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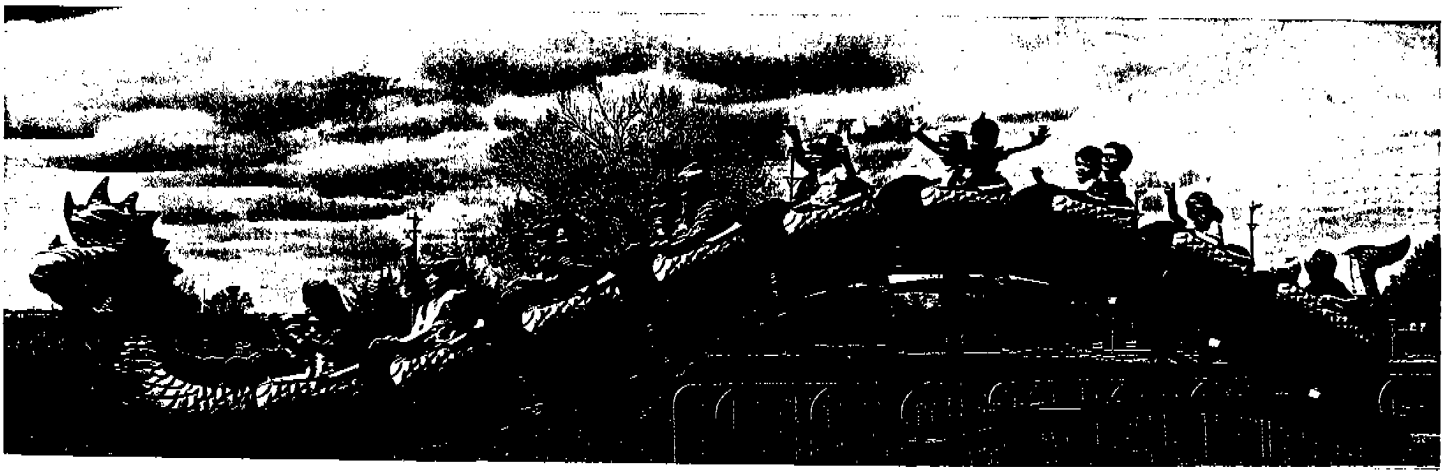
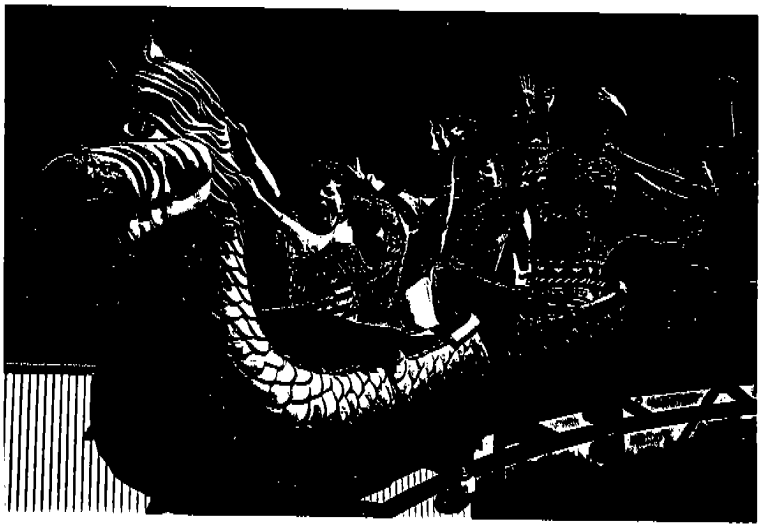
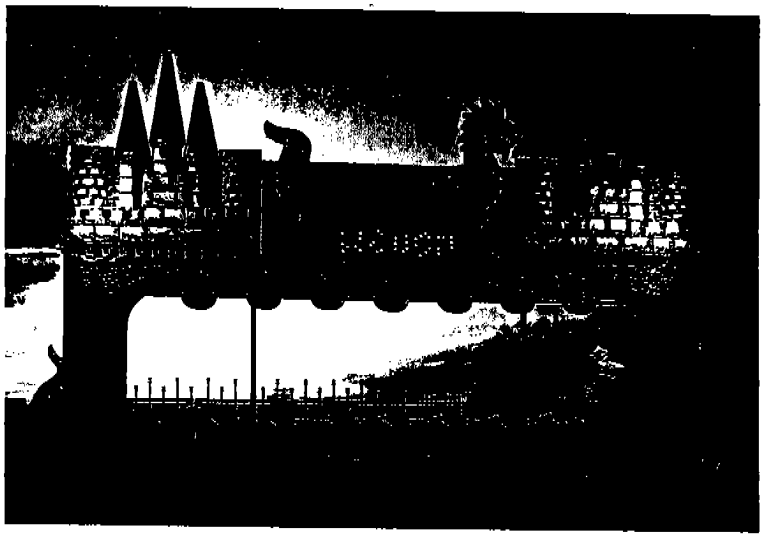
Wisdom

