



WISDOM INDUSTRIES, Ltd.

IMPORTANT SAFETY BULLETIN

DATE: April 12, 2004

RIDE: GRAVITRON/STARSHIP 2000

**SUBJECT: INSPECTION/ASSEMBLY/OPERATION
PROCEDURE**

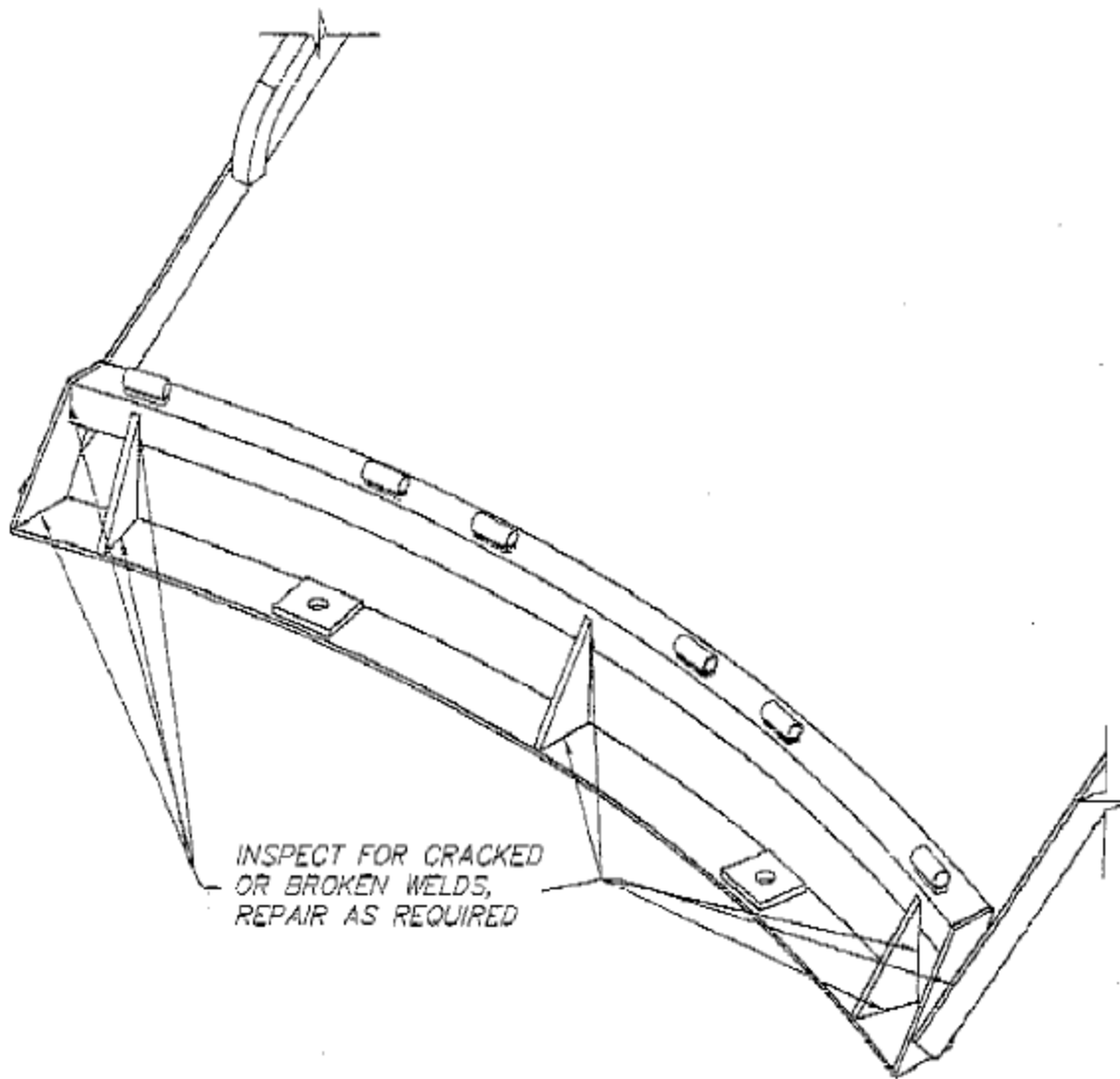
COMPLIANCE: IMMEDIATE

- 1) Inspect the welds and steel components of the internal frame of each panel for cracked or broken components.
 - ✓ **If broken components or numerous repairs have been required contact Wisdom Industries, for information on proper repair procedure. Weld cracked or broken components with 7018 rod using good welding procedure.**
- 2) Check platform hinges for wear.
 - ✓ **The best time to check the hinge for wear is when the wing is folded. Hinge bolts can be removed one at a time and the hinge checked for cracks or wear in the hinge. *NOTE: If the hinge bolt can be easily turned with the wing down check that hinge for wear.**
- 3) Check platform hinge bolts for wear.
 - ✓ **Check that the 4 outer main hinge bolts are in good condition. The hinge bolts must be grade 8. After the ride is set up if any of the hinge bolts can be turned that hinge and bolt must be checked for wear.**
- 4) Check that the platform hinge bolts are grade 8.
- 5) Check tire air pressure for 35 psi.
 - ✓ **Air pressure must be within 5 psi on all 4 tires.**

***Continued on next page**

- 6) Check wing level within $\frac{3}{4}$ inch of main table.
 - ✓ **Review procedure for checking wing level and shim wing if required.**
- 7) Check bottom strap to seat angle gussets for missing or broken gussets.
 - ✓ **If bottom strap to seat angle gussets are broken or have been welded several times, replace gussets.**
- 8) Check condition of the underwing alignment bolts. These bolts must be $\frac{7}{8}$ diameter.
- 9) Check condition of the fiberglass at the lower end of the panel. If a large amount of fiberglass is missing under the floor strap or on the vertical section just up from the floor strap this must be replaced.

