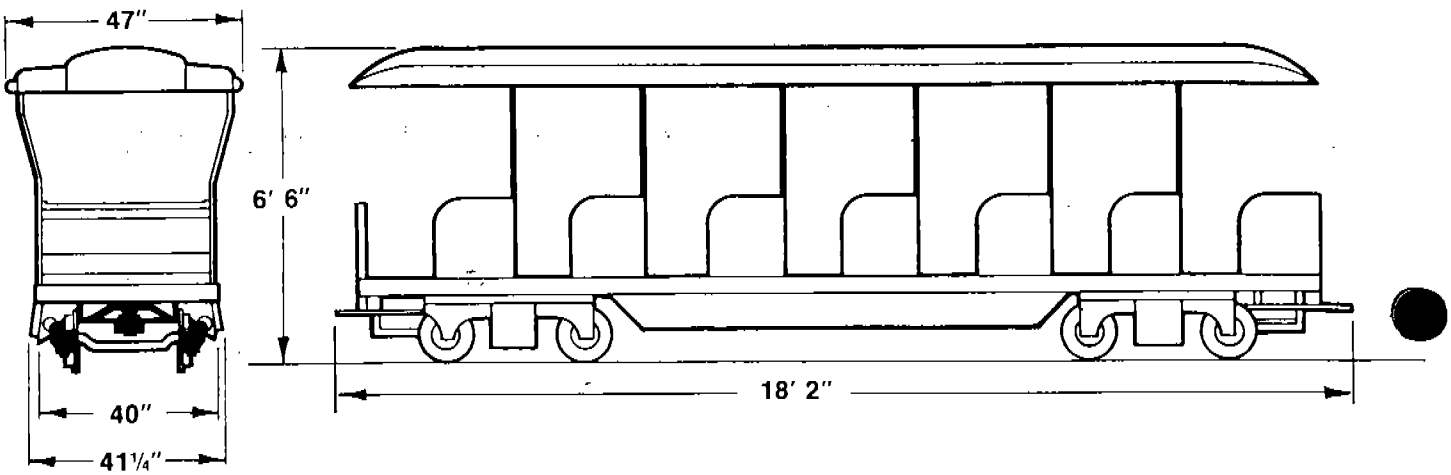
56 PASSENGER
One locomotive and four coaches ..... 87 ft.

70 PASSENGER
One locomotive and five coaches .... 104 ft. 10 in.

84 PASSENGER
One locomotive and six coaches ..... 122 ft. 8 in.

98 PASSENGER
One locomotive and seven coaches ... 140 ft. 6 in.





C.P. HUNTINGTON

Ride Serial Number _____ Owner _____ Date _____

FIELD INSPECTION POINTS

1. ( ) Test air and manual brakes for proper operation. Check brake shoes for wear and proper adjustment.

2. ( ) Check the air system for leaks. Check air tanks and drain water.

3. ( ) Check capscrews in hitch splice bars for tightness (Bulletin B090R1075-0).

4. ( ) Inspect exhaust system for leaks.

5. ( ) Inspect fuel system for leaks (including smoker fuel tank, if equipped).

6. ( ) Inspect wheels for worn flanges.

7. ( ) Check condition of seats.

8. ( ) Inspect all engine covers, the operator's seat and drive shaft cover for proper installation.

9. ( ) Inspect all electrical wiring for short circuits, bad wires, etc.

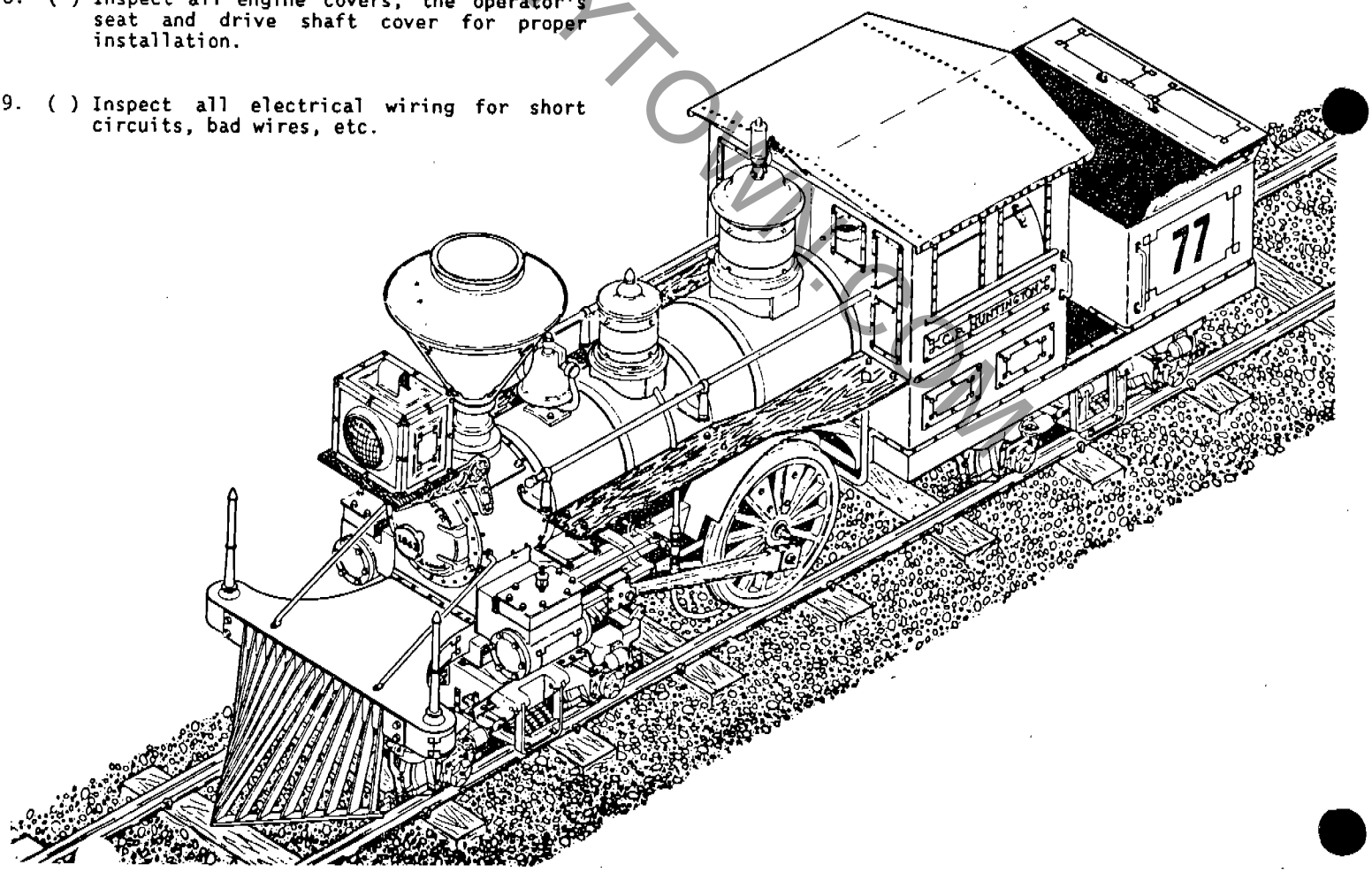
10. ( ) Check overall track layout for grade and curve radius recommendations in CHANCE operation manual. Inspect trestles and tunnels, where applicable.

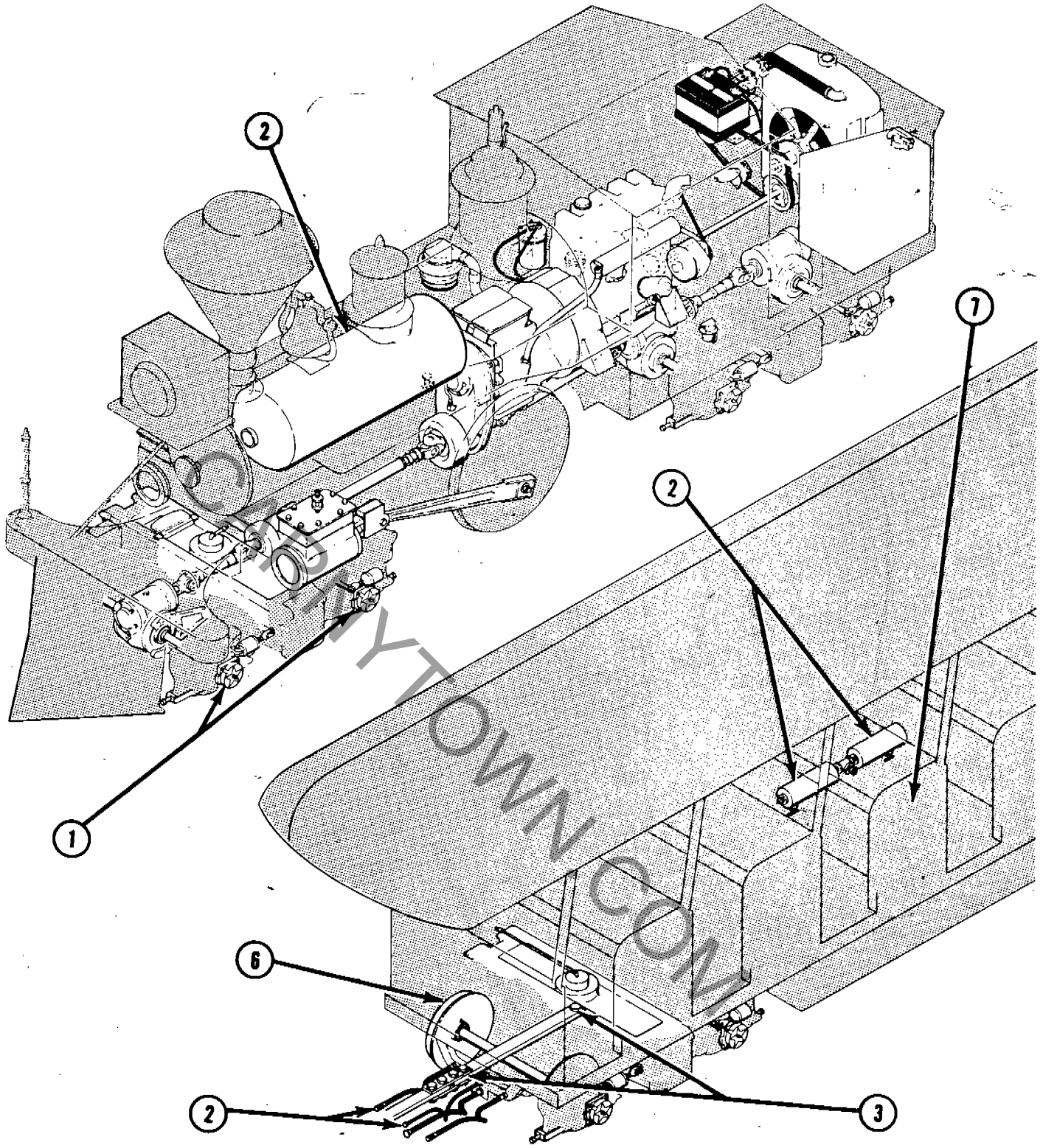
11. ( ) Check for correct track gauge over entire layout.