MFG: WISDOM COMPANY
NAME: DRAGON COASTER
TYPE: NON-KIDDIE

DRAGON WAGON







WISDOM ROLLER COASTERS

DRAGON WAGON
GO GATOR
SOOPER JET
CLATTERPILLER
MINER MIKE

WMI INDUSTRIES
P.O. BOX 5000
STERLING, CO 80751
970-522-7515
800-634-6097

FREE WHEELING MINER MIKE

This "Operation Manual" has been written for the benefit of the ride operator and owner. **WISDOM INDUSTRIES LTD. advise all ride operators and owner to read this manual before operation.**

INTENDED USE

The equipment herein described is intended to be used by a commercial operator to provide a service to the buyer's customers. As a commercial operator, the buyer agrees to operate and maintain the equipment for its intended use in a professional and competent manner as per Wisdom Industries, Ltd. recommendations and instructions, industry and govern-mental standards, and good commercial practices, using professional and competent mechanics and operators. If at any time, and for any reason the equipment cannot be adequately and safely operated for its intended use, the buyer agrees not to operate the equipment until proper repairs or corrections are made.

SPECIFICATIONS

CAPACITY. . . . . .14 children

LOADING. . . . . .2 children per car

MAX WEIGHT PER CAR. . . . . 180 LBS.

ROTATION. . . . . .4 RPM

SET UP AREA. . . . . Varies according to track layout

MOTOR POWER. . . . . 2-5HP 3 PHASE DRIVE MOTORS

BRAKE. . . . . .12 V DC WHEEL BRAKE

ELECTRICAL. . . . . 18 KW 50 AMP/220VOLT 3 PHASE

SETTING UP THE SOOPER JET GO-GATOR & CLATTERPILLAR

STEP 1 When you place the trailer on location, place the 4 jacks at each corner of the trailer to stabilize the Roller Coaster Trailer.

STEP 2 Remove the Center Pole and spread out the three legs and pin the braces to form the base for the center commutator ring.

STEP 3 Place the commutator ring assembly on top of the Center Pole, remove the Center Pole to approximate center of the ride when set up.

STEP 4 Put out the front steps, placing them on the back side of the ride to make it easier for unloading each track section.

STEP 5 Spread out all the jack stands around the ride in their approximate location. Each is numbered, starting with number 1, at the front of the ride going counter clockwise to the rear of the ride.

STEP 6 Remove the first track section (number 1-2) and pin in to the front of the ride and support with that jackstand. At this time install 2 diagonal braces from the jack stand to the track section.

STEP 7 Install second track section, (numbered 2-3) and install the medium high jack stand to stabilize that end. Drive in the track pins and wedges, install 2 braces.

STEP 8 Then roll the coaster car up on the curve so they are out of your way for removing the rest of the track sections.

STEP 9 Starting at the back of the ride, install each track section in order with the jack stand and braces as you proceed around from the back of the ride, clockwise to the front. The last piece of track should be section 4-5.

STEP 10 As you assemble the track, the track can be adjusted so that the joints are smooth all with way around the ride.

STEP 11 After all sections are together, use 2 cables from each short stand. These are connected to the center pole, this will center the pole in the middle of the ride. Use the third cable to hold it in position for moving during operation. This cable goes from the center pole to the trailer in the front.

STEP 12 Connect the electrical cord from the commutator ring assembly to the main power box using the twist lock plugs.

