

| # | RIDE NAME | MANUFACTURER NAME | COMPONENT(S) OR FEATURE(S) IMPACTED | NDT, OTHER ACTION, & ACTION FREQUENCY | NDT OR OTHER ACTION REQUIRED BY: |
|----|----------------------------|-------------------|---|---|---|
| 1. | Sky Fighter | Allen Herschell | Stabilizing rods, threads | Non-destructive test (NDT) must be completed annually | U.S. Consumer Product Safety Commission safety notice dated June 9, 1992 and August 2, 2000 |
| 2. | All Rides | A.R.M. | General Inspection for Corrosion | Overall Ride Inspection required on all rides which are 5 years of age or older, again when ride is 10 years old and annually thereafter. Shortened intervals in corrosive environments. To be completed immediately. | A.R.M. bulletin SB20171226 dated January 3, 2018 |
| 3. | Ali-Baba aka 1001 Nacht's | A. R. M. | <p>1. Check for surface cracks in main arm joint weldment, main arm to center weldment, car mounting blocks and car frame weldments, tower bolt blocks weldment, tower to trailer weldment, car slewing ring mounting plate to arm weldment</p> <p>2. Check for surface cracks in parent metal at weld toes, edges of holes, and flame-cut edges.</p> <p>3. Check for cracks in drive-shafts in the vicinity of keyways, holes, changes in diam. and other geometric discontinuities.</p> <p>4. Check for reduction in wall thickness of hollow sections especially at weld toes.</p> | <p>Non-destructive test (NDT) must be completed every 2 years:</p> <p>1&2 check by Dye Penetrant and Magnetic Particle.</p> <p>3 & 4 Use Ultrasonic to test drive shafts and wall thickness of hollow sections.</p> | 1001 Nacht's or Ali-Baba Operations Manual, Section 6, Pages 6.10, 6.11 |
| 4. | Ali-Baba, aka 1001 Nights. | A.R.M | Welds and Parent metal in their direct vicinity in all Critical Areas indicated by drawing on P. 5.09 and described on P. 5.10 of the Manual (section 5). | NDT to be performed annually, contact manufacturer for details. | A.R.M Ali-Baba Manual, section 5. |
| 5. | High Flyer | A.R.M/UK | Welds and Parent metal in their direct vicinity in all Critical Areas indicated by drawing on P. 5.08 and described on P. 5.09 of the Manual (section 5). | NDT to be performed annually, contact manufacturer for details. | A.R.M High Flyer Manual, section 5. |
| 6. | High Flyer | A. R. M/UK | <p>1. Check for Surface Cracks in the following weldments (particularly along the throat): Main Arm Joint (at mid position), Main Arm To Center, Car Top Beam and Stay Bracket, Tower Bolt Block, Tower To Trailer, Tie Rod End.</p> | <p>All NDT to be performed Every 2 years.</p> <p>2. Use Dye Penetrant and Magnetic Particle for Surface Cracks.</p> <p>3. Use Ultrasonic for internal cracks/flaws and wall thicknesses (see High-Flyer Manual P. 6.11)</p> | High Flyer Manual Pages 6.10, 6.11 and 6.12 |

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| | | | <p>2. Check for Surface Cracks in Parent Metal at Weld Toes, Edges of Holes, Flame-cut Edges, and in all areas of possible stress concentration (contact ARM for details).</p> <p>3. Check for cracks/internal flaws in drive shafts in the vicinity of keyways, holes, changes in diameter, or any other geometric discontinuity.</p> <p>4. Check for Reduction in wall thickness of hollow sections caused by internal corrosion</p> | | |
| 7. | Quasar | A. R. M./UK | Lifting Frames, weldment of main hinge boss to Link Assembly, and in the Link Parent Metal | Annual NDT (Electromagnetic and Ultrasonic recommended) | ARM Bulletin S.B/QUA/03/003, dated February 1994 |
| 8. | Sky Master | A.R.M./UK | <p>1. Check Parent Metal for surface cracks at weld toes, edges of holes, flame-cut edges and hi stress areas. Check welds for surface cracks.</p> <p>2. Check for reduction in wall thickness in hollow sections due to corrosion, particularly in the vicinity of welds.</p> <p>3. Check for cracks and flaws in drive shafts in the vicinity of keyways, holes, changes of dia., or any other discontinuity.</p> | <p>1. Dye Penetrant or Magnetic Particle for surface cracks of parent metal or welds, every 2 years.</p> <p>2. Ultrasonic Testing for wall thickness of hollow sections, every 2 years.</p> <p>3. Ultrasonic Testing, Magnetic Particle and Dye penetrant for flaws.</p> | Manual pages 5-19 to 5.21 for the detailed requirements. |
| 9. | Sky Master | A.R.M./UK | All Bolts in the "Critical Areas". The "Critical Areas" are shown on a diagram on Page 5.09 (areas 1 thru5), and described in detail on page 5.10 of the manual, including but not limited to Tower-Tower Base fixing bolts, Car-To-Arm Fixing bolts, and Counter-weight hinge bolts. | All the Bolts in the "Critical Areas" are to be replaced Annually, according to page 6.04 of the Manual, under "Bolts to Replace In Safety Critical Areas". | The Sky Master Manual Pages 5.09, 5.10, and 6.04 |
| 10. | Sky Master | A.R.M./UK | Main arm drive pinions | Replace every 3 to five years depending on usage | Manual page 6-04. |
| 11. | Sky Master aka Tomahawk | A. R. M./UK | Refer to your owner's manual, page 5.10 | Non-destructive test (NDT) must be completed every 9 months | ARM owner's manual, pages 5.06, 5.08, 5.09, and 5.10. |
| 12. | Sky Master aka Tomahawk | A. R. M./UK | Over the Shoulder Restraints | Replace all over the shoulder restraints on your ride before the ride turns 5 year old | ARM US Bulletin SB 013007 dated 2/16/07 and Massachusetts Notice of Recommended Action Dated 8/10/06 |
| 13. | Touchdown 6 Car | A. R. M./UK | Diagrams 5.1 and 5.2 | Non-destructive test (NDT) must be completed annually | ARM Operation & Maintenance Manual, Section 5 |
| 14. | Ali-Baba, Rainbow, 1001Nights, Typhoon, Rock Star, Sindbad, Magic Carpet, Flying Dutchman, Riptide, Full-Tilt | A.R.M./UK, and A.R.M./US (in the case of the Full-Tilt). | <p>The two upper and lower Splined Drive Gears and Splined Output Shafts on the Reduction Gear Boxes of the Carriage Stabilizing Systems.</p> <p>Please read the Reference Bulletin carefully</p> | Effective immediately, and prior to continued operation of any of the indicated rides, Mandatory Inspections and checks of possible independent gear movement, indicative of possible wear in the two upper and lower splined drive gear | ARM/UK Safety Alert Bulletin No. SA010614, dated Jan 6, 2014. Completion Date: Prior To Operation. EXCEPTION: Inverter conversion S/N: AB205 and higher (Ali-Baba), And FT206 and higher (Full-Tilt), are |