❖ NOTE: ATTACHED IS OUR 8/93 BULLETIN ON PROCEDURES FOR LEVELING OF GRAVITRON/STARSHIP 2000 TURNTABLE WINGS. SEE #6



INSPECT FOR CRACKED
OR BROKEN WELDS,
REPAIR AS REQUIRED

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WISDOM INDUSTRIES Merino, CO 80741

APPROVED BY: _____

DESCRIPTION: **BOTTOM OF PANEL - WELD INSPECTION**

SCALE: QUARTER
DATE: 04/08/04

EQUIPMENT: **GRAVITRON/STARSHIP**

DRAWN BY: **JJR**

DRAWING NUMBER: **7W 039**



8-12-93

RE: LEVELING PROCEDURE FOR THE GRAVITRON TURNTABLE

The platform level should be checked annually.

Procedure:

1. Set up ride and run two or three times.
2. Lower the two outriggers or remove the idler tires.
3. Measure up from one point on the ground near the end of the outrigger.
4. Measure to the middle of the wing about where the turnbuckles attach for transporting the ride.
5. Turn the ride on quarter turn and measure the center of the main part of the turntable.
6. Turn the ride another quarter turn and measure the center of the other wing.
7. Turn the ride another quarter turn and measure the other end of the turntable.
8. The measurements should be plus or minus $\frac{1}{2}$ " of the main turntable.
9. If the difference is greater than $\frac{1}{4}$ " you should shim the wing up that is low

SHIMMING PROCEDURE:

1. Loosen all the wedges on the panels.
2. Release the pressure on the hydraulics by moving the control handle with the pump turned off.
3. Jack up on the end of the wing.
4. Slide in a 16 gauge by 2" wide by 20 foot long piece of steel between the wing and main part of the turntable.
5. Let off of the hydraulic jack and remeasure.
6. After you have determined the proper thickness of shim tack it to the main part of the turntable so that it will not fall out when the ride is running.