STEP 13 Set out the fence and fence feet around the ride.

STEP 14 Move the steps from the back side of the trailer to the front where they pin in for an entrance and install the handrails.

STEP 15 Place the fiberglass center pole cover on the center pole.

STEP 16 Connect the electrical power cord to 110-220 3 phase power and test the ride. This should operate according to the control switch lettering.

STEP 17 Stand up Sign and Pin.

During the operation of the ride, each passenger must wear the seat belt and it should be pulled up snug around them.

After the first half hour of operation check to see that all jack stands and pin wedges are tight and on stable ground. Thereafter the wedges should be checked every two to three hours to make sure that they are locked into the pins securely. Also the jack stands should be checked, at least daily, to make sure they are firmly on the ground.

Car wheels should be check daily for excessive wear or looseness.

Check gear box grease monthly.

Grease wheels weekly.

Check hitches daily.

SETTING UP THE MINER MIKE

Step 1 - Place the trailer on location, lower the 4 jacks at each corner of the trailer to stabilize the trailer.

Step 2 - Level the trailer.

Step 3 - Remove the center pole from the trailer and place in the approximate center of the ride.

Step 4 - Pin the short Brace to the center pole from the commutator to the pipe on the side of the trailer.

Step 5 - Spread out all the track jack stands around the ride in their approximate location. Each is numbered, starting with number 1, at the front of the ride going counter clockwise to the rear of the ride.

Step 6 - Remove the first track section (number 1-2) and pin in to the front of the ride and support with that jackstand. At this time install 2 diagonal braces from the jack stand to the track section. Pin 1 track & stand together using 2 pins & wedges.

Step 7 - Install second track section,(numbered 2-3)& install the jack stand to stabilize that end. Drive in the track pins & wedges, install 2 braces.

Step 8 - Continue with pinning the track sections and stands until all the track is assembled.

Step 9. - Block the loading area of the track so that all the feet are evenly supported.

Step 10 - Install all diagonal braces from the track to the jack stands.

Step 11 - As you assemble the track, the track stands can be adjusted up and down so that the joints are even all the way around the joint.

Step 12 - Pin the two scenery panels to the commutator pole.

Step 13 - Install the scenery diagonal brace between the two scenery panels and pin to the brace going from the commutator pole to the trailer.

Step 14 - Place the control stand at the front of the ride.

Step 15 - Set out the fence and fence feet around the ride.

Step 16 - Set up the 2 quartz light stands to light the ride.

Step 17 - Remove all racks from the trailer.

Step 18 - Connect the electrical power cord to 110-220 3 phase power.

Step 19 - Unpin the car travell retainers.

Step 20 - Run cars to the front of the ride.

Step 21 - Stand up Sign and Pin and Wedge.

Step 22 - Recheck that all pins & wedges are tight.

Step 21 - Test run the ride.

Step 22 - Check all car couplers and wheels for adjustment and wear before operating the ride.

The Miner Mike should operate according to the control switch lettering.

To tear down the ride reverse the above procedure.

SAFETY REQUIREMENTS

The key to safety is well trained and supervised employees. Make certain that all employees know how the ride operates. The employees should have a good attitude towards safety and common sense.

REMEMBER, SAFETY MUST ALWAYS COME BEFORE REVENUE.

Do not neglect the employees' safety. Before starting the ride, be certain there are no personnel inside the fences or on the ride structure. Be certain all electricity is turned off whenever an employee might come into contact with electrical connections or components.

GENERAL SAFETY GUIDELINES

The following is a list of a few general rules which should be adhered to by everyone. Remember that in the long run, the key to a safe and successful operation is to have well-trained and well-supervised employees.

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

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

3. Perform manufacturer's recommended maintenance procedures at intervals and in the manner specified by the Operation and Maintenance Manual, in the following general areas:

   (a) Lubrication
   (b) Electrical Systems
   (c) Torquing of bolts
   (d) Wear of bolted or pinned joints
   (e) Adjustment and care of mechanical components
   (f) Passenger securing devices
   (g) All parts are present and installed
   (h) Operating and emergency controls
   (i) Factory installed safety devices

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

5. Examine safety devices, tools, ladders, etc. before they are used to make sure they are in good condition.

6. Use the proper tool or equipment for each job. Ground all hand electric power tools before use unless the manufacturer advises otherwise.