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| | | | | and splined output shafts on the reduction gearboxes of the carriage stabilizing systems. The Inspection Must be Performed As Soon As the ride Completes 5 Years of Service, and monthly thereafter. If such movement is observed, disassemble the system. If wear, corrosion and/or pitting on any component is noted, please send the gearbox system back to the manufacturer for replacement of worn parts Prior To Continued Operation. Repeat the inspection and replacement of worn parts every month of operation and prior to extended storage, all per ref Bulletin. | exempt until the fifth Anniversary of Conversion per Date of Manufacture on the Ride ID plate |
| 15. | Super Shot | ARM/US | A new Auxiliary Hoist System now available to install and use in an emergency evacuation (see ref Bulletin) | The Emergency Evacuation Procedure Has Been Changed. Stop and retract current procedure. Install new Hoist System as mentioned in Bulletin. An upcoming Service Bulletin will provide further info | Bulletin No: SB022613, Release date: Feb 26, 2013, Effective Date: Feb 26, 2013. |
| 16. | Vertigo | ARM/US | 6 additional fence sections provided to increase the diameter of the fenced foot print to seventy six feet. | Larger diameter of the fencing foot-print would further enhance safety and preclude rider contact as a result of any fencing foot-print eccentricity. | ARM/US Safety Alert Bulletin No. SB090710. Release Date: 09/07/10, Supersedes: NA, Completion Date: Immediately. |
| 17. | Vertigo | ARM/US | 2 Cups welded at ends of each sweep after marking cup position using provided Templates. | a. Use provided Templates to mark position of cups' perimeters and holes for interlock pins (to be added). b. Drill holes through marked holes' positions c. Weld cups along marked cups' perimeter positions, as shown in bulletin. Cups do the job of "pick-up cables" common to all swings, in case its supporting pin fails. The smaller interlock pins are used for temporary support of seat hangers until the full size pin is installed. | ARM/US Bulletin Number SB070133, Dated July 1 st , 2013, Effective Date July 1 st , 2014, Completion Date Aug 1 st , 2013 (18 pages). |
| 18. | Aerial Trams & Lifts | All | Refer to ANSI | Refer to ANSI | Comply with ANSI 4.34.3B77.1-1982 pertaining to testing of grips or clips |

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| 19. | Coaster (steel) | Arrow | Track rails, strong back and ties, Saddle welds to strong back, Column welds | Non-destructive test (NDT) must be completed annually or every 2000 hours | Arrow technical bulletin #99-1 dated November 24, 1999 |
| 20. | Corkscrew, Loop and Suspended Coasters | Arrow-Huss | Welded areas of track, anti-roll back units, chain guide wheel spindles, axle housings, wheel carrier weldments, chassis main vertical spindle, body support frame, hitch yoke | Non-destructive test (NDT) must be completed annually | Arrow-Huss bulletin dated November 17, 1981 and January 4, 1988 and the operators Manual |
| 21. | All Rides | Battech/ Dartron | General inspection for Corrosion/Rust | Overall Ride Inspection required on all rides which are 5 years of age or older, again when ride is 10 years old and annually thereafter. Shortened intervals in corrosive environments. To be completed by May 15, 2018. | Battech bulletin# SR-5K-1801-01 Dated February 15, 2018 |
| 22. | Hurricane | Battech/Dartron (Hrubetz Supplier) | All Cars Floor Fasteners (that fasten the floor to the car), Fasteners that fasten the Cars to the Saddles, and fasteners that fasten the restraint systems to the car. The different sets of fasteners have different diameters and lengths, as indicated in the bulletin. | 1. Remove all floor-to-car fasteners, fasteners that hold the cars body to Saddles, and fasteners that hold the restraint system to the car 2. Replace all the old fasteners with special corrosion resistant Supertanium Hex Head Cap-screws. Nuts and USS washers placed under the bolt head and under the nut must also be replaced with Supertanium nuts and washers. 3. Tighten the nuts to the torque values specified in the reference bulletin. 4. Inspect to ensure that all old fasteners were replaced with the new corrosion resistant fasteners. | Dartron/Batech Bulletin# SR-H-0607-02 –A, dated 8-30-2007, and SR-H-0607-01-B, dated 4/25/2008. Please read the bulletins carefully. If you have any questions, contact Al frieden of Battech. |
| 23. | Top Gun Coaster | Bolliger & Mabillard | Per the manufacturer's requirements | Non-destructive test (NDT) must be completed annually | Manufacturers maintenance manual and letter dated December 6, 2000 |
| 24. | Ski Lift Grips Borvig | Borvig | Grips | Non-destructive test (NDT) must be completed annually | Borvig instruction manual & drawing. C-3064 |
| 25. | Ski Lift Grips Borvig | Borvig | Grips | 1. All existing grips are to be 100% NDT tested in order to establish how many grips have indications. 2. Replace all grips in which indications are discovered by the NDT, as well as all grips showing severe coining, but not less than one third of the total number of grips, prior to 11-15-2010. | Partek Ski Lifts bulletin 02-030510, dated March 5, 2010 on Borvig lifts built from 1975-1982 |

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| | | | | 3. The remaining grips can be used until 11-15-2011, at which time another 1/3 shall be replaced for a total of 2/3 of the original grips and a sufficient quantity of the remaining grips shall be tested, and, if found indications free, can be put back into service until 11-15-2012, at which time they will be replaced as well. | |
| 26. | Balloon Races | Bradley & Kaye | Superstructure, sweep support rod | Non-destructive test (NDT) must be completed annually | Balloon Races operations manual 1A thru 4 |
| 27. | All Rides | Chance | General inspection for Corrosion/Rust | Overall Ride Inspection required on all rides which are 5 years of age or older, again when ride is 10 years old and annually thereafter. Shortened intervals in corrosive environments. To be completed by March 22, 2018. | Chance bulletin B090CRM204-0 dated December 22, 2017 |
| 28. | Aviator | Chance | The area where the sweeps mount to the hub | a. Inspect the clearance between the tower guide rails and the guide blocks (or guide wheels if ride is so equipped). Total clearance (both added together) is 1/4" Maximum. b. Inspect sweep and hub areas as described in Bulletin. If any indications are found, contact Chance immediately for further action. c. Repeat a & b annually. d. Above inspections must be performed by a Certified Visual NDT Inspector | Bulletin No. B410CRM167-0, dated March 22, 2010. |
| 29. | Aviator | Chance | Vehicle Frames | Annually inspect the Vehicle Frames for cracks. If cracks are found, do not operate the ride. Contact Chance to get instructions on corrective action, including a Chance repair kit. | Chance Bulletin B410CRM126B, dated May 11, 2012 |
| 30. | Aviator | Chance | Fasteners (cap-screws) for the Vehicle Mounting Shackles. | Replace all the fasteners for the Vehicle Mounting Shackles (likely compromised by over-tightening) within 60 days of the referenced bulletin release date (see Bulletin info in the next (NDT or Other Action Req'd by) field. Tighten newly installed fasteners to 400-490 ft-lbs | Chance Bulletin No: B410CRM175-0, Release date May 11, 2012. Completion date July 11, 2012. |

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| 31. | Aviator | Chance | Sweeps | Order and install the Sweep Brace Kit, part number 410-226-001, on all sweeps by July 11, 2012. The kit was developed by Chance to reinforce the sweeps. | Chance Bulletin No. B410CRM173-0. Release Date: May 11, 2012. Completion Date: July 11, 2012. |
| 32. | Carousels: 20' Model 409, 36' Models 404, 416, 420 (Double Decker), 28' Models 403, 415, 426 (Double Decker), 50' Model 405 | Chance | All crankshafts welds as well as parent metal. Inspection areas indicated on pages 2 and 3 of 3 of the Referenced Service Bulletin | Monthly visual inspection. If any indications are observed in the in the shaft, the throw, or the welds, promptly replace the crankshaft | Service Bulletin No. B403CRM174-0, dated Sept 5, 2012. Inspect in strict compliance with the bulletin. NO LONGER IN AFFECT, SUPERCEDED BY BULLETIN: B403CRM174-A |
| 33. | Carousels: 20' Model 409, 36' Models 404, 416, 420 (Double Decker), 28' Models 403, 415, 426 (Double Decker), 50' Model 405 | Chance | All Crankshafts' U-Joints | Within 30 days of the release date of the referenced bulletin, and once a month or at every set-up thereafter (whichever occurs first), inspect all Crankshafts U-Joints for proper installation/alignment. The yokes at each end of the drive shaft shall be perfectly aligned. If any improperly aligned/phased , remove the u-joint attached to the gearbox and correct the problem. | Service Bulletin B403CRM180_0. Release Date: Sept 5, 2012. Inspection and associated maintenance to be performed in strict compliance with the referenced bulletin, page 1 thru page 5 |
| 34. | The following 36' Carousels: Model 404, Model 416, Model 420 (Double Decker, and the 50', Model 405. | Chance | Install the New I-shaped Horse Hook Retainer, Chance Part Number: 404-416-001, as per Reference Service Bulletin Instruction. | 1. Monthly inspect the crank-shaft per Chance Bulletin B403CRM174-0 2. Install the New Chance Supplied Horse Hook Retainer, Chance Part Number: 404-416-001, as instructed by the Reference Chance Service Bulletin B403CRM198-0 | Service Bulletin: B403CRM198-0 Release Date: Feb 4, 2016. Effective Date: Feb 4, 2016. Completion Date: within 60 days of the Release Date of the Bulletin. Discount applicable if Horse Hook Retainer and its Fasteners are ordered within 60 days of the Bulletin Release Date. |
| 35. | Carousels: 20' Model 409, 36' Models 404, 416, 420 (Double Decker), 28' Models 403, 415, 426 (Double Decker), 50' Model 405 | Chance | Every Crankshaft on ride | Perform mag particle inspection on all the welded joints on the crankshafts per ASTM E709 within 30 days of the issue date of bulletin and annually thereafter. Visually inspect the weld, shaft and throw area. Look for and record any indications in welds and the parent metal. This is a monthly inspection. | Service Bulletin: B403CRM174-A dated March 9, 2016 This bulletin supercedes bulletin # B403CRM174-0 |