12. ( ) Check overall condition of track, including ties, spikes, ballast and track splice plates.

13. ( ) Check operation of automatic and/or manual turnout switches.

14. ( ) Check operation of crossing signals and/or crossing gates.





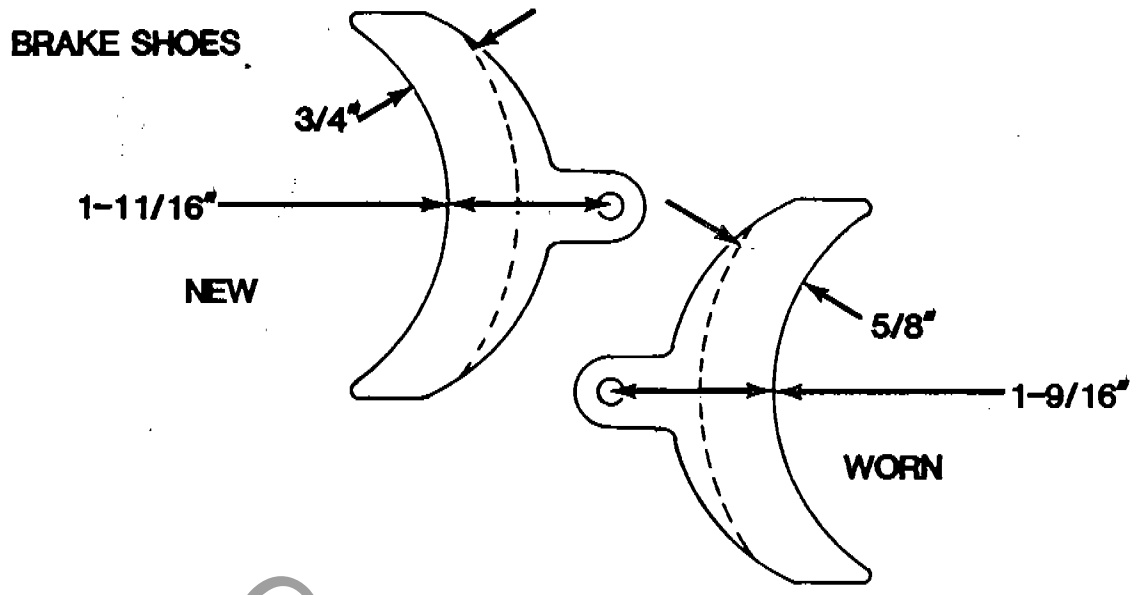
1. ( ) Test air and manual brakes for proper operation. Check brake shoes for wear and proper adjustment.

2. ( ) Check the air system for leaks. Check air tanks and drain water.

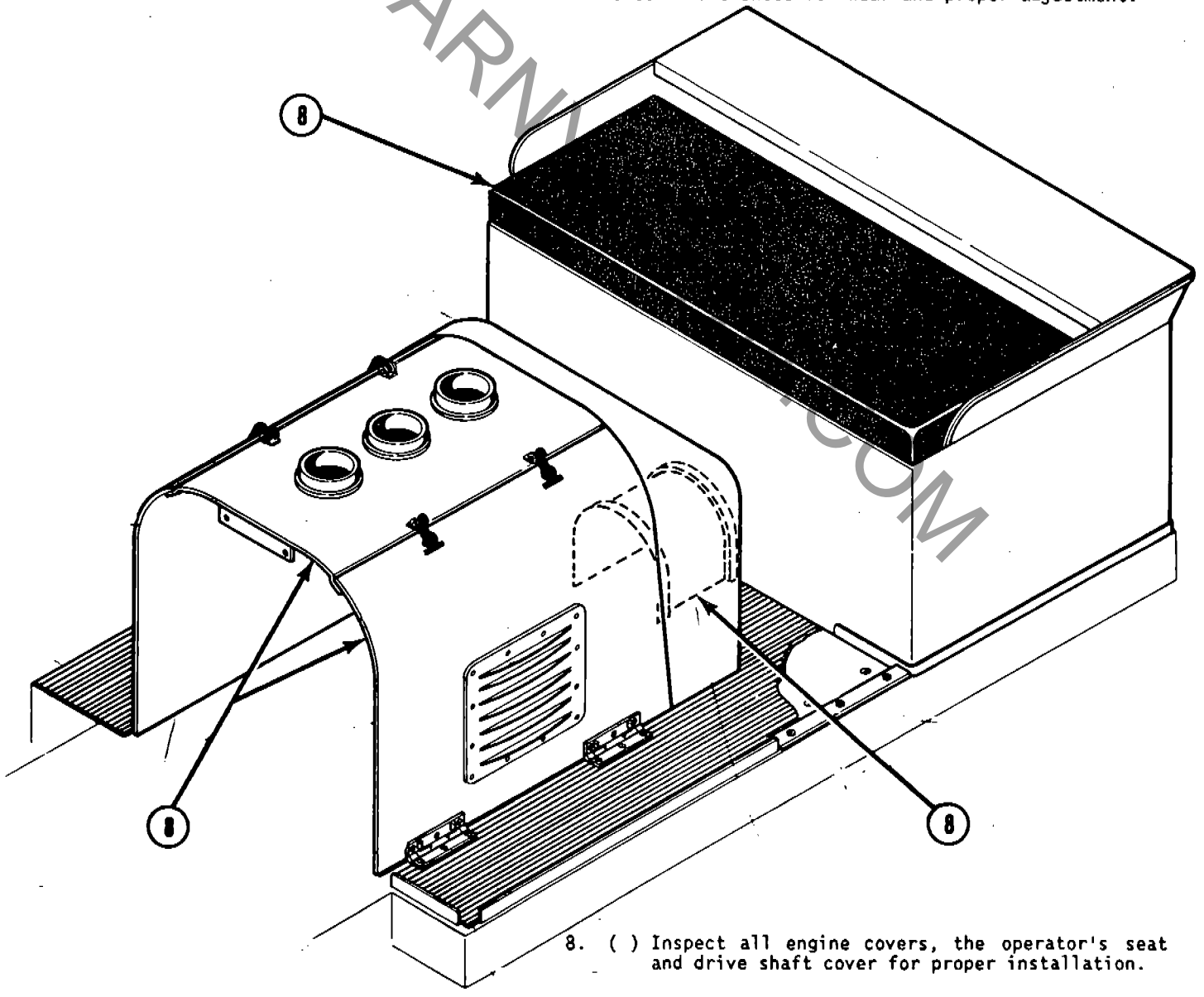
3. ( ) Check capscrews in hitch splice bars for tightness (Bulletin B090R1075-0).

6. ( ) Inspect wheels for worn flanges.

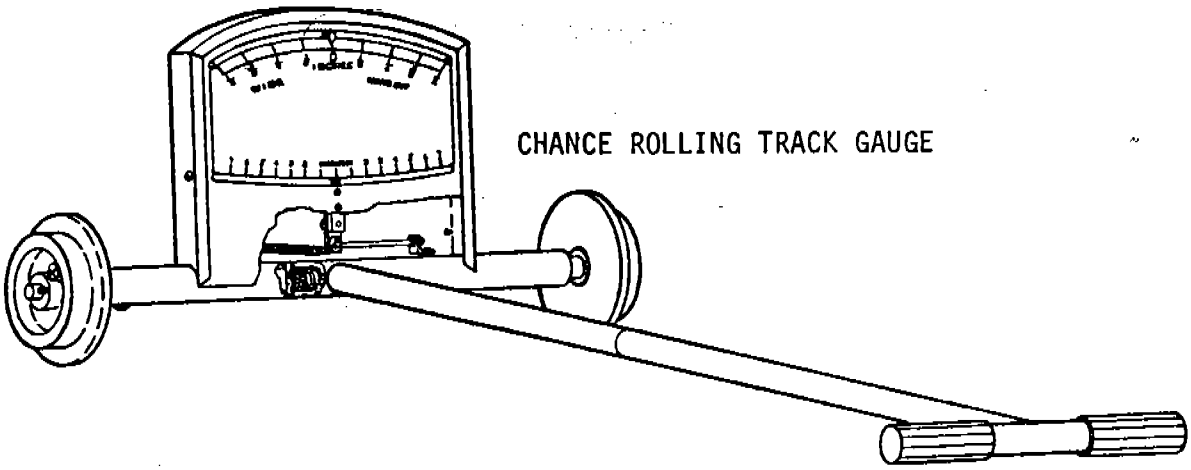
7. ( ) Check condition of seats.



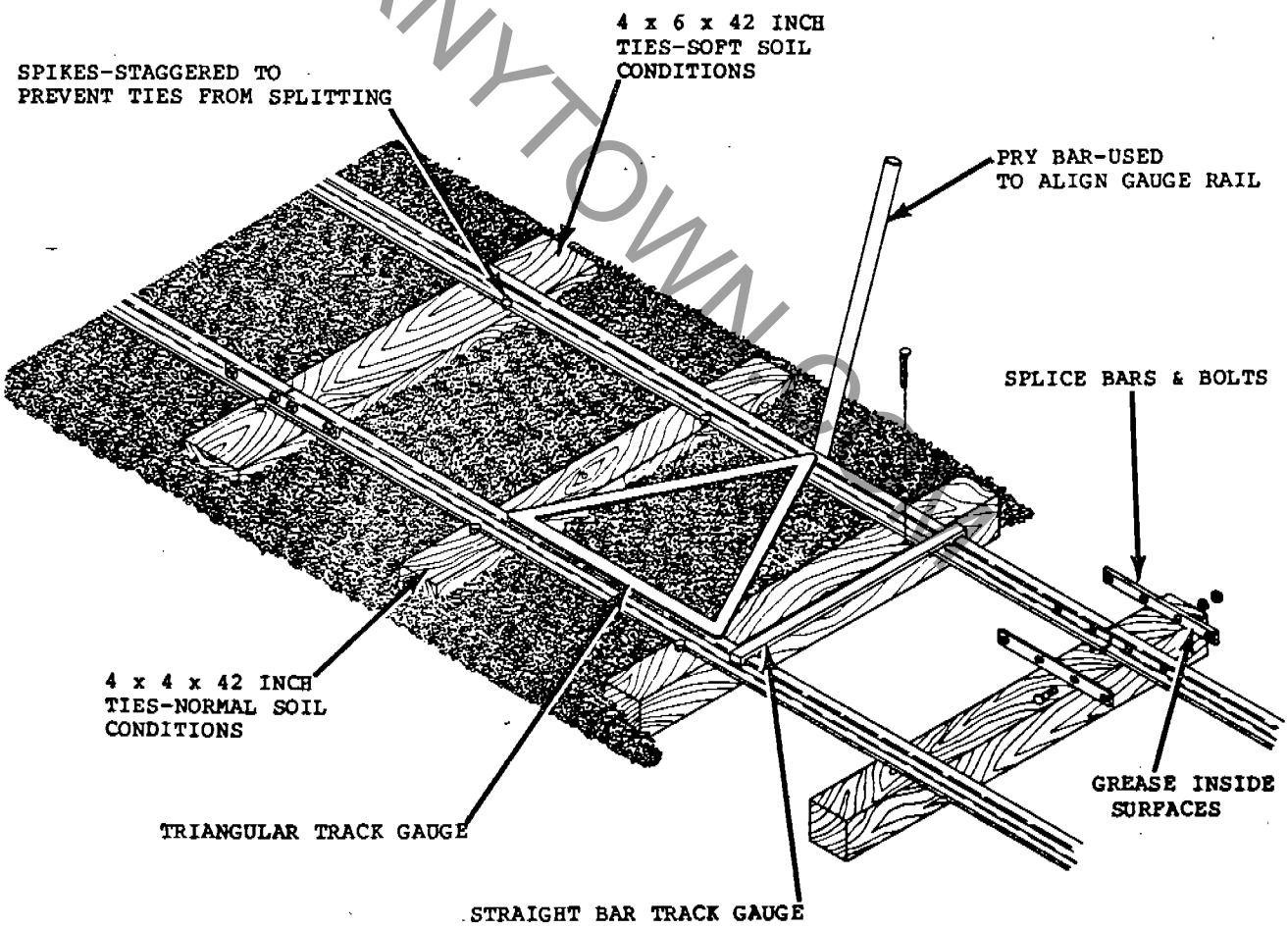
1. ( ) Test air and manual brakes for proper operation. Check brake shoes for wear and proper adjustment.