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

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

9. Where work is to be performed is hazardous, such as live electrical circuits, at least two men should work together.

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

11. Clean up each job and dispose of surplus materials.

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

13. Make modifications and additions as outlined in the manufacturer's Service and Safety Bulletins.

OPERATOR RESPONSIBILITIES

1. **HANDICAPPED PERSONS** - Persons who are physically handicapped must not be allowed to ride violent or fast moving rides. If the management of the amusement area allow handicapped to ride certain slow rides, the operator must ensure that the handicapped person is under the full control of an adult person who will ride with them and provide supervision during the ride or will not be injured while riding the ride.

2. **PROHIBITED PASSENGERS** - Operators shall not allow a passenger on the ride who cannot be properly secured due to his size or if there is a malfunction to the securing device. Similarly, they must refuse service to a pregnant woman, or a passenger who is visibly ill, or under the influence of alcohol or drugs.

3. **CLEARANCE PRECAUTION** - Before operating the ride, it is important to ensure that there are no personnel around the ride structure or any exposed electrical components or other areas where there could be a risk of injury.

4. **ON-DUTY ATTENTION** - Insist that each operator remain in full control of the operating controls during operation of the ride with complete attention to the ride and passengers. Under no circumstances should the operator leave his or her position while the ride is in operation.

   If it does become necessary for the operator to leave his post at the controls, he must turn the ride off completely to ensure it does not accidentally start and injure passengers or staff.

5. **INSPECTION/CHECK LIST** - Operators must inspect the ride and complete a General Check List before each day's operation.

6. **DAILY WARM-UP** - The operator must always run the ride through several cycles before the first passengers are loaded. This warm-up without passengers is necessary to make sure the ride is safe and there are no problems mechanically not detected previously.

7. **PRECAUTIONS BEFORE AND DURING THE RIDE** - Never start the ride unless the operator or assistant is facing the ride and is in a position to observe the whole are because:
   - Patrons have been known to jump fences.
   - Patrons have been known to try to change positions while the ride is running.
   - Patrons have been known to "skylark" causing their own safety and that of others to be put in jeopardy.
   - The operator's assistant may wish to make a last minute adjustment and be put in a dangerous position when the operator puts the ride in motion.

8. **SMOKING** - Smoking is not allowed on the ride. This includes the operator as well as the passengers.

9. **LOOSE ITEMS** - The area inside the ride must be clear of any items that can fly out to the edge of the ride when it gets up to speed.

10. **FOOD AND DRINK** - It is recommended that no food or drink be allowed onto the ride.

OPERATOR SELECTION AND INSTRUCTION

1. Select competent, mature operators, capable of understanding the function and use of amusement rides and their control.

2. Instruct each operator fully in the proper use and function of the ride he is to supervise, including:

   (a) Controls and procedures for normal and emergency operation.
   (b) Manufacturer's recommended maximum speed and load.
   (c) Manufacturer's recommended length of ride time and frequency of repeat rides.
   (d) Any foreseeable misuse of the ride as determined by the manufacturer or owner, or by special conditions such as weather, location, or crowds.
   (e) Each operator must have immediate availability of a manufacturer's Operator Manual for the ride he supervises.

3. Require each operator to inspect the ride he supervises, each day of the operation.

   (a) Determine that no portion of the ride is damaged, omitted or worn in such a manner that it is unsafe or that it may develop into an unsafe condition.
   (b) Report any irregularities to the superintendent or owner.
   (c) Do not operate the ride if any irregularities are found until such condition has been corrected.

4. Instruct the operator to allow no passengers to ride who are visibly ill, or under the influence of drugs or alcohol.

5. Instruct operators and attendants on the proper methods of securing passengers in the ride. Do not allow a passenger to board a ride if he cannot be properly secured because of his size or because there is a malfunction of the securing device.

STOP the ride immediately if any passenger is observed moving from their seat, turning upside down, or behaving dangerously, such as standing up.

6. Advise the operator against starting or operating the ride while any person (passenger, spectator, or employee) is in an endangered or unsafe position on the ride, or within the ride area.