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| 36. | Century Wheel | Chance | Weld between the main steel tube and the hub plate at the bottom of each gondola (after removing access cover) | Annual visual Non-Destructive Test | Chance bulletin number 406CRM135-0 dated 03-31-05 |
| 37. | Century Wheel | Chance | The Two Main Trailer Beams, in the overhang area, as shown on drawing on P. 2 of 2 in the Bulletin | Visual inspection of weld and parent metal around cut outs on both sides of webs and flanges of Main Trailer I-Beams, with the aid of an inspection mirror, within 30 days of Bulletin date, and annually thereafter. | Chance Bulletin No: B406CRM163-0 dated May 15, 2009 |
| 38. | Chaos | Chance | Tilt Cylinders | Annually, Magnetic Particle (MT) must be performed by a Level II or Level III NDT Inspector to inspect the areas shown on the detail drawing provided in the relevant referenced bulletin | Bulletin No. B408CRM 168-0, dated August 10, 2010 |
| 39. | Trabant | Chance | Boom | Monthly | Chance service bulletin #92 |
| 40. | Inverter and Double Inverter | Chance | Vehicle arm, counterweight arm, vehicle arm, adapter box | Non-destructive test (NDT) no longer required after May 6, 2003 - only visual inspection required | Chance 2001 field inspection guide, page 64 and page 66 |
| 41. | Falling Star | Chance | Drive sprocket | Non-destructive test (NDT) must be completed annually | Chance Rides bulletin #B391R11440 dated January 7, 1994 |
| 42. | Falling Star | Chance | 2 Vehicle Axles (Front & Rear) | 1. Calculation of Axle's accumulated number of revolutions before Nov3, 2009. 2. Axles that operated through 3 million revolutions or more must be replaced or kept only if they pass annual NDT. 4. Axles that pass NDT <u>may</u> be operated no more that 1 year thereafter, provided they pass annual NDT. | Chance Bulletin number B391CRM166-0, dated October 3, 2009. |
| 43. | Giant Gondola Wheel | Chance | Torque tube flange | Non-destructive test (NDT) must be completed annually | Chance Rides bulletin #B400R11750 dated May 17, 1996 |
| 44. | Giant Gondola Wheel, Park Model | Chance | Axle and Axle Bolting Flange. | 1. <u>Annually</u> : Visual Inspection of the Axle where indicated by arrows, and as explained by text, on page 2 of 3 of the Ref Service Bulletin. 2. <u>Annually</u> : Visual Inspection of the Bolting Flanges where indicated by arrows, and as explained by text, on page 3 of 3 of the Ref Service Bulletin. | Chance Service Bulletin No: B400CRM191-0 Release Date: Nov 21, 2014, Effective Date: Nov 21, 2014. |

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| | | | | 3. If any indications are found, contact Chance for instruction on Corrective Action. | |
| 45. | Giant Gondola Wheel, Portable Model | Chance | Axle. | 1. <u>Annually</u> : Visual Inspection of the Axle where indicated by arrows, and as explained by text, on page 2 of 2 of the Ref Service Bulletin. 2. If any indications are found, contact Chance for instruction on Corrective Action. | Chance Service Bulletin No: B400CRM193-0 Release Date: Nov 21, 2014, Effective Date: Nov 21, 2014 |
| 46. | Pharaoh's Fury | Chance | Cap-screw securing lap bar mount onto the pivot area on each side of the seat. Affected Serial Nos.: 407-00294 and on, production date: June 1994 and after | According to Bulletin B407CRM155-0, dated April 3, 2008, replace all lap bar cap-screws indicated in the preceding field within 60 days of the Bulletin date. Inspect all cap-screws for tightness per bulletin once a month thereafter. | CRM Bulletin B407CRM155-0, dated April 3, 2008. |
| 47. | Revolution 32, 24 & 20 | Chance | Under the fiberglass seats | Use ¾" diam hole saw to cut drainage hole under each seat at the location shown on page 2 of the reference bulletin. Apply paint to hole edges to prevent corrosion. Action to be completed within 90 days of bulletin receipt. | Bulletin B418CRM160-0, Dated June 30, 2011. |
| 48. | Sea Dragon | Chance | The Mast. | Either remove the (decorative) Mast, which has no impact on operation, or perform Annual NDT as follows: 1. Visual (VT) along the entire Mast, and, 2. Ultrasonic (UT) to detect possible corrosion related Mast wall thickness thinning, and 3. Magnetic Particle on all the Mast's welded joints. For details refer to Bulletin. | Chance Bulletin B387CRM171-0 dated October 25, 2011. |
| 49. | Sky Wheel | Chance | Bull wheel axle, boom axle | Non-destructive test (NDT) must be completed annually | Chance Rides bulletin #111 and Chance Rides bulletin #B379R1041-0 dated July 17, 1989 |
| 50. | Trabant Casino | Chance | Per the manufacturer's bulletin | Non-destructive test (NDT) must be completed annually | Chance Rides bulletin #92 dated December 5, 1974 |
| 51. | Wipe Out | Chance | Inspection of Turret frame for cracking | VT required within 60 days and annually thereafter. | Chance bulletin B402CRM206-0 dated June 29, 2018 |
| 52. | YoYo | Chance | Sweep lift cylinder (must be removed and sent to Chance for recertification) | Rebuild and recertification Non-destructive test (NDT) must be completed every 5 years | Chance Rides 1999 Field Inspection Test Guide, page 28 and bulletin B376R1077-0 |

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| 53. | YoYo | Chance | Sweep Lift Cylinder Bearing Assembly | Uncover assembly and insert ¼" gauge between upper bearing nut and gauge plate, | CRM Bulletin B376CRM146-B, Dated Sept 4, 2008 |
| 54. | Zipper | Chance | Boom weld at spindle | Non-destructive test (NDT) must be completed annually on all units without the Chance Rides Zipper repair kit. | Chance Rides 1999 Field Inspection and Test Guide, Zipper, page 40 & 41 bulletins B106R1057-0 and A106R1057-A dated May 22, 1990 |
| 55. | Zipper (see more Zipper Bulletins right after "All Chance Rides" & "Zummer"). Thank you. | Chance | Seat Support (K) Frames | <p>1. Annually, the Annual Inspector must inspect all disassembled sliding joints on all seat support (K) frames for cracks and corrosion.</p> <p>2. If corrosion is observed in the disassembled sliding joints of any K-Frame, wire brush to shiny metal and re-examine the part. <u>If corrosion is not superficial/instantly removed to shiny metal to allow for positive visual check, please order a replacement part from chance, as this part wall thickness thinning is not permissible.</u></p> <p>3. If you observe a crack, please follow the bulletin instruction to weld repair any crack.</p> <p>4. If you suspect a crack, use Mag Particle per ref bulletin specs, and follow the ref bulletin specified repair procedure.</p> <p>5. <u>It is always more favorable to replace any parts (if damage or deterioration is observed or suspected), by new Chance parts.</u></p> | Chance Bulletin No. B106CRM192-0. Release Date: Nov 21, 2014. Effective Date: Nov 21, 2014. |
| 56. | All Chance Rides | Chance | All cap-screws and associated nuts which are frequently disassembled in the portable rides model. | Replace at the beginning of each new operating season. Cap-screws and nuts that become damaged for any reason must be replaced immediately regardless of time in service | The Ride's Field Inspection and Test Guide |
| 57. | All Chance Rides | Chance | All Permanently Assembled Cap-screws and associated nuts | Chance requires the bolts to be changed only if they were in service for 5 years or more, and were being removed for any reason; or if they have been in service for less than 5 years and were being removed for | The Ride's Field Inspection and Test Guide. |