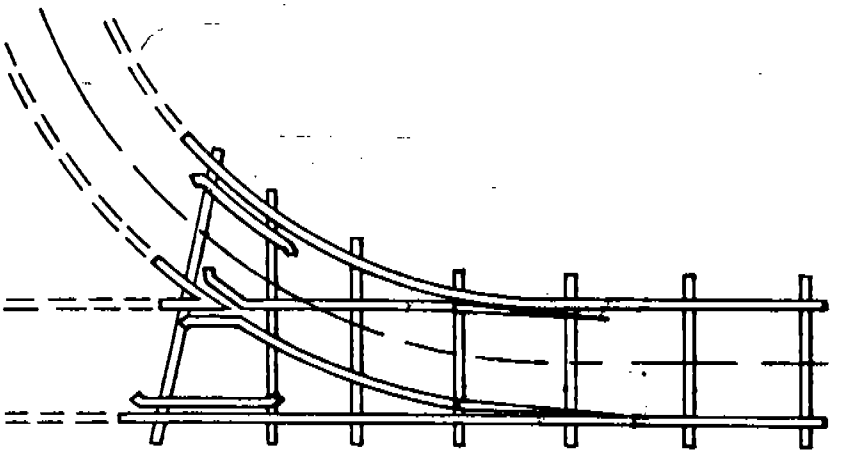
8. ( ) Inspect all engine covers, the operator's seat and drive shaft cover for proper installation.



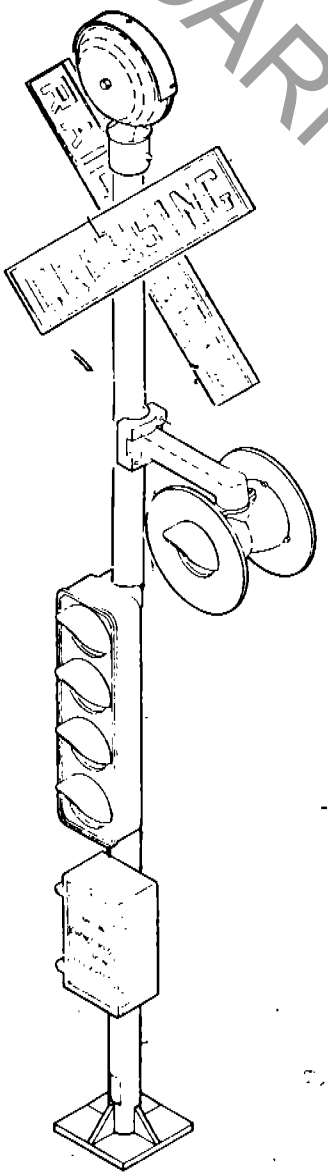
11. ( ) Check for correct track gauge over entire layout.



12. ( ) Check overall condition of track, including ties, spikes, ballast and track splice plates.

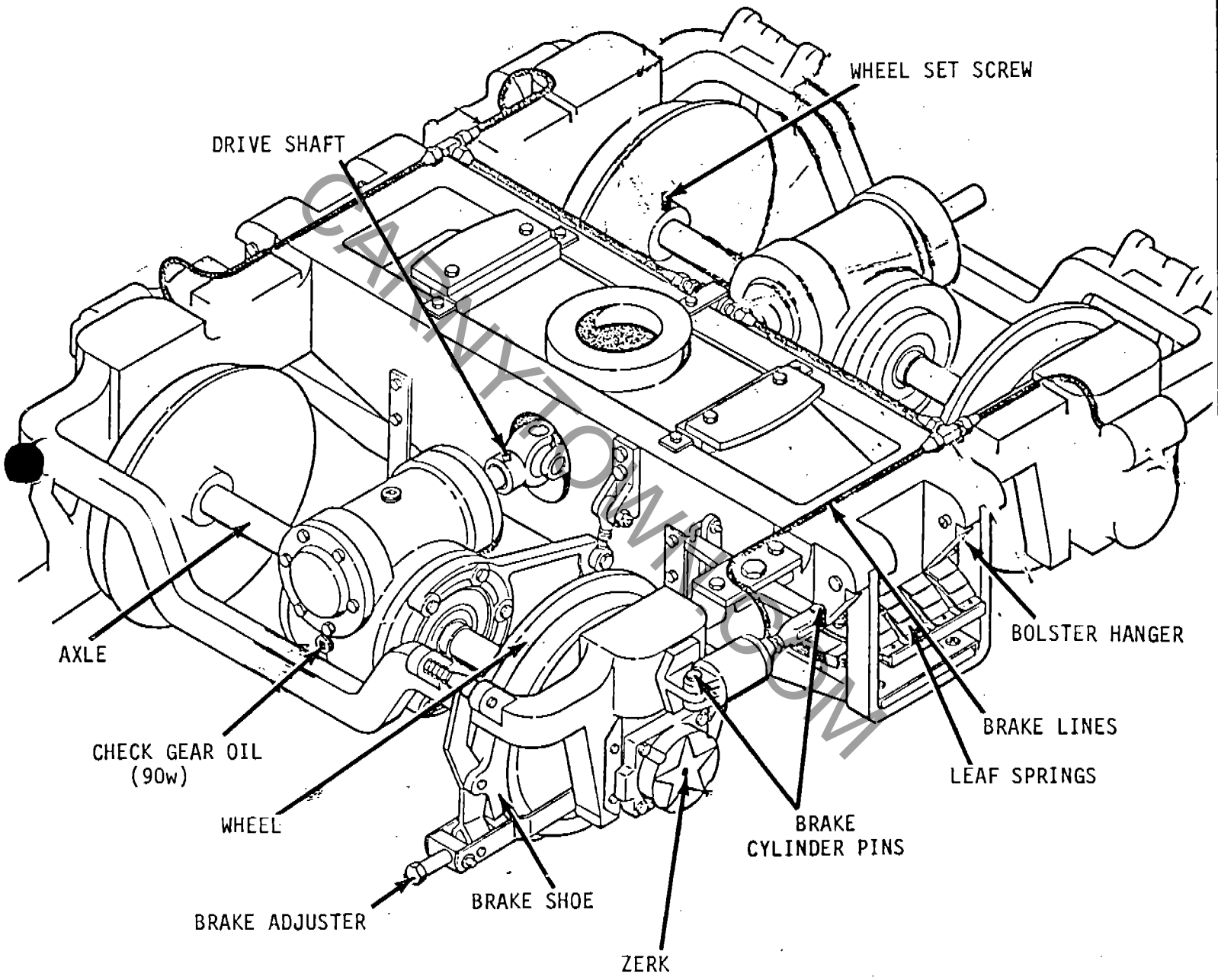


13. ( ) Check operation of automatic and/or manual turnout switches.



14. ( ) Check operation of crossing signals and/or crossing gates.

DETAIL OF C.P. HUNTINGTON TRUCK



DETAIL OF C.P. HUNTINGTON TRUCK

NUMBER: B102R1106-0

DATE: JAN. 10, 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: C.P. HUNTINGTON Subject: Safety Decals

Chance Rides, Inc. is aware that it is possible for passenger's hands, arms and/or feet to come into contact with stationary or other moving objects while riding on the C.P. HUNTINGTON train. This could result in possible injury to the passenger. Chance Rides, Inc. has designed safety decals to warn passengers to keep their hands, arms and feet inside the coach area while the train is in motion.

All owner/operators of C.P. HUNTINGTON trains are required to order, install and return the attached Certification Of Compliance within fifteen (15) days from receipt of parts. Order the correct number of parts required, as outlined in this bulletin. All parts are offered at no charge when ordered within 90 days of the date on this bulletin. Follow the installation instruction in this bulletin for installing each of the following parts.