✓ **WARNING! BE SURE TO TIGHTEN THE PINS AND WEDGES BEFORE OPERATING THE RIDE.**

GRAVITRON CHECK LIST **AFTER SET UP**

OUTSIDE RIDE CHECKLIST

1. Check that trailer stands are tight.
2. Check that **4 wing safety bolts** are installed, tight, and safety keyed under the main turn table at the joint.
3. Check that the outrigger braces, with the turnbuckle are pinned on the side with the low ear.
4. Check that the outrigger turnbuckles are snug. Do not over tighten.
5. Check that the outrigger brace pins are all installed and have safety keys.
6. Check that skirting panels do not rub on idler tires and are not under the edge of the turntable.
7. Check that inside curved fence is safety keyed under the floor.
8. Check steps are level, stable, and no more than 8 inches to each step.
9. Check that the fence is more than three feet from the largest diameter of the turning portion of the ride.
10. Check that the cable in the canvas top is in the groove around the top of the ride panels and tight.
11. Check that work platform is folded back.
12. Check grid sign hinges and pins.
13. Check grid sign braces for safety keys.
14. Check that top sign brackets are pinned and safety keyed.
15. Check that top sign hooks are pulled down and fully engaged.
16. Check that top sign is plugged in.
17. Check that there is nothing on top of ride that can be thrown off while the ride is running.
18. Check that there is nothing that can fall onto the ride while the ride is spinning.

DRIVE SYSTEM

19. Check that drive belts are hooked up and adjusted.
20. Check that lock nut on drive belt adjusting turnbuckle is tight.
21. Check that drive wheel adjusting locknuts are tight.

22. Check that all wheel lug nuts are tight.
23. Check that all three wheel brakes work.
24. Check that idler tires have full tread contact.
25. Check air pressure in all drive and idler tires, they should be about 35 PSI.
26. Check that battery is filled with water and battery charger works.

INSIDE RIDE CHECKLIST

27. Check that 30 special top wedges are the only wedges used to pin the top of the panels to the sweeps.
28. **Check that 16 corner pins and wedges are installed between panels behind couches. (See drawing showing pin installation).**
29. **Check that 28 wedges are installed in the floor pins and are snug.**
30. Check that safety keys are in all wedges.
31. Check that couch support trusses are hooked on locks.
32. Check all panel frames for cracks in steel structure at corners and at main frame welds.
33. Check that all couches are evenly spaced and that the mounting bolts are tight. (If any are found loose use locktight but do not over tighten.)
34. Check that seats move up and down smoothly without catching.
35. Check that couplers between inside curved fence sections are all installed and pinned.
36. Check that door cables are in good condition and adjusted with equal tension.

DOOR CHECK LIST

37. Check that the door cable clamps are tight.
38. Check that door micro-switches are adjusted properly so that door opener stops at the right place.
39. Check that the door does not slip down when the door is open.
40. Check that trap door is unlocked.
41. Check that there is nothing on the floor or console that is loose or can fly out while the ride is running.

DAILY INSPECTION CHECK LIST

DAY OUTSIDE RIDE

1 2 3 4 5 6 7

CHECK

- () () () () () () () Stairs level and stable.
 () () () () () () () Fence at least 3 feet from barrel outside edge.
 () () () () () () () Work platform folded back.
 () () () () () () () Top cable in groove and tight.
 () () () () () () () Top is clear of any objects or tools.
 () () () () () () () Trailer stands tight.
 () () () () () () () 4 Turntable safety bolts tight and safety keyed.

DRIVE

CHECK

- () () () () () () () Drive and idler tires adjusted to touch rim.
 () () () () () () () Drive tire adjusting lock nuts tight.
 () () () () () () () Drive belt tight.
 () () () () () () () Drive belt turnbuckle lock nut tight.
 () () () () () () () Tire lug nuts are tight.
 () () () () () () () Tire pressure 35 PSI
 () () () () () () () Skirting panels do not touch idler tires.
 () () () () () () () Skirting is outside the edge of the turntable.
 () () () () () () () Brakes are positive.
 () () () () () () () Ride clear under the turntable.
 () () () () () () () Battery terminals tight.
 () () () () () () () Battery filled with water.
 () () () () () () () Charger turned on and operating.