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| | | | | any reason and excessive torque was required to remove them. | |
| 58. | Zummur | Chance | Pinion Drive Gear, Main Bearing Gear, Hydraulic Motor Shaft | Weekly Action: 1. Pinion Drive Gear Inspection for wear or damage on the external teeth. 2. Main Bearing Gear Inspection for wear or damage on the internal teeth. 3. Pinion Drive Gear and Main Bearing Gear Lubrication: Apply - redistribute grease to the gear teeth. Annual Action: 1. Check Backlash between Pinion Gear and main bearing gear teeth. Proper Backlash is 0.010” to 0.015”. 2. Ultrasonic Testing of the Hydraulic Motor Shaft to look for fatigue indications, as described in P. 4 of the reference Bulletin. | Chance Service Bulletin B380CRM185-0, Dated Oct 18, 2013. Completion Date: Immediately. A Certified Level II Ultrasonic NDT technician must perform the straight Beam Ultrasonic Testing of the Hydraulic Motor Shaft. |
| 59. | Zipper | Chance | Spacers | Use the correct fasteners to install spacers when needed (due to Wire Rope elongation, as explained in the Chance Field Inspection and Test Guide). | Chance Bulletin B106CRM184-0 Dated 10/25/2013. This bulletin emphasizes the importance of using the correct fasteners to secure the Track Spacers. |
| 60. | Coaster | D.H. Morgan Manufacturing | Axle | Annually, as specified in manufactures manual | D.H. Morgan Manufacturing letters dated March 7, 1988 and June 22, 1994 |
| 61. | Cliff Hanger | Dartron Industries | Car hanger stem, all stem gusset welded joints. A New Back-Up safety Cable System | 1. MP test (NDT) must be completed as a one time test on all welds connecting the stem to the arch assembly in rides built prior to January 23, 2004. 2. A back-up safety cable system approved by Dartron must be added. The cable back-up system must include a cable inserted inside the stem and attached to the passenger carrier | Dartron Industries safety bulletin # SR-5K-002 dated January 23, 2004, and attached drawings |
| 62. | Cliff Hangers having Serial Numbers and Production Dates as provided in the referenced bulletin | Dartron Industries | A New Back-up Safety Cable System Connecting the Passenger Carrier Vehicles with the Lower Hanger Block connected to the Sweep (via the Upper Hanger Block) | The Cliff Hangers manufactured in the years listed under “Affected Production Dates” and/or whose Serial Numbers are listed under “Affected Serial Numbers” in Bulletin SR-5K-003, must be retrofitted with the Back-Up Safety | Dartron Industries Safety Bulletin # SR-5K-003. Dated January 27, 2004. Please visit the manufacturer website www.dartronrides.com |

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| | | | | Cable System, as per the drawings included in the Bulletin. | |
| 63. | Cliff Hanger | Dartron Industries | A critical area of support for the bearing base | Install reinforcement plates in a critical area of support for bearing plates, according to the referenced bulletin | Dartron Industries Safety Bulletin # SR-5K-1110-01, dated Nov 9, 2010. No Cliff Hanger is to be operated after Dec 31, 2010 until this bulletin is complied with. |
| 64. | Cliff Hanger SNs: 806081-5K, 807121-5K, 810061-5K, 810283-5K, 811201-5K, 902071-5K | Dartron Industries | Replacement passenger cars | Early models must replace the passenger cars with new stainless steel framed passenger cars. To be completed December 31, 2017 | Dartron Industries Service Bulletin SR-5K-1710-01-A dated November 1, 2017 |
| 65. | Cliff Hanger production dates January 1998 – November 2009 all serial numbers | Dartron Industries | Passenger car hanger stem padding | Remove original stem padding, prep stem and replace with smaller piece of padding per bulletin. To be completed December 31, 2017 | Dartron Industries Service Bulletin SR-5K-1710-02 dated November 1, 2017 |
| 66. | Zero Gravity, All Models, Production Dates Jan 03 to July 2004, S/Ns: 0301201-5R, 0302102-5R, 0303103-5R, 0303244-5R, 0310092-5R, 0312233-5R, 0403034-5R | Dartron | Cracking found in the vicinity of boom drum and reinforcement plates | Affected S/Ns not to be operated past Dec 31, 2013 unless the boom from the affected rides has been returned to Battech Enterprises, LLC facility in Salem, Oregon to have the boom drum, bearing base/motor mount plate and side reinforcement plates upgraded to current specifications, according to the referenced bulletin | Battech Enterprises LLC Bulletin No: SR-5R-1301-01, Dated Sept 12, 2013, Completion Date: Dec 31, 2013, Affected Production Dates: January 2003 To July 2004 |
| 67. | Zero Gravity, All Models, S/Ns: 0404125-5R FORWARD | Dartron | Cracking found in the vicinity of boom drum and reinforcement plates | 1. No Zero Gravity is to be operated past Dec 31, 2013 until it fully complies with the referenced bulletin 2. Contact Battech @ 503-362-2341 to purchase the reinforcement plates. 3. Please refer to the Reference Bulletin for Description of work, welder cert requirements, welding and Material specifications. | Battech Enterprises LLC Bulletin No: SR-5R-1309-02, Dated Sept 12, 2013, Completion Date: Dec 31, 2013, Affected Production Dates: July 2004 To October 2009. Adequate and firm support of the ride boom during work is indispensable to ensure the safety of personnel |
| 68. | Zero Gravity, all models, Production Dates Nov 2009 To Present, S/Ns: | Dartron | Cracking found in the vicinity of boom drum and reinforcement plates | 1. No Zero Gravity is to be operated past Dec 31, 2013 until it fully complies with the referenced bulletin 2. Contact Battech @ 503-362-2341 to purchase the reinforcement plates. | Battech Enterprises LLC Bulletin No: SR-5R-1309-02A, Dated Sept 12, 2013, Completion Date: Dec 31, 2013, Affected Production Dates: November 2009 To Present. |

| # | RIDE NAME | MANUFACTURER NAME | COMPONENT(S) OR FEATURE(S) IMPACTED | NDT, OTHER ACTION, & ACTION FREQUENCY | NDT OR OTHER ACTION REQUIRED BY: |
|-----|--|--------------------------|--|--|---|
| | 0911011- 5R FORWARD | | | 3. Please refer to the Reference Bulletin for Description of work, welder cert requirements, welding and Material specifications. | Adequate and firm support of the ride boom during work is indispensable to ensure the safety of personnel |
| 69. | Ski Lifts, General | Dopplemayer | If your equipment use Doppelmayer Detachable Grips, Please implement the requirements of the Reference Bulletin. | Follow the NDT requirements of the Reference Bulletin, which Supersedes Doppelmayer Bulletin KD11009 | Reference Bulletin: KD 150013 Dated March 17, 2015. Supersedes Bulletin KD11009. |
| 70. | Big Eli Hy-5, Eagle 16 and Double Eagle Wheels | Eli Bridge Manufacturing | Drive-rim removable bolts and pivot bolts. | Ultra sound or X-ray. In addition to NDT requirements, gives wear limits of parts (prompting replacement thereof), torque requirements for bolts, as well as other requirements. | Eli Bridge Manufacturing memo to all owners dated October 7, 2005. Per Patty Sullivan/Eli Bridge, this is a one-time requirement that Eli Bridge will send out new bulletin to clarify. |
| 71. | Eagle 16 Wheels, Double Eagle 16 Wheels, and HY-5II Wheels | Eli Bridge | All Drive Rim Removable Bolts (and Nuts), and Pivot Bolts (and Nuts) | 1. All Bolts and Nuts under "Components Impacted" must be replaced with new ones every 5 years. If bolts' age is not known, they must be replaced. 2. Annually check the Spoke Tenon Bolt or Hub Bolt connections for wear. If either the bolt or banana is worn 1/32" or more, replace them together with the bolt and banana in the same position on the other side of the spoke stack. 3. If the spoke tenon hole is worn more than 1/32" call Eli Bridge. Notes: a. Torque Drive Rim Bolts in a range of 75 to 100 foot-pounds at each set-up b. Replace any bolt if nut keeps backing off after torquing c. If a nut bottoms out on the thread before the proper torque is reached, insert a regular flat washer between the nut and spoke tab and apply the proper torque. d. If the spoke tab holes wear into ovals, ream and bush them back to original size. Call Eli Bridge for reamers and other parts. | Eli Bridge Bulletin No. 060131-16 dated January 31, 2006. Please refer to the bulletin for more detailed required action. |
| 72. | Big Eli -Model No. 5, 12, 16, HY-5, HY-5II Wheels | Eli Bridge | main axle | UT & MT NDT testing of axles that are 40 years and older on the No. 5, 12, HY-5, and HY-5II Big | Eli Bridge Man. Bulletin No: 20190501-1 dated May1, 2019, effective January 1, 2020 to be completed before start of 2020 season |