PARTS LIST

QUANTITY	DESCRIPTION	DP NUMBER
7 per coach	Safety Decal	22197505
1 per each coach railing which has a seating facing it	Backing Plate (For mounting decal to railing)	30851521
3 per each backing plate	3/16" Rivet (For mounting backing plate to front railing)	66166200

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

NOTICE

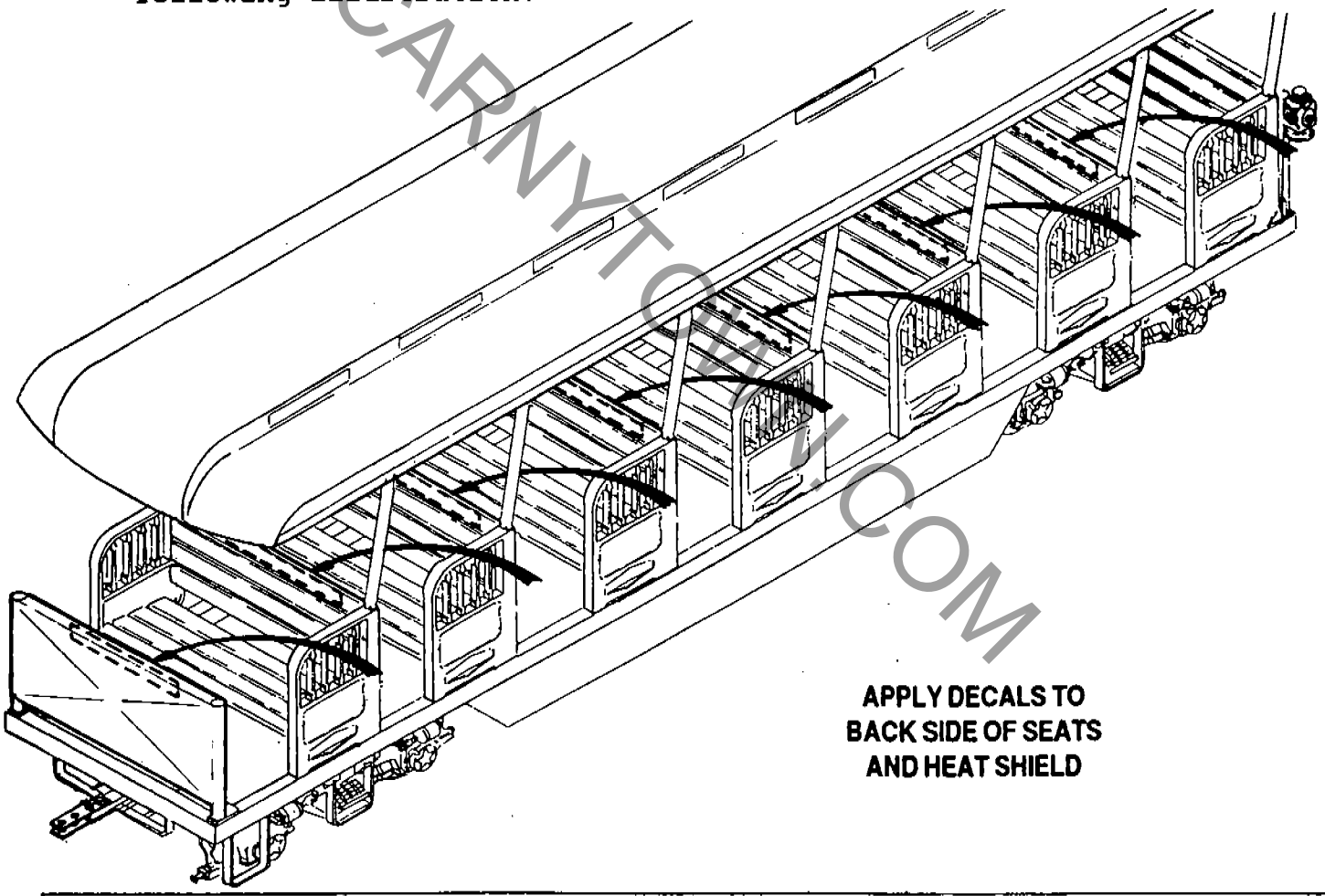
Use only those components authorized, specified or provided by Chance Rides, Inc.

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

SAFETY DECAL INSTALLATION INSTRUCTIONS ON COACHES WITH HEAT SHIELDS

1. Apply one decal to the back of the first six (6) seat backs. Decals must be centered on the top seat slat as shown in the following illustration.

2. Apply one decal to the back side of the heat shield. Position decal near the top and centered on the shield, as shown in the following illustration.



APPLY DECALS TO BACK SIDE OF SEATS AND HEAT SHIELD

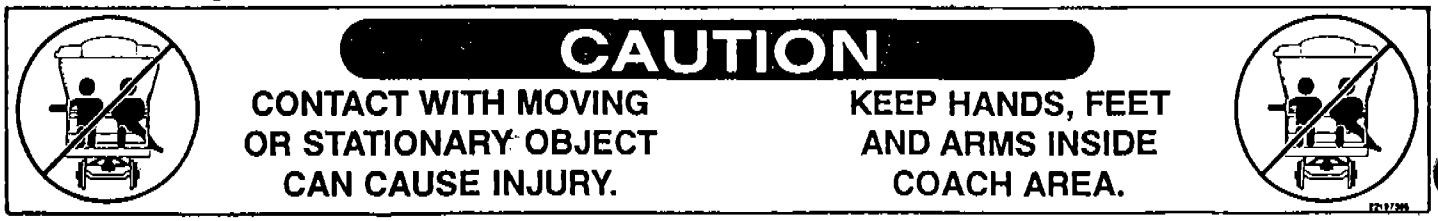


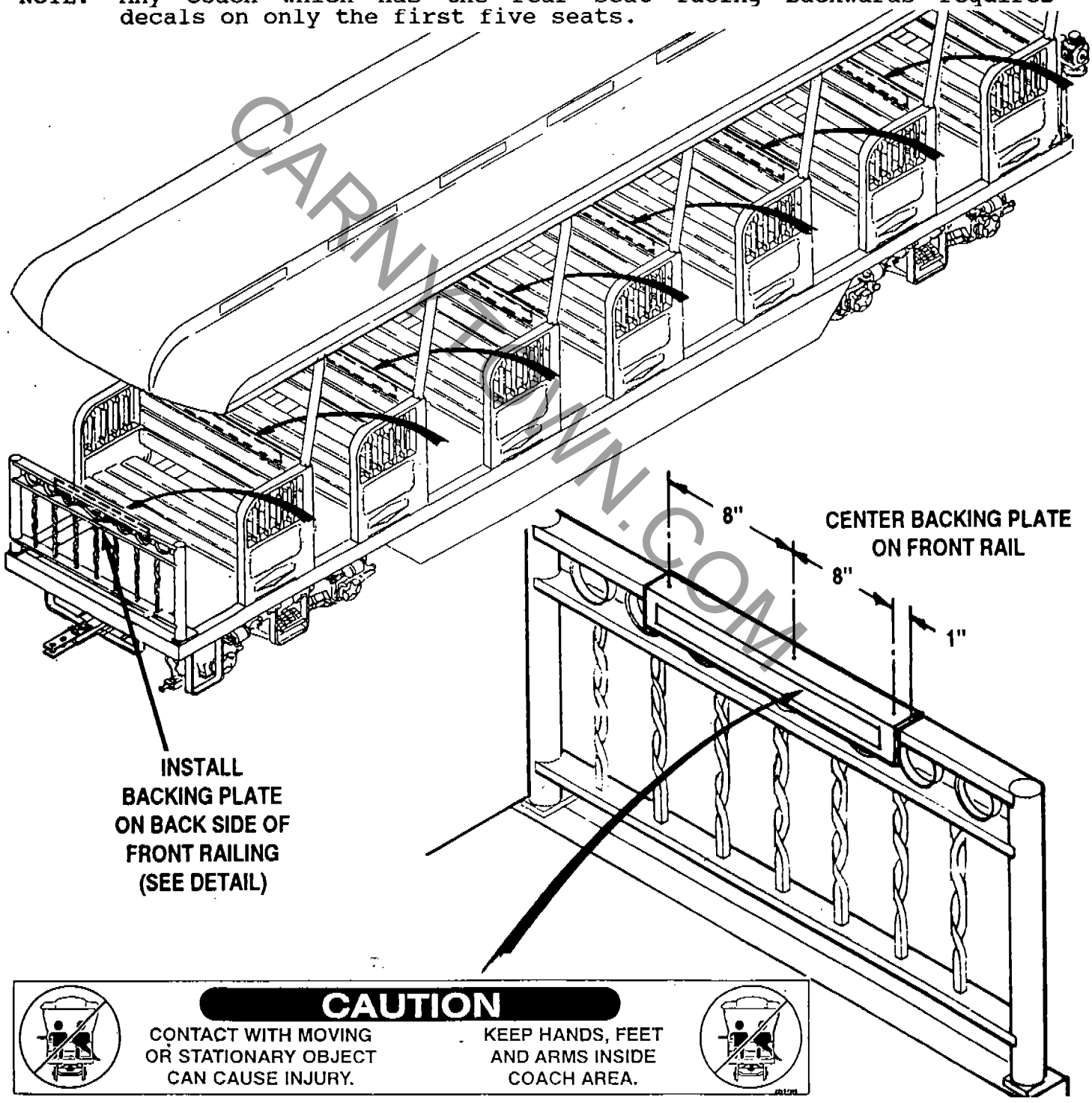
PLATE & SAFETY DECAL INSTALLATION INSTRUCTIONS ON COACHES WITHOUT HEAT SHIELDS

1. Attach backing plate to the front railing of each middle and rear coach by drilling three 3/16" diameter holes as shown in the illustration below and riveting the plate in place.

2. A second backing plate for any coach is required when the back seat faces backwards. Use the above procedure for attaching the second backing plate when required.

3. Apply one decal to the backing plate and one to the back of the first six (6) coach seats as shown in the illustration below.

NOTE: Any coach which has the rear seat facing backwards requires decals on only the first five seats.



Number: B102R1011-0

Date: June 30, 1987

Supersedes:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Numbers: 102-0208-86 through 102-0213-86

Ride: C.P. HUNTINGTON

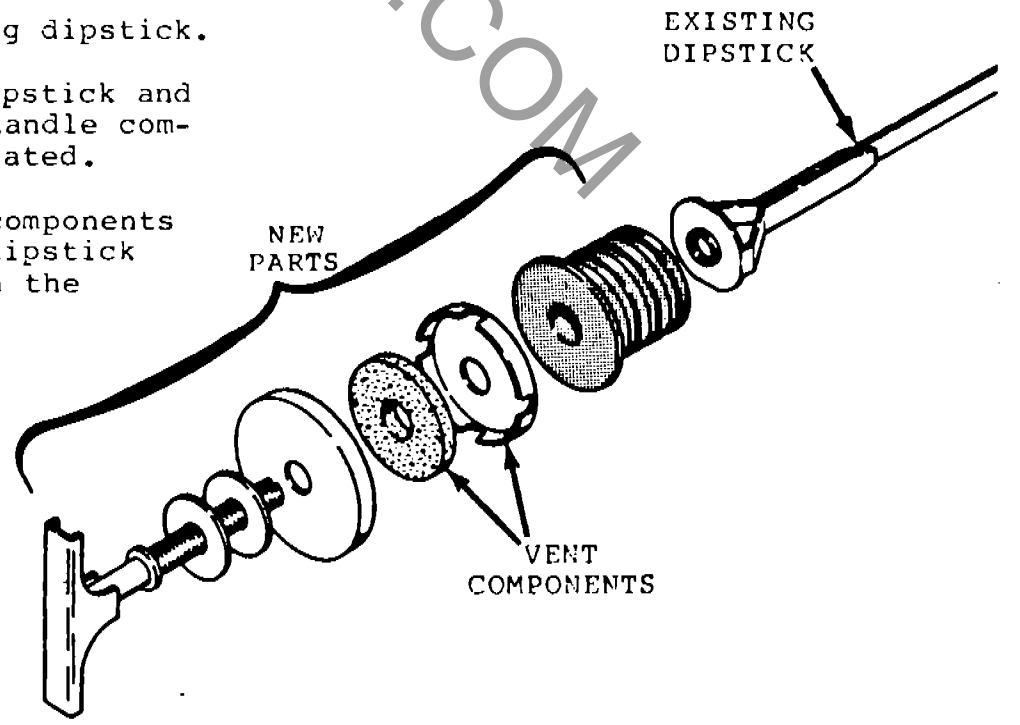
Subject: Transmission Dipstick Modification

The above noted C.P. HUNTINGTON trains are equipped with a non-vented dipstick for the transmission. CHANCE RIDES, INC. recommends that the following modification be made to these units to prevent transmission problems due to pressure build-up in the housing.