7. Insist that each operator remain in full control of the operating controls during operation of the ride, and gives his full attention to the ride and its passengers.

8. Instruct the operator to let no other person, other than another trained operator, operate the controls of the ride, except those portions of the ride that are specifically designed to be controlled by the passenger.

9. Advise the operator that factory-installed safety devices are not to be tampered with or removed.

10. Advise the operator of owner/supervisor procedures for assisting ill or injured passengers.

11. Instruct operators and attendants that patrons are required to secure all articles, such as keys, change, eye glasses, etc., which may become loose while riding.

OPERATING AMUSEMENT DEVICES - OPERATOR INSTRUCTIONS

The following are the correct loading (balance) procedure for amusement devices:

1. Every amusement ride must always be operated with a balanced load of passengers at all times.

2. The balancing rule is to ensure an even load on the ride's structure and mechanical drive, which in turn will cause less wear and tear and ensure a safer, longer life of the structure with less down time for adjustments and repairs.

3. In practical terms, consider the difference in driving a motor vehicle with balanced wheels as against unbalanced wheels, which causes vibrations and eventually wear and tear. The majority of operators have experienced driving a car with unbalanced wheels and the consequent results. Amusement devices are mostly large wheels and react the same as an automotive wheel when out of balance.

4. Although the out of balance load on some devices cannot be felt by the passengers or operator, it is still essential for the ride to be balanced.

5. On an extremely fast moving ride, it is essential that the ride be accurately balanced at all time.

6. Although it may not be strictly essential to balance slower revolving rides, it is still most desirable to achieve a balance load, in the interests of the passengers and the owner of the ride, for increased safety and less "wear and tear".

REPLACEMENT OF BOLTS

During normal maintenance practices, it is necessary to replace some bolts. They work loose because they have not been checked periodically, or they become lost when they are removed to repair some component. The points we wish to stress are the following:

Wisdom Industries uses only grade 5 bolts or better.

Bolts are identified by markings on the bolt head. Bolts without markings are generally grade 2 or 3 (common hardware store variety) and are not strong enough to be used on amusement rides in high stress areas.

When replacing any bolt, always use an equivalent or stronger bolt. Higher numbers mean stronger bolts.

NOTE: There are some bolts available above grade 8; however, these bolts are not to be used for general purposes. They are extremely brittle and are designed for special applications.

If trouble is encountered with bolts working loose, check the tightness according to the torque chart.

If certain bolts continue to work loose, remove the bolts and inspect the threaded holes. If threads are in good condition, clean the hole out with a non-oil base solvent and blow dry and apply "loctite" to the threads. After doing this, install new washer and bolt and torque as per the chart.

BOLT TENSIONING TORQUE

1. All tensioning pressures are for grade 5 bolts which have a tensile strength of 50 tons per square inch.

2. Bolts that are used continuously for portable ride erection should not be tensioned to maximum torque unless instructed to do so or they are in a high stress area.

3. Bolts tensioned to maximum torque should not be continuously reused and should be replaced with new bolts of equivalent strength.

4. Caution should be exercised in applying torque because in some cases, it may not be possible to utilize all the torque a bolt will stand because of distorting surrounding parts.

5. Lubricate bolts when using with SAE 30 oil or an approved anti-sieze compound.

CAUTION: Torque values are given for steel bolts and steel nuts screwed into threaded holes in steel. Be certain threaded parts are not aluminum, brass, or other soft alloys.

BOLT TORQUE CHART

Bolt Size Grade 5	Max Torque	Recommended Torque Reusable Bolt	Recommended Torque Permanent Bolt
U.N.C.	ft. lbs.	ft. lbs.	ft. lbs.
3/8	27	24	26-28
1/2	66	55	60-66
5/8	130	95	125-130
3/4	230	180	220-230
7/8	370	290	360-370
1	560	480	540-560

Maximum torque listed is 65% proof load of bolt

NOTE: It is important to note the necessity of lightly oiling bolt before use as outlined above.

PNEUMATIC TIRES ON AMUSEMENT DEVICES AND SUPPORT VEHICLES

* It is strongly recommended to carry a quality spare tire and wheel for every type you have in operation, and inflated to pressure.

* Check pressures regularly on all tires in operation and maintain to manufacturer's recommendations.