| # | RIDE NAME | MANUFACTURER NAME | COMPONENT(S) OR FEATURE(S) IMPACTED | NDT, OTHER ACTION, & ACTION FREQUENCY | NDT OR OTHER ACTION REQUIRED BY: |
|-----|------------|---|---|--|--|
| | | | | Eli Wheels before they are opened for the 2020 operating season. also mandating measuring No.16 axles built during or before 1959 to confirm that they are the 4-1/2” diameter axles and if not, replace them immediately. | |
| 73. | Scrambler | Eli Bridge Manufacturing | All Scrambler seats on rides 35 years and older | (Option 1) an ASNT (or equivalent) Level II VT/OT (Visual Testing/Optical Testing) inspector using an articulated borescope with a light and clear picture taking capabilities, OR (Option 2) the outside seat skin needs to be removed | Eli Bridge Man. Bulletin No.: 20190501-2 dated May 1, 2019 to be completed before start of the 2020 season Please refer to the bulletin for more detailed required action. |
| 74. | Expo Wheel | Wadkins Expo Wheel Inc. Expo Wheel, LLC | <ol style="list-style-type: none"> 1. The wheel’s main Spindle/Axle. 2. According to the referenced PA Safety Alert, the installation of a new Safety Cable is Mandated by the “Manufacturer”. 3. According to the referenced PA Safety Alert, a new upgraded Spindle/Axle is available from “the Manufacturer”. | <ol style="list-style-type: none"> 1. Contact the “Manufacturer” to purchase their required Safety Cable and obtain the installation procedure and instructions 2. Install the Safety Cable according to “the Manufacturer” instructions 3. Procure an Annual UT testing of the main spindle according to the manufacturer specification and in accordance with the reference Bulletin. 4. For any questions contact the PA Amusement Ride Safety Division | PA Amusement Ride Safety Division Safety Alert Dated Sept 3, 2013.Completion Date: Immediately NOTE: The reference document for this entry is the PA Safety Alert ONLY. Please do not rely on the manufacturer’s bulletin, since it does not mandate the installation of the Safety Cable, which renders the ride FAIL SAFE (see the ASTM definition). The manufacturer bulletin also does not provide instruction on what to do if the ride fails the UT test. |
| 75. | Monster | Eyerly Aircraft Company | All areas around structural modification, kit components, seat tubing | Non-destructive test (NDT) must be completed annually Non-destructive test (NDT) must be completed every 5 Years | Eyerly Aircraft Company notice dated June 12, 1981 U. S. Consumer Product Safety Council safety alert dated September 13, 1994. |

| # | RIDE NAME | MANUFACTURER NAME | COMPONENT(S) OR FEATURE(S) IMPACTED | NDT, OTHER ACTION, & ACTION FREQUENCY | NDT OR OTHER ACTION REQUIRED BY: |
|-----|-----------------------|-------------------------|--|---|---|
| 76. | Octopus | Eyerly Aircraft Company | Eccentric, sweep support rods, seat tubing | Non-destructive test (NDT) must be completed annually Non-destructive test (NDT) must be completed every 5 Years | Eyerly Aircraft Company, bulletins #0-48-86 and #0-50-86 --Per US Consumer Product Safety Council bulletin dated August 16, 1994 & September 13, 1994. |
| 77. | Octopus and Spider | Eyerly | Weldments of the Eccentric Tube Assembly (part number O-436), as shown on referenced Bulletin/Drawing | X-ray, Radiograph, or Magnetic Particle. Please contact Eyerly for testing frequency | Eccentric Crank Bulletin (undated), Drawing Number 0-50-86 (included in Octopus-Spider Electronic Manual). |
| 78. | Octopus and Spider | Eyerly | Octopus Sweep Support Rods numbers 0-956 and 0-393, as well as Spider Sweep Support Rods numbers 0-933 and 0-624, areas A and B as shown on references Bulletin/Drawing. | Magnetic Particle every 200 hours of operation. | Oct./Spider Sweep Support Rod Bulletin (undated), Drawing number 0-48-86 (included in Octopus –Spider Electronic Manual). |
| 79. | Spider | Eyerly Aircraft Company | Eccentric, sweeps w/16" base, sweep support rods, seat tubing | Non-destructive test (NDT) must be completed annually Non-destructive test (NDT) must be completed every 5 years | Eyerly Aircraft Company, bulletins #0-48-86, #0-49-86, #0-50-86 and #8-88-1 --Per US Consumer Product Safety Council bulletin dated August 16, 1994 and September 13, 1994. |
| 80. | Spider | Eyerly | Wedments of the Spider Sweep (part number 0-619), as shown on referenced Bulletin/Drawing. | Magnetic Particle, X-ray, or Radiograph. Please contact Eyerly for testing frequency | Spider Sweep 0-619 Bulletin (undated), Drawing number 0-49-86 (included in Octopus-Spider Electronic Manual). |
| 81. | Wacky Worm | Fajume | Lap Bar Activators under each tub | 1. Have the Lap Bar Activators on the lower side of each tub inspected by the annual inspector each year. 2. Weekly inspection of the Lap Bar Activators by the maintenance mechanic at every set-up. 3. The annual Inspector shall indicate in the “comments” section of the inspection report that the Lapbar Activators were functional, or were repaired and rendered functional during the inspection. | The State of RI 2013 Annual Announcement. |
| 82. | All Far Fabbri Rides | Far Fabbri | All Fasteners assembled & disassembled at each set-up | Annual UT or X-Ray, or if difficult to do, Wet Magnetic Particle may be done, replace defective fasteners | Maintenance Manual. Allowing Wet Mag Particle when UT and X-Ray is difficult to do is per Fabbri Letter Dated 12/18/09 |
| 83. | Double Shock | Far Fabbri | Vehicle attachment bolts | Replace Bolts every 3 years, or Annual NDT (contact Fabbri for type of NDT), replace bolts failing NDT. | Operation & Maintenance Manual and per Fabbri Letter Dtaed May1, 2008. Also see the “All Fabbri Rides” entry. |
| 84. | Raft Ride | Far Fabbri | Centre wheel shaft retaining socket to base frame welds | Annual Visual Inspection. For possible additional NDT contact Fabbri | NAFLIC Bulletin 350, Dated Aug 2008 |
| 85. | Kamikaze (aka Ranger, | Far Fabbri | Vehicle, tower & counterweight bolts | Non-destructive test (NDT) must be completed annually | Far Fabbri bulletin #FR-034 magnetic particle inspection is NOT acceptable, per |