Perform the modification using the instructions below and the parts provided. All work must be performed by competent, qualified mechanics, capable of understanding the function of the parts and their proper installation. If there are any questions regarding the instructions or this modification, contact the CHANCE CUSTOMER SERVICE DEPARTMENT.

INSTALLATION INSTRUCTIONS

1. Remove the existing dipstick.
2. Disassemble the dipstick and the new dipstick handle components as illustrated.
3. Assemble the new components to the exisiting dipstick as shown. Discard the remaining parts.



Number: B01-0301-00

Date: June 30, 1987

Supersedes:

America's Largest Manufacturer of Amusement Rides

SERVICE BULLETIN

Effective Serial Numbers: 84-50199-24 through 85-50207-24

Ride: C.P. HUNTINGTON

Subject: Transmission Dipstick Modification

The above noted C.P. HUNTINGTON trains are equipped with a non-vented dipstick for the transmission. CHANCE MANUFACTURING CO., INC. recommends that the following modification be made to these units to prevent transmission problems due to pressure build-up in the housing.

Perform the modification using the instructions below and the parts provided. All work must be performed by competent, qualified mechanics, capable of understanding the function of the parts and their proper installation. If there are any questions regarding the instructions or this modification, contact the CHANCE CUSTOMER SERVICE DEPARTMENT.

INSTALLATION INSTRUCTIONS

1. Remove the existing dipstick.
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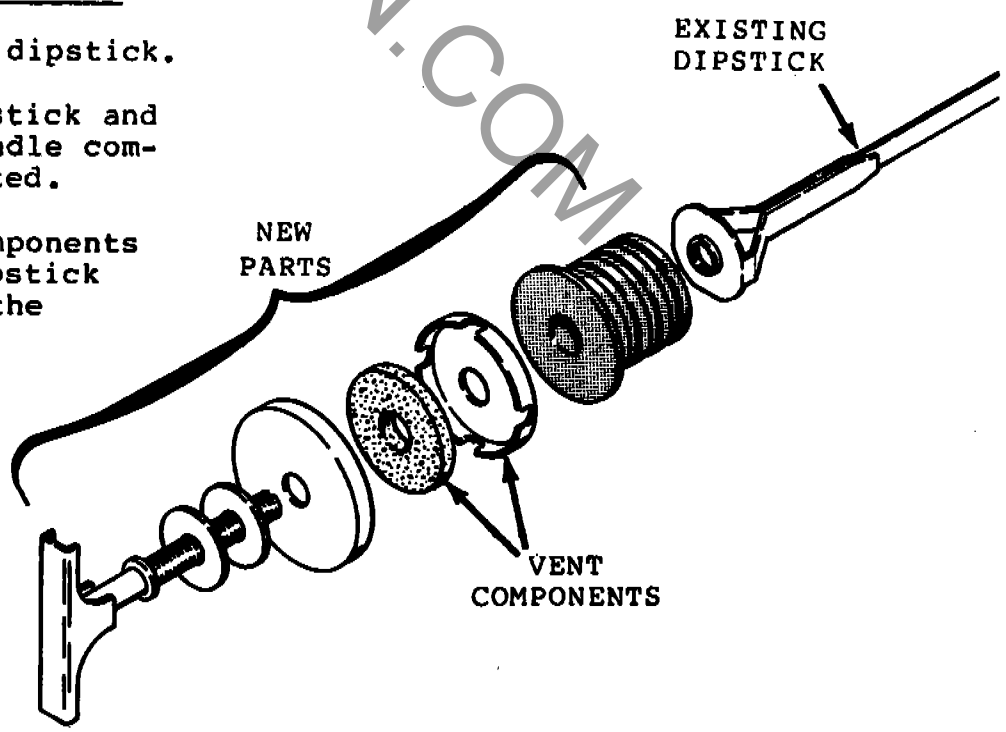
3. Assemble the new components to the exisiting dipstick as shown. Discard the remaining parts.



C.P. HUNTINGTON

Field inspection and test guide

Manual number 24329302

CHANCE RIDES INC.

C.P. HUNTINGTON

Field inspection and test guide

Contents

CHANCE RIDES, INC.
4219 Irving
P.O. Box 12328
Wichita, KS 67277-2328

phone (316) 942-7411
toll free 1-800-242-6231
fax (316) 942-7416

Introduction

Proper maintenance is essential to the safe operation of this ride. The tests and inspection points outlined in this field guide are not intended to replace the recommended maintenance schedule. This guide does not contain maintenance and repair procedures and should only be used as a ride inspection and test guide.

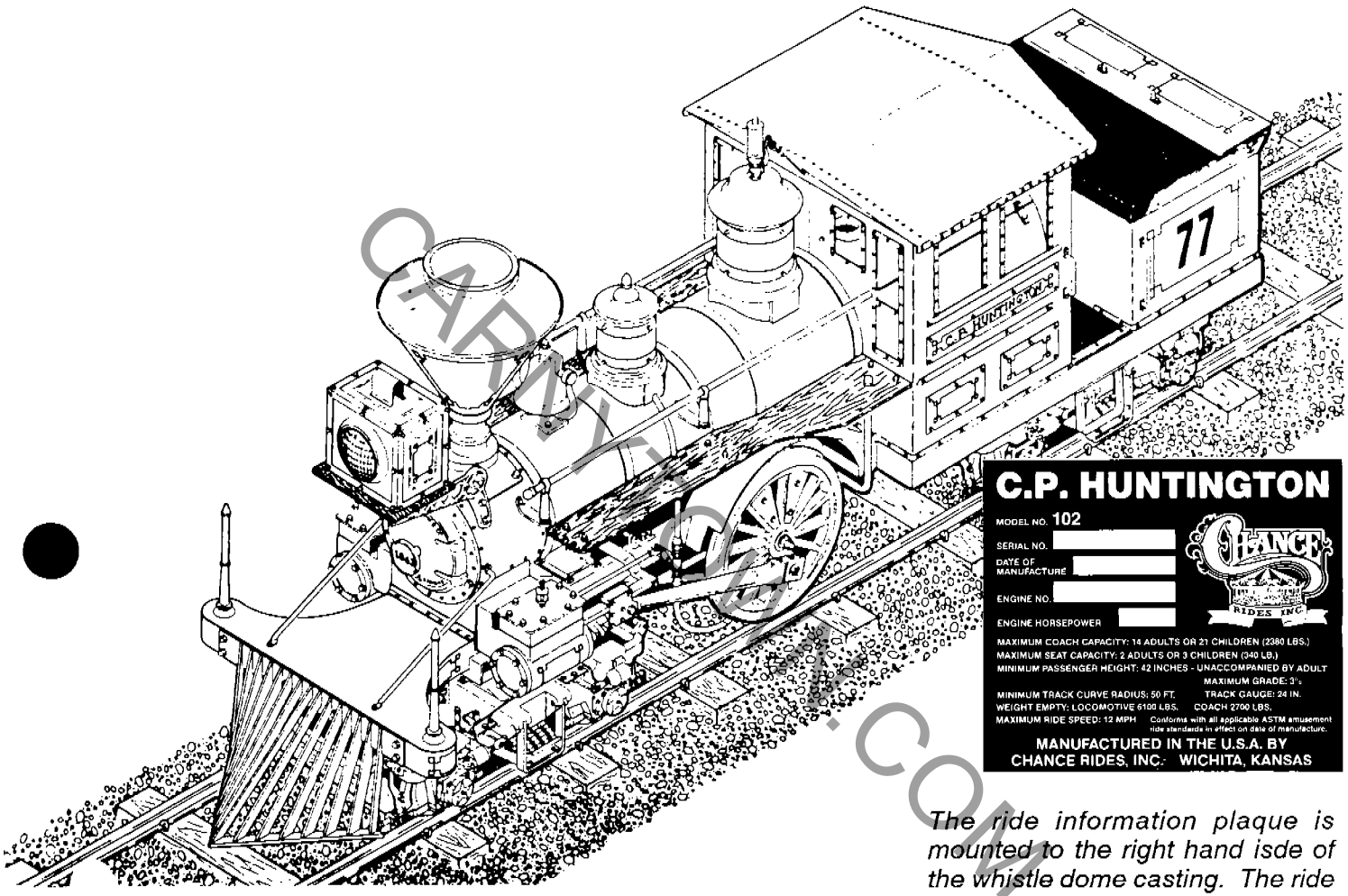
When repairs are necessary, use only those components authorized, specified or provided by the manufacturer. If any alterations, modifications and/or additions, installations of unauthorized components are made to the original design without the manufacturer's explicit written consent or without direct supervision by a manufacturer's representative, CHANCE RIDES, INC. makes no claims as to the integrity of the altered or modified ride (product).

Information in this field inspection and testing guide applies only to products manufactured by CHANCE RIDES INC. built after January 1, 1986 (**C.P. Huntington** serial number 102-20886 and on).

CHANCE RIDES INC., reserves the right to make improvements in design or changes in specifications at any time without incurring any obligation to such changes.

Ride description

The **C.P. Huntington** is a 24 gauge steam train replica. The locomotive is powered by an internal combustion engine, and an automatic-type transmission. The locomotive and all coaches are equipped with air operated brakes. The ride information plaque is mounted to the right hand side of the whistle dome casting. It lists model and serial numbers, and date of manufacture.



The ride information plaque is mounted to the right hand isde of the whistle dome casting. The ride information plaque shown is for example only. Always refer to the information plaque mounted to the ride being inspected.

The terms "right hand" and "left hand as used in this manual are determined by sitting in the operator's seat.

Detailed operation and maintenance information is available in the *C.P. Huntington Operation And Maintenance Manual* (manual number 24326700). Detailed track information is available in the *Installation Of Components And Track Preparation Manual* (manual number 24360800). For more information, or to order manuals, contact CHANCE RIDES, INC.

Operation

Operating controls

1. Key switch - This switch contols starting, running and stopping the engine. The "ACC" position allows operation of electrical accessories when the engine is stopped.

NOTE: The directional control must be in neutral to operate the starter.

2. Directional control - This single lever controls forward and reverse directional travel and speed. The center position is neutral.

NOTE: Do not change direction while the locomotive is moving.