INSIDE RIDE

CHECK

- () () () () () () () 16 wedges and pins in corners of panels behind couches
 () () () () () () () 30 top pins and hooked wedges installed in tops of panels.
 () () () () () () () 28 Floor wedges installed on bottom of panels.
 () () () () () () () All wedges and pins tight and safety keyed.
 () () () () () () () All seat support trusses hooked.
 () () () () () () () All couch mounting bolts tight.
 () () () () () () () All cam followers turn easily and nuts tight.
 () () () () () () () All couches move up and down easy.
 () () () () () () () Trap door is unlocked.
 () () () () () () () All panel lights plugged in.
 () () () () () () () Top of light controllers and amplifier clear.
 () () () () () () () Floor and console clear of loose objects.
 () () () () () () () Carpet clean.
 () () () () () () () Console area neat and trash picked up.
 () () () () () () () Check panel frames for cracks in steel structure.

DOOR

CHECK

- () () () () () () () Tightness of door cable clamps.
 () () () () () () () Door cables are in good condition.
 () () () () () () () Open and close stops are adjusted.
 () () () () () () () Opener clutch and brake do not slip.
 () () () () () () () Door side panels installed and pinned.

NOTES:

1. CORNER PIN GOES THRU BOTH PANEL SIDE FRAMES.
2. ALL PINS MUST BE WEDGED SNUGLY.
3. R-CLIP MUST BE INSERTED INTO ALL WEDGES.

INSPECT WELDS FOR
CRACKS AND PLATES
FOR WEAR

$\frac{5}{8}$ " ϕ TC
30 RE

INSPECT UPPER
FRAMES AND
WELDS FOR
CRACKS

LOCK WEDGE AND
SAFETY CLIP FOR
TOP PIN 30 REQ'D

$\frac{3}{8}$ " ϕ CABLE

INSPECT SIDE FRAME
WELDS FOR CRACKS
AND PLATES FOR
EXCESSIVE WEAR

SEE DETAIL A

CORNER PIN
 $\frac{5}{8}$ " ϕ PINNED &
WEDGED 16 PLACES

INSPE
SEAT
CRAC.

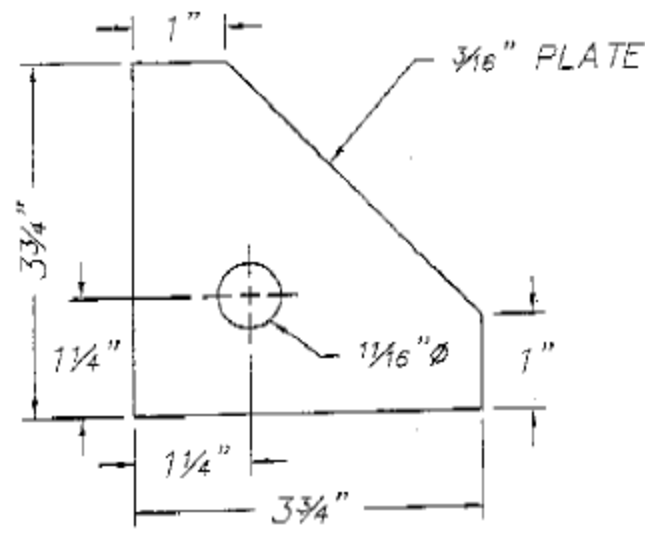
IMPORTANT

ALL PINS, WEDGES, AND R-CLIPS
MUST BE IN PLACE BEFORE OPERATION
OF RIDE.

TURNTABLE FRAME

SIDE A

N
 SWEEP



DETAIL A

CORNER PIN REINFORCEMENT
 ASTM A514 T-1 STEEL PLATE

LOCK WEDGE &
 SAFETY CLIP FOR
 PANEL CORNER
 5 REQ'D




STRAPS, SIDE FRAME,
 GUNNELS WELDS FOR
 HAND WEAR

BOTTOM PIN 3/4" Ø SCREWED
 INTO TURNTABLE, 28 REQ'D

LOCK WEDGE & SAFETY CLIP
 FOR BOTTOM PINS, 28 REQ'D



SIDE B

04/05/04		ADDED WELDING AND WEAR INSPECTION		JJR
 WISDOM INDUSTRIES Merino, CO 80741				
SCALE:	N.T.S.	APPROVED BY:		DRAWN BY: MFK
DATE:	08-25-95			REVISED
DESCRIPTION PANEL INSPECTION				
EQUIPMENT: GRAVITRON/STARSHIP 2000			DRAWING NUMBER 3W-03	