| # | RIDE NAME | MANUFACTURER NAME | COMPONENT(S) OR FEATURE(S) IMPACTED | NDT, OTHER ACTION, & ACTION FREQUENCY | NDT OR OTHER ACTION REQUIRED BY: |
|-----|---|--------------------------|---|--|---|
| | Hi Flyer, Screamer or Phoenix) | | | | Preston Amusement letter dated April 20, 1994. Also see the “All Fabbri Rides” entry. |
| 86. | Ranger, (aka Kamikaze, Sky Flyer, Hammer, Sky Fire) | Far Fabbri | The Two Basil Bearings, the two relative pinions, and all fixing bolts | Replace ALL the components under “Components Impacted” after twenty years from the date of delivery | GAS (Global Amusement Service) Bulletin dated 28/9/2010 |
| 87. | Phoenix | Far Fabbri | Vehicle, column & tower bolts | Non-destructive test (NDT) must be completed annually | Far Fabbri bulletin #FR-034 magnetic particle inspection is NOT acceptable, per Preston Amusement letter dated April 20, 1994. Also see the “All Fabbri Rides” entry. |
| 88. | Ranger | Far Fabbri | Vehicle, column and tower, bolts | Non-destructive test (NDT) must be completed annually | Far Fabbri bulletin #FR-034 -magnetic particle inspection is NOT acceptable per Preston Amusement bulletin dated April 20, 1994. Also see the “All Fabbri Rides” entry. |
| 89. | Crazy Dance | Far Fabbri | Sweep hooks & welding | Non-destructive test (NDT) must be completed annually (only applies to 1990–1995 models) | Far Fabbri bulletin #FC 002 |
| 90. | Hi Flyer | Far Fabbri | Secondary sweep ends | Non-destructive test (NDT) must be completed annually | Far Fabbri Bulletin #FR-034 magnetic particle inspection is NOT acceptable, per Preston Amusement letter of April 20, 1994 |
| 91. | Sky Tower | Far Fabbri | Install a Certified “Catching Device” Between the Main Vehicle, and the Tower, to enforce the Safety System, in the event one the following problems cropped up: 1. the Steel Cable that supports the Vehicle as it travels up and down the Tower broke. 2. In case of Braking System Failure. 3. In the case of Drive System Failure. | To ensure riders safety, install a Certified Catching Device, per the Referenced NAFLIC/Far Fabbri Bulletin. This Catching Device is of the same type installed in the Elevator (Lift) Industry. The catching Device must be Designed, Installed, and tested by the Design Engineer. | Reference Safety Alert Bulletin Author: Mr. Enrico Fabbri: enrico@fabbrirides.com Safety Alert Bulletin No. 51/1 Date: 3 February 2015. Distributed by NAFLIC. |
| 92. | Sling Shot | Funtimes (Hnadeks Gesmbh | Swivel shaft and capule welds - refer to operators manual | Paint must be removed every 5 years and weld inspection completed. Some Annual Action is also required. Contact European Manufacturer for details. | Operators Manual |
| 93. | Merry Mixer (Ground Mount rides only) | Garbrick Manufacturing | Seat spindles | Non-destructive test (NDT) must be completed annually for all GROUND mounted Merry Mixers. Trailer mounted rides do not require NDT. | Manufacturer’s safety alert letter to all Merry Mixer ride owners dated July 3, 1991 |

| # | RIDE NAME | MANUFACTURER NAME | COMPONENT(S) OR FEATURE(S) IMPACTED | NDT, OTHER ACTION, & ACTION FREQUENCY | NDT OR OTHER ACTION REQUIRED BY: |
|------|--|----------------------------|---|---|--|
| 94. | 360 Degree (aka Typhoon) | General Kiddie Rides, Inc. | Main axle & axle housing, welded on shoulder supports, welded areas of legs, welded areas of counterweight, revision of the gear teeth that support the shoulder harnesses | A Magnetic Particle and Dye Penetrant non-destructive test (NDT) must be completed annually A visual non-destructive test (NDT) must be completed every 3 months | (ASTM), F-24 Committee Standards on Amusement Rides and Devices Manufacturer, General Kiddie Rides letter dated March 21, 1991 |
| 95. | 70 Degree (aka Pirate Ship or Viking Ship) | General Kiddie Rides, Inc. | Main axle & axle housing, welded areas of legs, change of security belts | A Magnetic Particle, Dye Penetrant and X-ray non-destructive test (NDT) must be completed annually | (ASTM), F-24 Committee Standards on Amusement Rides and Devices Per Manufacturer, General Kiddie Rides letter dated March 21, 1991 |
| 96. | Pirate Ship (aka 70 Degrees or Viking Ship) | General Kiddie Rides, Inc. | Main axle, axle housing, weld area of legs | A visual non-destructive test (NDT) must be completed annually Magnetic particle, Dye Penetrant and X-ray must be complete every 3 years | (ASTM), F-24 Committee Standards on Amusement Rides and Devices Manufacturer, General Kiddie Rides letter dated March 21, 1991 |
| 97. | Typhoon (aka 360 Degrees) | General Kiddie Rides | Main axle and axle housings, welded on shoulder supports, welded areas of legs, revision of the gear teeth that support the shoulder harnesses, change of security belts, welded areas of counterweight | Non-destructive test (NDT) must be completed annually A visual inspection is required every 3 months | (ASTM), F-24 Committee Standards on Amusement Rides and Devices Manufacturer, General Kiddie Rides |
| 98. | Viking Ship (aka Pirate Ship or 360 Degrees) | General Kiddie Rides, Inc. | Main axle and axle housings, Welded areas of legs | Non-destructive test (NDT) must be completed annually | (ASTM), F-24 Committee Standards on Amusement Rides and Devices Manufacturer, General Kiddie Rides |
| 99. | Steel Coaster cars | Gerstlauer | Per the manufacturer's requirements | Non-destructive test (NDT) must be completed annually | Manufacturers requirements |
| 100. | Ejection Seat Permanent 120' | Gravity Works | Towers' leg to flange welds (about 40' up from ground) | Magnetic particle, annually, plus complete owner inspection of towers every 2000 launches | Gravity Works letter to Ejection Seat owners, dated circa July, 2000 |
| 101. | Hustler and Tempest | Grover Watkins | Per the manufacturer's requirements | Non-destructive test (NDT) must be completed annually | Manufacturer's safety bulletin dated August 24, 1978 & CPSC safety bulletin |
| 102. | Swinger | Grover Watkins | Per bulletin | Non-destructive test (NDT) must be completed annually | Comply with CPSC bulletin dated June 21, 1996 |
| 103. | Rock Spin & Roll | Hampton | Tub shafts | Non-destructive test (NDT) must be completed annually | Hampton bulletin #107-91 |
| 104. | Tubs of Fun | Hampton | Both main shaft (spindle) and tub shafts (spindles) | UT testing must be completed annually on rides made before January 1, 1979. | Hampton Rides Bulletin #104-90, and Hampton Rides Bulletin #3105-90 which is an addendum to #104-90 and #105-90 |
| 105. | All Rides | Hi-Lite | All Components | Complete Overhaul at the Manufacturer's plant (every 10 years) | Rides' Manuals |
| 106. | All rides | Hrubetz | See Note under the "NDT or Other Action Required By" field for the reference bulletins | See Note under the "Action Required By" field for the reference bulletins | For Batech/Dartron Bulletins on Hrubetz rides manufactured before 1992, please see entries under: Battech/Dartron, Note: Battech Enterprises is the supplier for Hrubetz rides' parts. |