3. Choke control (gasoline engine) - Use this control when starting the engine in cool weather. Push the control down after the engine is running.

4. Remote throttle control (gasoline engine) - Use this control during engine warm-up, with the directional control in neutral.

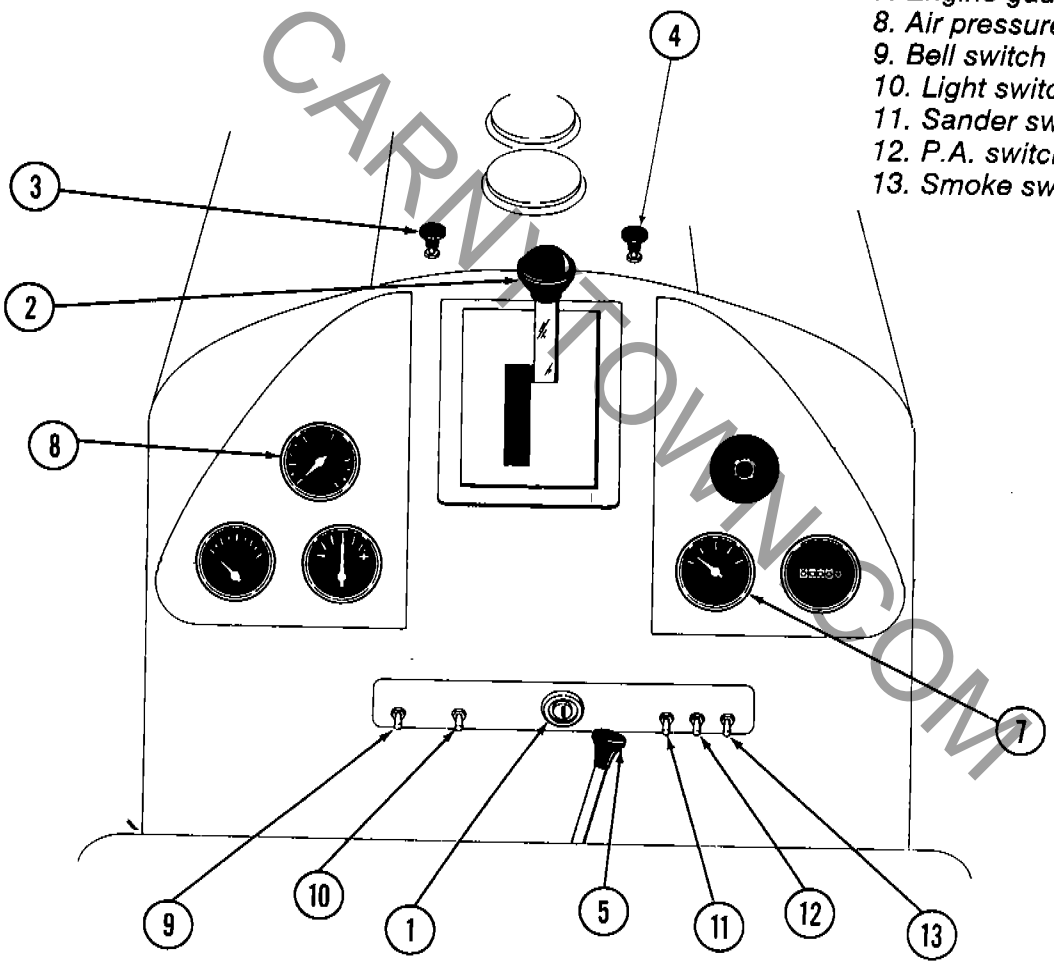
5. Brake lever - This lever applies the brakes to all wheels on the locomotive and coaches. Do not use this lever as a parking brake when the train is stopped.

NOTE: If any air line breaks, the brakes on all coaches will be automatically applied.

6. Parking brake lever (not shown) - Use the parking brake to hold the train when parked.

7. Engine gauges and indicators - Various gauges allow engine operation to be monitored.

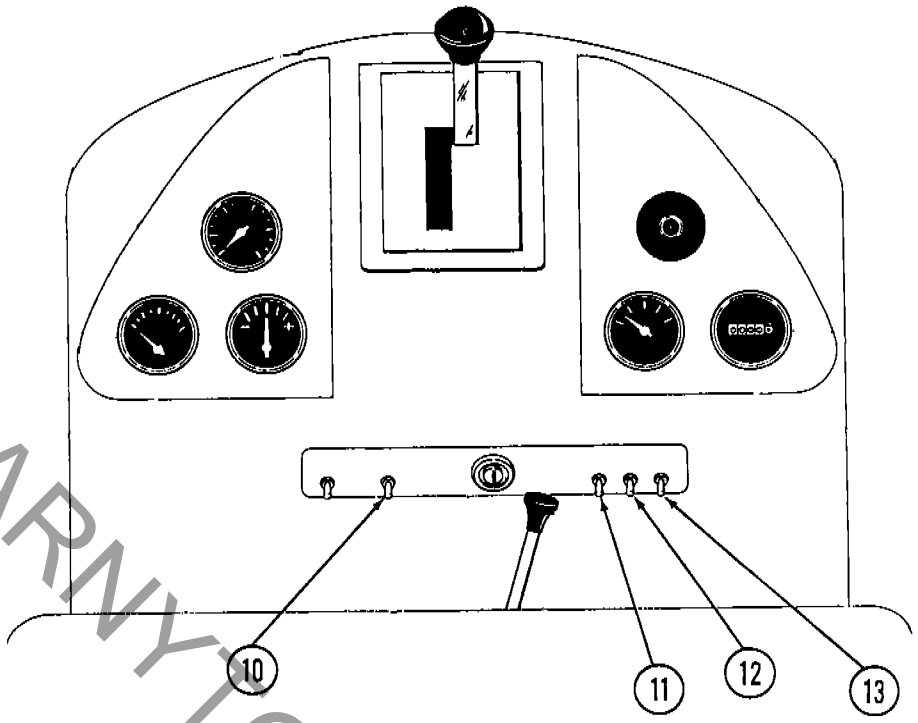
Operator's control panel
1. Key switch
2. Directional control
3. Choke control (gasoline engine)
4. Remote throttle control (gasoline engine)
5. Brake lever
6. Parking brake lever (not shown)
7. Engine gauges and indicators
8. Air pressure gauge
9. Bell switch
10. Light switch
11. Sander switch
12. P.A. switch
13. Smoke switch



8. Air pressure gauge - This gauge shows the pressure in the brake air system. An alarm buzzer will sound when the air pressure is below 55-65 psi. Do not operate the train with less than 90 psi pressure.

9. Bell switch - This switch controls the operation of the bell.

Operator's control panel
10. Light switch
11. Sander switch
12. P.A. switch
13. Smoke switch



10. Light switch - This switch controls the headlight.

11. Sander switch - This switch controls the application of sand to the rails for inproved traction.

12. P.A. Switch - This switch turns on the public address amplifier.

13. Smoke switch - This switch controls the flow of diesel fuel to the smoke stack.

Operating the train (Test cycle)

The operating procedure is provided in the *C.P. Huntington Operation Manual and Parts Catalog*. Make sure that a copy of the manual is readily available. Before operating the ride, carefully check the condition of the track. Test the air and manual brakes for proper operation. Throughout the ride cycle, check for proper operation of all controls.

Check the overall performance of the ride based on previous operating performances of the individual ride.

General inspection and testing

Testing

Field performance testing of amusement rides[1]

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

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 the set-up procedures 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 the ride to determine that direction of travel conforms to the information plate, ride manual field inspection guide of 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 of specification sheet.

Daily pre-opening inspection

This inspection shall include a daily inspection of all items as specified in the previous item (erection or installation testing).

1. B090R1002-0 May 14, 1986

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 construction, erection, operation, maintenance and repair of amusement rides.

Operational load testing
Any operational test including load testing performed on a ride shall be completely non-destructive in nature. Overload testing exceeding the rated limits listed on the information plate, operation manual, field inspection guide or specification 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.

Non destructive 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 non-destructive 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 non-destructive 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.

CHANCE RIDES, INC. considers 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.

Non-destructive testing[2]

REFERENCE STANDARD *1. ASTM-F24 Standard On Amusement Rides And Devices*
a. F846-86 Testing Performance Of Amusement Rides
b. F853-86 Maintenance Procedures For Amusement Rides And Devices
c. F893-87 Inspection Of Amusement Rides And Devices

CHANCE RIDES, INC., 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, INC. 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, INC. will notify owners by bulletin of the recommended procedures to inspect and 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 the 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 previous topic "Field performance testing of amusement rides."

Fasteners

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 the ride

and/or

- The 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% rated yield and group joint efficiencies of 62.5%

Torque requirements[4]

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 nut or capscrew head (whichever is accessible for tightening). When the capscrew is tightened from the head end, apply anti-seize lubricant to the shank end 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 be checked for accuracy twice each operating season.

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

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*

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.

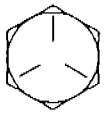
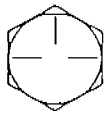
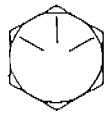
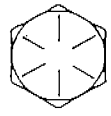
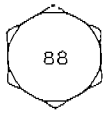
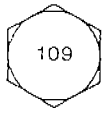
Capscrew grades

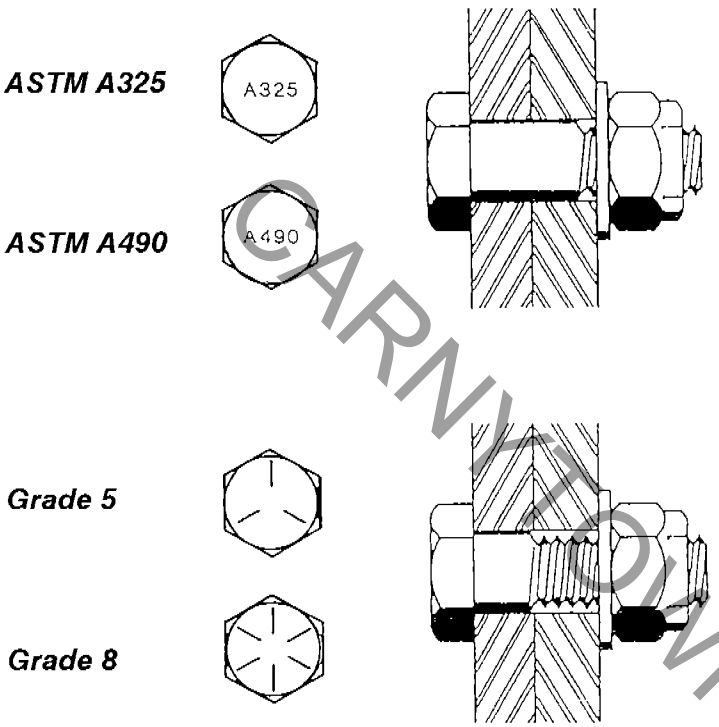
CHANCE RIDES, INC. uses only grade 5 or better capscrews and grade 8 locknuts, with A325 hardened washers for functional loads. The *Grade markings chart* shows the capscrew markings to be found on CHANCE rides. The manufacturer's identification symbols must be present on all functional load carrying 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 have machined threads and can have die seams along the shank.