* Unless unavoidable, it is strongly recommended that repairs or the fitting of new tires to rims be carried out by experts at recognized tire dealers using correct equipment.

******CAUTION**

Respect the potential power and explosive force of air under pressure. Serious accidents have resulted from lack of awareness of the explosive potential of compressed air. Respect it as you would DYNAMITE.

The following pages of guidelines, safety precautions and procedures of tire changing are included to make all operators aware of the dangers that can be encountered by neglecting care and safety in handling tires and compressed air.

TIRE SAFETY - MOUNTING/DEMOUNTING

The following guidelines and safety procedures are intended to be used for reference only. Procedures will vary for different tire mount equipment and different types of rims. If at any time an uncertainty exists about the method of assembly or component parts or use of equipment, consult specific equipment manuals.

The following precautions apply generally for all types of tires. In addition, each section emphasizes specific precautions for each particular type of tire.

WARNING

FAILURE TO OBSERVE THE PRECAUTIONS OUTLINED IN THIS SECTION MAY RESULT IN FAULTY POSITIONING OF THE TIRE AND/OR RIM PARTS, CAUSING THE ASSEMBLY TO BURST WITH EXPLOSIVE FORCE SUFFICIENT TO CAUSE SERIOUS PHYSICAL INJURY OR DEATH.

CORRECT PROCEDURES - DO it this way.

1. Make sure that all rims are in good condition for use - not damaged, dented, or deformed.

2. Remove valve core and exhaust all air from the tire (or tires in the case of a dual assembly) before demounting. Probe the valve stem with a wire as a final check to make sure the valve is not plugged. Do not stand in front of a valve opening as dirt particles may be blown into your eyes.

3. Block vehicle in a positive manner so it cannot roll forward or backward after it is jacked up.

4. Place large hardwood blocks under the jack, regardless of how hard or firm the ground appears.

5. Place safety jacks, or crib up with blocks at an appropriate place under the vehicle, in case the jack slips.

6. Check rim diameter to be sure it exactly matches the rim diameter molding on the tire. If rim is multiple piece, check component parts to see if they are made by the same manufacturer.

7. Clean and inspect used rim parts thoroughly.

8. Use new tubes and new flaps in new tires.

9. Inspect inside of tire for loose cords, cuts, penetrating objects, or other carcass damage. Scrap tires that are beyond simple repair. Remove dirt, debris, and liquids from the inside of tire before tube is installed.

10. Lubricate with approved rubber lubricant, such as thin vegetable oil soap solution.

11. Use a clip on chuck and extension hose with remote control valve and pressure gauge, long enough to allow you to stand to one side, not in front of the assembly, during inflation.

12. Center tire properly on rim before inflating.

13. Secure lock wheel down, or place assembly in safety cage or portable safety device before attempting to inflate tire to seat beads.

14. Check for proper flange and lock ring seating.

15. Adjust air pressure to manufacturer's recommended cold operating pressure, after beads have been seated.

16. Inspect valve cores or proper air retention. Replace damaged or leaky cores.

FAULTY PROCEDURES - Do NOT do it this way

1. Don't work on tire and rim assemblies until you have reviewed safety practices and procedures.

2. Don't loosen lug nuts on duals until all air is exhausted from both tires. A broken or cracked rim part under pressure could blow apart and seriously injure or kill if lugs are removed before air is exhausted.

3. Don't ever apply heat or do repair work on an inflated tire, rim, and wheel assembly. Heat can increase air pressure to a level sufficient to burst the tire or rim.

4. Don't reinflate a tire that has been run flat or seriously under-inflated without demounting the tire and checking the tire and tube for damage.

5. Don't mix rim parts of different manufacturers unless such use is approved by those manufacturers.

6. Don't attempt, under any circumstances, to rework, weld, heat, or braze rim parts. Replace damaged parts with the same size, type, and make.