| # | RIDE NAME | MANUFACTURER NAME | COMPONENT(S) OR FEATURE(S) IMPACTED | NDT, OTHER ACTION, & ACTION FREQUENCY | NDT OR OTHER ACTION REQUIRED BY: |
|------|---|---|--|---|---|
| 107. | Paratrooper | Hrubetz/ Kilinski, Man Co, Dartron | Spindle, main spindle hub housing | Non-destructive test (NDT) must be completed annually | Man Co Manufacturing Company bulletin #QC-UI-I, Rev. 3; Bulletin #QC-MI-1-Rev O; and bulletins BU-136MC and BU-138MC Per Dartron bulletin #BU 201 PR 01 dated January 15, 2002 |
| 108. | Fireball | Hrubetz/ Manco Manufacturing Company. | Spindle, main spindle hub housing | Non-destructive test (NDT) must be completed annually | Man-Co Manufacturing bulletins CO QC-UI-I, Rev.3 QC-MI-1-Rev O BU-136MC BU-138MC |
| 109. | Enterprise | Huss | Bearing block holders, car structure parts of the roof and parts above, at and below pivot pins; and for cracks in the welds of these parts and the welds that attach these parts. | Non-destructive test (NDT) must be completed annually | U.S. Consumer Product Safety Commission - Enterprise Ride Interim Corrective Action Plan dated December 7, 1993. |
| 110. | Rainbow | Huss | Bevel gears | Non-destructive test (NDT) must be completed after every 5,000 hours of operation | Huss recommended checking procedure dated January 5, 1990 |
| 111. | Break Dance | Huss | Booms, Particularly the break area at the gondola | Buyer of used ride beware of requirements of UT testing in the referenced Vekoma Alert-Service Letter | Huss "Alert relating to amusement ride Break Dance Service Letter No. 17-10, dated 05-09-05 |
| 112. | Roller Coaster JR 30 | IE Park s.r.l | Possible crack in the Main Support Shaft of the Wheel Boogie (see ref Safety Alert). | Urgent 100% NDT of the Wheel Boogie Main Support & Shaft (UT and Magnetic Particle), order and replace parts as necessary per reference Safety Alert. | Safety Alert Bulletin No: 01-2014. Release and effective dates: 2/12/2014 |
| 113. | Super Twist | King | Per the manufacturer's requirements | Non-destructive test (NDT) must be completed annually | The manufacturer's requirements |
| 114. | Swinger | King | Per the manufacturer's requirements | Non-destructive test (NDT) must be completed annually | The manufacturer's requirements letter dated August 10, 1989 |
| 115. | After Burner | KMG | Swing arm weld of 12 sided tube to bottom bearing flange | Onetime magnetic particle test of welds. Required corrective action is to repair any cracked welds, and to install gussets to preclude future cracking. | KMG bulletin number FRBSB006, dated August 8, 2007, impacting ride serial numbers FRB-24-XX |
| 116. | After Burners, Serial Numbers KMG-XXXXFRB-24-XXX-001 through and including KMG- | KMG | Over-the Shoulder Restraints | Onetime immediate action before January 31, 2010, or ASAP if not done by then. Action includes removal of padding, visual inspection, and repair as necessary, according to procedures spelled out in the bulletin. | KMG Service Bulletin FRB24-SB007, dated December 7, 2009. |

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| | XXXX-FRB-24-XXX-036 | | | | |
| 117. | Afterburner/Fire Ball FRB24 01-39 and FRB24P 01-03 | KMG | Inspection of gondola support beam joint | Onetime immediate action A: VT inspection of interior of gondola support beam for corrosion, B: MT all four sides of the gondola support beam per drawing in bulletin, C: UT wall thickness in the areas per drawing in bulletin, D: VT performed every 20 operating days of ride. All effected rides to cease operation 12/31/17 until further notice from manufacture. | KMG Service Bulletin FRB24-SB008 dated August 2, 2017 |
| 118. | Fire Ball | KMG | Gondola arm mounting pins/shafts | UT all four shafts on each gondola support arm after 6 years from date of manufacture and yearly thereafter | KMG Service Bulletin FRB-SB005 dated August 16,2005 |
| 119. | Freak-Out | KMG | Major Structural and critical welds (contact KMG for details) | Annual Inspection by Level 1 or higher NDT company, including visual and NDT as needed. Inspection report, including welds NDT to be forwarded to KMG annually. | Manual, Section 3.3.1 |
| 120. | Freak Out | KMG | Bolts as shown on Figure 5 of Section 3.3.2. | Replace bolts annually. | Manual, Section 3.3.2, Figure 5. |
| 121. | Freak Out | KMG | Sweep Hub failure on FRB16 model Freak Out ride | Visual NDT inspection by level 2 acc ISO 9712 inspector, Dial indicator test for play in between sweep hub and gondola arm, to be done before operating unit. | KMG Safety Alert: FRB16-SB002 dated October 21, 2020 |
| 122. | Speed | KMG | Unbalanced loading can create undue stress on the Gear Box, Brake, and main drive motor | Notification on proper loading of ride, and the possible adverse consequences of out of balance loading. See reference Notification | Notification Bulletin No. SPD08-N001. Release Date: Oct. 15, 2013. Effective Date: Same as above. |
| 123. | Speed | KMG | Main Drive Gear-Box | The reference Service Bulletin: 1. Specifies a new (revised) Emergency Evacuation Action procedure in the rare event of Main Gear-Box Failure, and, 2. Requires operator training on this Emergency Evacuation Procedure, at least once a year. | Reference Service Bulletin SPDSB003 Dated October 14, 2013. This Service Bulletin supercedes and replaces Bulletin No. SPDSB002. |

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|------|--------------------------|----------------------|---|---|--|
| 124. | Twister | KT Enterprises | Carrier spindles | Annual MT of the 10 carrier spindles and VT welds | Manual |
| 125. | All Rides | Larson International | General Inspection for Corrosion/Rust | Overall Ride Inspection required on all rides which are 5 years of age or older, again when ride is 10 years old and annually thereafter. Shortened intervals in corrosive environments. To be completed April 21, 2018. | Larson International service bulletin L18-001 dated January 22, 2018 |
| 126. | Giant Loop | Larson International | Undercarriage weldments around the mounting cross tubes for the vehicle body attachment | VT monthly inspection of undercarriage cross tubes and adjacent area. Annual or 2,000 operating hours) MT NDT. Gussets to be installed per bulletin after NDT. | Larson International service bulletin L17-001 dated January 30, 2017 |
| 127. | Giant Loop | Larson International | Train to undercarriage bolts | Annual Inspection - remove rubber bushings and visually inspect all fasteners, tapered rubber bushings and bolt retaining plates. Every Two Years - replace train to undercarriage bolts. | Larson International service bulletin L16-005 dated March 16,2016 |
| 128. | Super Loop, Ring of Fire | Larson International | Hinge pins on units | Non-destructive test (NDT) must be completed every 5 years | Larson International service bulletin #94-1 dated July 18, 1994 |
| 129. | Cortina Bob | Mack | Safety bars, gondola supports, track, supports, base, center decoration, center structure | Non-destructive test (NDT) must be completed every 5 years or after 10,000 hours and monthly visual. If cracks are suspected non-destructive test/dye penetrant must be completed annually | Cortina Bob Operator's Manual |
| 130. | Himalaya | Mack | Center plate, sweep bolts, sweeps, gondola bolts, gondola frames, safety bars, gondola supports, track, supports, base, center decoration, center structure | Non-destructive test (NDT) must be completed every 10 years or after 20,000 hours/some parts Non-destructive test (NDT) must be completed every 5 years or after 10,000 hours/some parts Monthly visual and if cracks are suspected a non-destructive test/dye penetrant must be performed annually | Mack Operator's Manual |
| 131. | Matterhorn | Mack | Refer to test guidelines | Refer to test guidelines | Manufacturer's test guidelines and letter dated January, 2000 |