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

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 and shorter thread length than Grade 5 81,000 yield  **ASTM A325 Type 3** Corrosion resisting Longer shank and shorter thread length than Grade 5 81,00 yield 	 **ASTM A325 Type 2** Low carbon martensitic
SAE J429 Grade 8 Medium carbon 130,00 yield 	 **ISO R898** Class 8.8 Medium carbon 92,000 yield 
ASTM A490 Alloy steel Longer shank and shorter thread length than Grade 8 130,00 yield 	 **ISO R898** Class 10.9 Alloy steel 130,000 yield 



Capscrew comparison
ASTM A325 and A490 capscrews have longer shanks and shorter threads then Grade 5 and Grade 8 capscrews of the same size.

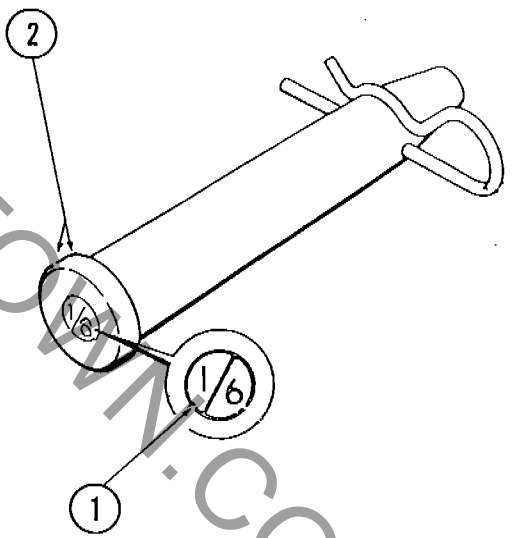
Replacement of capscrews and locknuts
When permanently installed capscrews and locknuts are disassembled for repair or adjustment, they must be replaced if they have been in service over five (5) years, or corrosion, or other damage requires over-torquing for removal. If a torque wrench is not used to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

Pins[3]

Tapered pins used on 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.

Use only the pins specified by CHANCE RIDES, INC. These pins are identified as shown in the following illustration. Always use the correct hairpin.



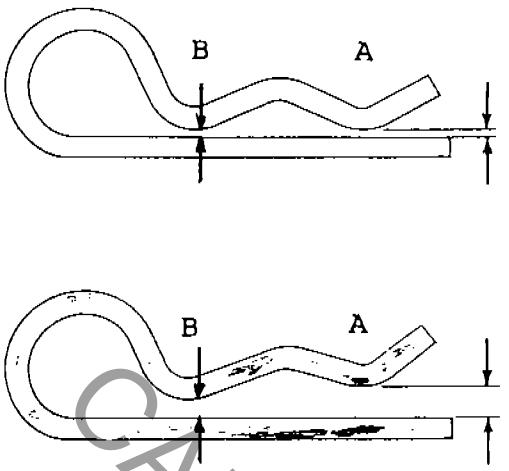
Pin identification
1. Date of manufacture
2. Rounded edges

Use care when installing and removing tapered 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 can cause the pin to chip, resulting in personal injury. For this reason APPROVED SAFETY GLASSES OR GOGGLES MUST BE WORN AT ALL TIMES when tapered pins are being installed or removed. If a tapered pin is chipped, bent, or "mushroomed" on either end, discard it and replace it with a new pin.

Pin keepers

All keepers (R-keys, hair pins, lynch pins, etc.) must be inspected for wear. If a keeper is bent out of shape or "sprung", it must be replaced.

Hairpins are expendable parts. After repeated use, they become worn and "sprung" as shown.

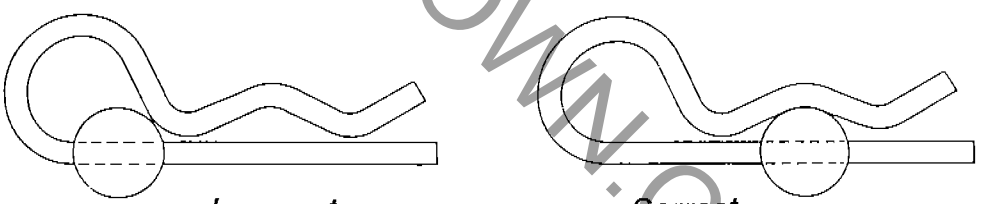


Acceptable hair pins
Dimension "A" equals dimension "B" in a relaxed position

Unacceptable hair pins
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.

The correct installation of a hairpin is shown. Incorrectly installed hairpins are more likely to fail, and will distort after only a few uses.



Incorrect *Correct*

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.*

Inspection

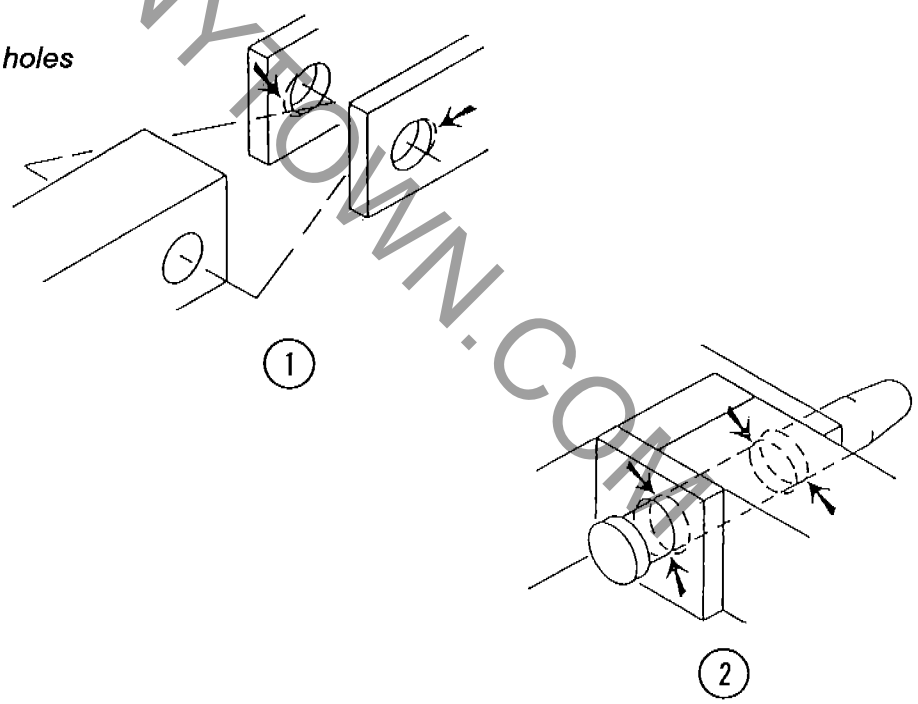
Joint inspection

Some joints will appear to wear rapidly on new rides. This is usually a result of the holes not aligning in the mating parts. When this condition occurs it results in "point contact". A joint with this condition will generally wear rapidly until the load is distributed evenly over the fastener and the parts.

If in doubt about the condition of a bolt, pin or hole on a new ride consult CHANCE RIDES, INC., and replace as required.

1. Inspect stationary joints for "egg-shaped" wear and loose pins.

1. Stationary joint wear
2. Stationary joint-misaligned holes resulting in point contact



2. Inspect moving joints for wear and lubrication.

3. Inspect welded structural joints for cracking or fatiguing.

4. Inspect bolted structural joints for cracking, fatiguing and proper bolt tightness.

5. Inspect pins and keepers on all pin joints for wear and proper installation.

6. Inspect all pins for proper CHANCE identification.

General safety guidelines

The following is a list of general safety rules to which everyone should adhere.

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

2. Inspect the ride before each day of operation to determine that no portion of the ride is damaged, missing or worn in such a manner that unsafe conditions can develop.

3. Perform the manufacturer's recommended maintenance procedures at the intervals and in the manner specified in the operation and maintenance manual.

4. Study each job carefully to determine all hazards so that necessary safety precautions can be taken.

5. Examine safety devices (tools, ladders, etc.) before they are used to make sure they are in good condition. Use only OSHA approved safety items. Ladders must be clean and unpainted.

6. Use the proper tool or equipment for each job. All hand electric power tools must be properly grounded.

7. Wear close fitting, comfortable clothing when working on or near moving parts or live electrical circuits. Avoid finger rings, jewelry or other articles which can be caught in moving parts or come in contact with electrical circuits.

8. Protect your eyes by wearing approved safety glasses or goggles.

9. Wear a hard hat at all times. When working in elevated areas, use a safety belt.

10. Where work performed is hazardous, never work alone.

11. If guards are removed from equipment, make sure they are replaced before leaving the job.

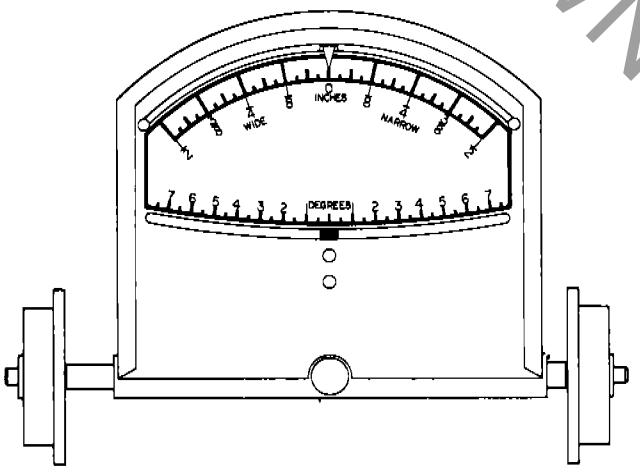
12. Clean up after each job, disposing of surplus materials.

13. Keep a record of parts replaced and the date of replacement. Inform the manufacturer of any replacement requirements which are frequent or cause unsafe conditions.