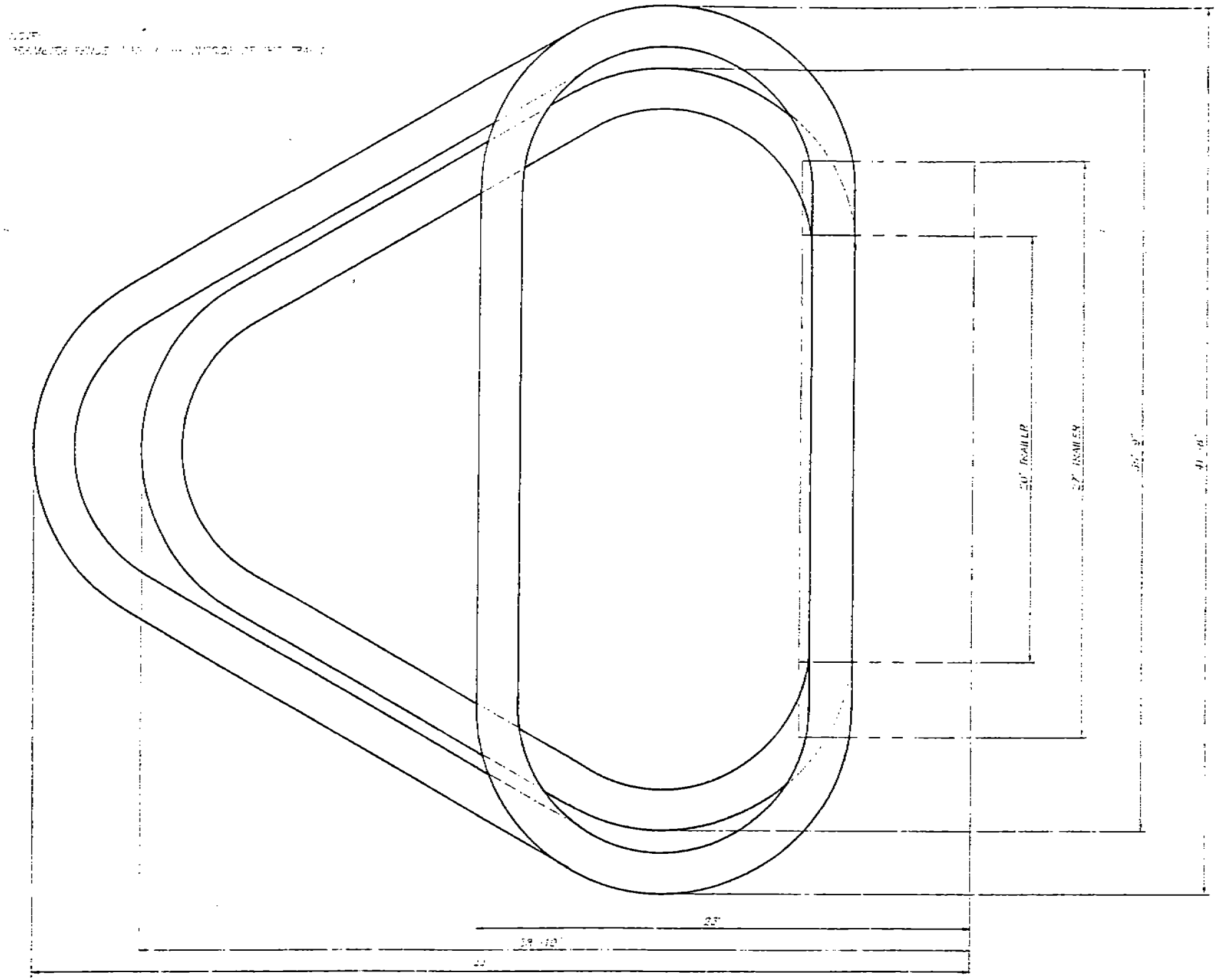
7. Don't reuse tubes or flaps that have buckled or creased.

8. Don't use a tube in a tire larger or smaller than that for which the tube was designed.

9. Don't inflate beyond recommended bead seating pressure. Don't stand over tire when inflating.

10. Don't transport fully inflated tires mounted on multi-piece rims. Inflate only enough (12-15 PSI) to keep rim parts in place. Inflate tires to correct operating pressure only after tire and rim assembly have been fastened in place, all lug nuts properly torqued, and rim parts rechecked for proper fit.

11. Do not substitute petroleum based lubricants, silicon or anti-freeze for approved rubber lubricants.



TRACK / TRAILER OPTIONS