14. Make modifications and additions only as outlined in manufacturer's service and safety bulletins.

Track inspection

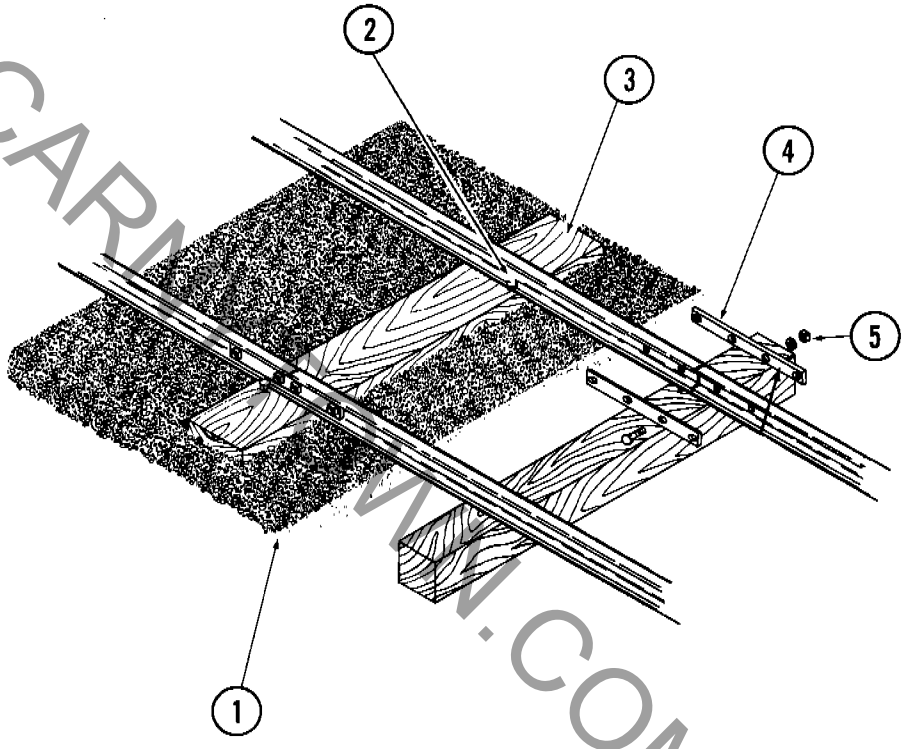
1. Check the overall track layout for grade and curve radius recommendations in the *C.P. Huntington Operation Manual and Parts Catalog* or the *Installation Of Components And Track Preparation.*



Rolling track gauge

2. Check for correct track gauge over entire layout. Use a rolling track gauge to check for no more than 1/8 inch variance in track gauge. Watch the level indicator to measure track bank. Maximum bank is two degrees, with no more than one-half degree change over 16 feet of track.

3. Inspect all ties and ballast. Look for washed out areas and shifting of track components.



1. Ballast
2. Spike
3. Tie
4. Splice plate
5. Splice plate bolts

4. Inspect for loose spikes and track splice plates.

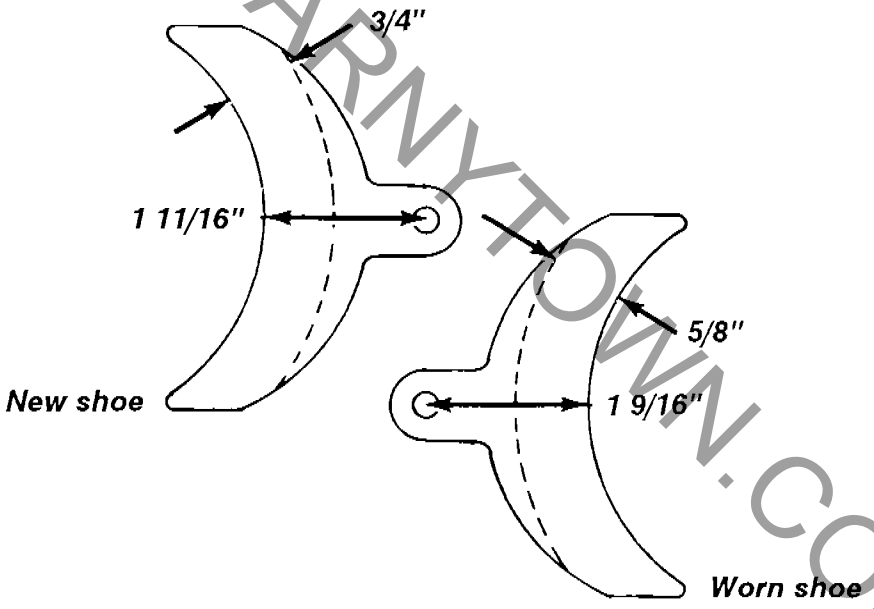
5. Check for proper operation of automatic and/or manual turnout switches, where applicable.

6. Check for proper operation of crossing signals and/or crossing gates, where applicable. Inspect electrical connections and grounding per local code.

7. Inspect tunnels and trestles for clearance and structural integrity, where applicable.

Locomotive inspection

1. Check brake shoes for wear and proper adjustment. Brake shoes must be as close to the wheels as possible without dragging.



2. Inspect the entire air system for leaks. Check air tank and drain water. Look for signs of rust.

3. Inspect wheels for worn flanges.

4. Inspect the fuel system for leaks, including the smoker fuel tank, if equipped.

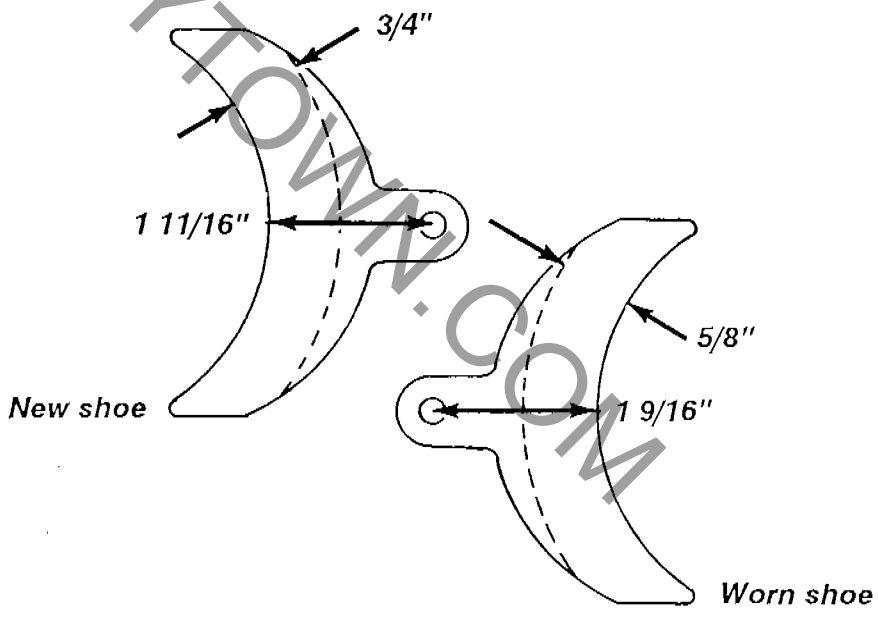
5. Inspect the exhaust system for leaks.

6. Check the condition of the engine cover, operator's seat and drive shaft cover for proper installation.

7. Inspect all electrical wiring for short circuits, bad wires, etc.

Coach inspection

1. Check brake shoes for wear and proper adjustment. Brake shoes must be as close to the wheels as possible without dragging.



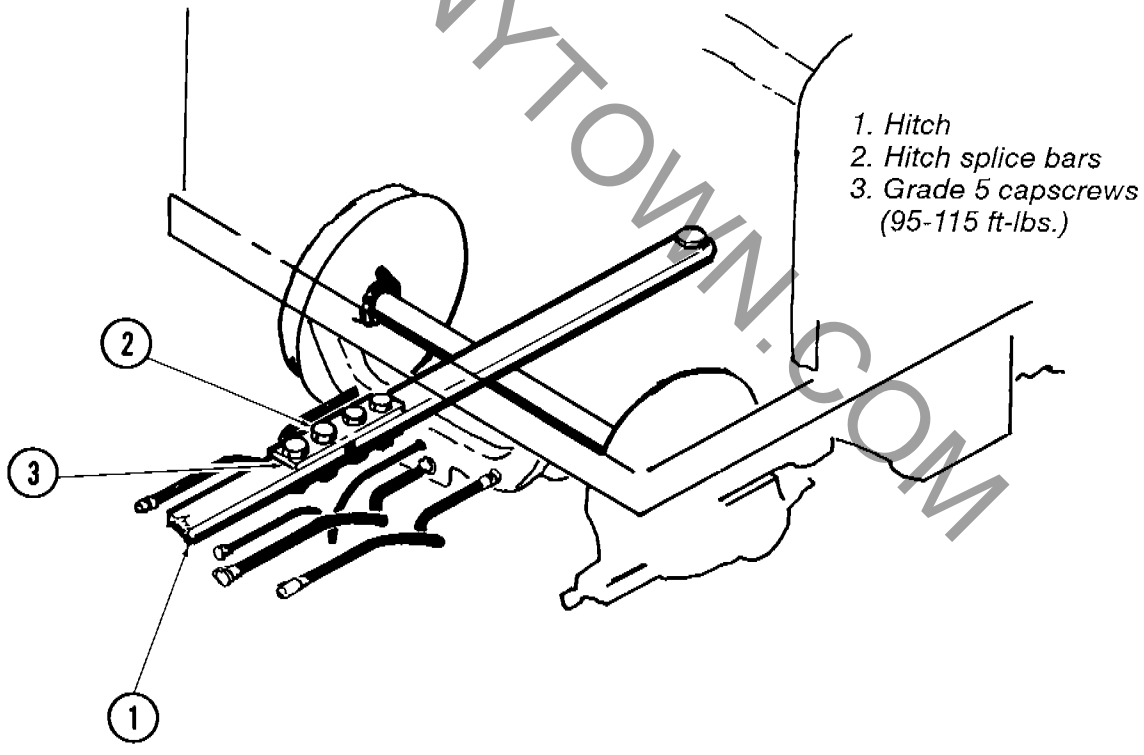
2. Inspect the entire air system for leaks. Check air tanks and drain water. Look for signs of rust.

3. Inspect wheels for worn flanges.

4. Inspect hitches and hitch splice bars. The capscrews for the hitch splice bars are grade 5 and must be tightened to 95-115 ft-lbs.

5. Check the condition of all passenger seats.

6. Inspect all electrical wiring for short circuits, bad wires, etc.



1. Hitch
2. Hitch splice bars
3. Grade 5 capscrews (95-115 ft-lbs.)

Bibliography

The following service bulletins and manuals are referenced in the preceding text. Service bulletins issued after publication of this guide are located at the back of each section. Any future bulletin releases affecting a ride will be provided by CHANCE RIDES, INC. Bulletins received after receipt of this guide should be considered updates to this guide.

CHANCE RIDES, INC.
4219 Irving
P.O. Box 12328
Wichita, KS 67277-2328

C.P. Huntington Operation And Maintenance Manual
24326700
January, 1985

Installation Of Components And Track Preparation
24360800
January, 1985

1. *Field Performance Testing Of Amusement Rides*
   B090R1002-0
   May 14, 1986

2. *Non-destructive Testing*
   B090R1022-0
   March 21, 1988

3. *General Safety - Taper Pins*
   B090R1056-0
   February 9, 1990

4. *Replacement And Torque Requirements*
   For Functional Load Carrying Capscrews
   B090R1075-0
   May 25, 1990

Transmission Dipstick Modification
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June 30, 1987