| # | RIDE NAME | MANUFACTURER NAME | COMPONENT(S) OR FEATURE(S) IMPACTED | NDT, OTHER ACTION, & ACTION FREQUENCY | NDT OR OTHER ACTION REQUIRED BY: |
|------|---------------|--|--|---|---|
| 132. | Musik Express | Mack | Center plate, sweep bolts, sweeps, gondola supports, gondola bolts, gondola frames, safety bars | Non-destructive test (NDT) must be completed every 10 years or after 20,000 hours Non-destructive test (NDT) must be completed every 5 years or after 10,000 hours | Music Express Operator's Manual |
| 133. | Musik Exress | Majestic | Spreader Ears | Inspect Spreader Ears for Damage and their bushings for wear: 1. Replace bushings if signs of wear are noted. 2. Replace Spreader Ears if the material thickness is less than 85% of the original thickness (original thickness is 15 mm). | Reference Bulletin: S.A. 2012-01, Release Date 10/24/12, effective date 10/24/12, Completion Date: 10/24/12. e-mail from Chris Kudler to the State of RI specified the original thickness of the Spreader Ears to be 15 mm (fifteen millimeters). |
| 134. | Musik Express | Majestic | Track | 1. A Certified Level II NDT Technician must examine each track section (100% VT-Visaul Testing). 2. Repair all cracks. Cracked welds must be ground out to chamfer by an aluminum grinding wheel. 3. Pre-heat for better penetration of the weld metal., see ref Bulletin for Aluminum weld specification. 4. Inspect welds by 100% VT as well as 100% liquid dye penetrate. | Reference Service Bulletin No: 2013-04, Release Date 8/27/2013, Effective Date: 8/27/2013. |
| 135. | Round up | ManCo Manufacturing | Main boom rocker shaft, cylinder anchor shaft, spindle, main spindle hub housing | Semi-Annually as follows: For Round-Up rides operating in Illinois on or between April 1 and Oct. 31; the NDT must be performed after March 22 and before operation. For Round-Up rides operating in Illinois on or between Nov. 1 and March 31; the NDT must be performed after Oct. 22 and before operation. | Man-Co Manufacturing bulletin CO QC-UI-I, Rev. 3: QC-MI-1-Rev O; and bulletins BU-136MC and BU-138MC, and Dartron bulletin BU0201 PR01, dated January 15, 2000 Unless at the time of the NDT inspection, the Department places a seal upon the ride prohibiting the assembly and operation until the Department removes that seal. |
| 136. | Matterhorn | Matterhorn/Petersburger Schlittenfahrt | Sweep slew rings, sweep bolts, sweeps, wheel axles, gondola, bearing pins, intermediate, rods, gondola frames, safety bars | As specified in the Matterhorn/Petersburger Schlittenfahrt's operator's manual | Matterhorn/Petersburger Schlittenfahrt's operator's manual |

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|------|------------------------|---|--|---|--|
| 137. | All Rides | Moser's Rides | General Inspection for Corrosion/Rust | Overall inspection of ride as described in bulletin within 90 days. | Moser's Rides SRL bulletin dated August 1, 2018. |
| 138. | Spring Ride, Free Fall | Moser's Rides | Carriage, seat frame, base, tower and lap bars | UT inspection at 5 years of age and 5 year intervals thereafter. Annual inspection at 15 years and thereafter. Shoulder bars maybe X-rayed. | Moser's Rides SRL bulletin SR001-2017 dated April 6, 2018. |
| 139. | Spring Ride | Moser's Rides | Safety belts installation on new updated over the shoulder restraint system. | Recommends replacing old shoulder harness with newer version shoulder harness equipped with safety belts | Moser's Rides SRL bulletin SR001-2021 Dated April 3, 2021 |
| 140. | Sea-Ray | Mulligan Engineering | Sea-Ray Main Axle, and Main Axle welds | Annual Visual Inspection on Main axle, Annual Mag Particle test on Main Axle welds. UT on Main Axle every 3 years, per referenced undated letter to NJ | Undated letter to NJ Department of Community Affairs (faxed on May 15, 2000). |
| 141. | Coaster, kiddie | Miler (only applies to coasters built after 1991) | Track & structure, car bodies & frames, wheels & axles, hitch assy., lap-bar assy. | Non-destructive test (NDT) must be completed annually on all coasters built after 1991 | Miler Coaster Operation Manual, pages 15-17 |
| 142. | Wood Coaster Vehicles | Morgan | Per the manufacturer's requirements | | Manufacturer's requirements per letters dated March 7, 1988 and June 22, 1994 |
| 143. | Coaster, full size | Philadelphia Toboggan Company | Tractor wheel frame, axle, friction wheel frame, square head axle, clutch axle, clutch, coupler pin, draw head front, draw head rear | Non-destructive test (NDT) must be completed annually | Philadelphia Toboggan Company bulletins dated April 22, 1988 and December 10, 1992 |
| 144. | Coaster, Junior Size | Philadelphia Toboggan Company | Rear coupler, front coupler, frame, spindle, spindle frame | Non-destructive test (NDT) must be completed every 2 years | Per Philadelphia Toboggan Company bulletin dated April 22, 1988 |
| 145. | Zyklon Loop | Pinfari | Welded structural joints, center plate, sweep bolts, sweeps, gondola bolts, gondola frames | Non-destructive test (NDT) must be completed after each 960 hrs of use Non-destructive test (NDT) must be completed every 10 years or after 20,000 hours | Zyklon Loop Maintenance Manual, page 19 |
| 146. | Zyklon Loop | Pinfari | 1. Cars' Components, including Chassis, Axles, Wheel Pins, and Front Axle Fork. 2. Vertical Structures. 3. Tracks. | 1. Chassis: Biennial Visual inspection by an NDT technician, Liquid Dye Penetrants if in doubt. 2. Axles: Annual UT. 3. Wheel Pins Biennial UT. 4. Front Axle Forks: Biennial UT. 5. Visual Inspection by | Per Pinfari Fax dated 2/11/2000. Contact Carlo Guglielmi at: carlo@italint.com |

| # | RIDE NAME | MANUFACTURER NAME | COMPONENT(S) OR FEATURE(S) IMPACTED | NDT, OTHER ACTION, & ACTION FREQUENCY | NDT OR OTHER ACTION REQUIRED BY: |
|------|-----------------------|-------------------|--|---|--|
| | | | | an NDT technician of Tracks <u>and</u> Vertical Frames, Liquid Dye Penetrants if in doubt. For NDT frequency, please contact Carlo Guglielmi (see e-mail next column) | For frequency of vertical frames inspection by an NDT technician. Daily track and vertical structures inspection by operators. |
| 147. | Explorer (Matterhorn) | Revershon | Capsule support axle | Non-destructive test (NDT) must be completed semi-annually or every 1000 hours | Revershon's owner's manual |
| 148. | Crazy Frog | SAFECO | <ol style="list-style-type: none"> 1. Foot Pedal 2. Ride Arms (Sweeps) | <ol style="list-style-type: none"> 1. Disable foot pedal 2. conduct UT and MT tests on critical Arm/Sweep areas, as indicated to the HSL Study report (see references in the next field, under "NDT or other Action Required By"). 3. Tests to be done twice every season, at the start and midway through the operation schedule. 4. Strictly follow instructions on the referenced document, and direct all questions to HSE/UK | <p>UK Health and Safety Executive (HSE) Bulletin Dated 1/10/2014, and the Non-Destructive Testing Schedule attached to the UK Health and Safety Laboratory (HSL) Research Report PH 05709 v2.0, Page 126.</p> <p>Please direct all questions to HSE.</p> <p>Melvin, sandell@hse.gov.uk</p> |
| 149. | Super Truck | SBF-Visa | Tube Steel members (enclosed sections) | Annually survey the wall thicknesses of enclosed section members in low areas susceptible to water collection and corrosion by UT. Contact SBF for corrective action if any member wall thickness is reduced by more than 15% of the original thickness. Determine the original thickness by getting consistent readings in high areas not susceptible to water collection (see the "Action Req'd By field). | SBF-Visa Manual, page 12 requires surveying the wall thicknesses of tube steel sections. The manual instructs the owner not to operate and to contact SBF-Visa if a section is found to be reduced by more than 15% of the original thickness. The manual does not indicate the original Tube Steel wall thickness. The NDT firm must determine the original thickness by obtaining the highest consistent thickness readings from high zones not susceptible to water collection. The number of the highest consistent readings necessary to accept the reading as the original wall thickness is left to the NDT firm. SBF was contacted but did not provide the original thicknesses information. If the original thicknesses are obtained by the owner from SBF, it shall be used as the |

| # | RIDE NAME | MANUFACTURER NAME | COMPONENT(S) OR FEATURE(S) IMPACTED | NDT, OTHER ACTION, & ACTION FREQUENCY | NDT OR OTHER ACTION REQUIRED BY: |
|------|--|-----------------------|--|--|---|
| | | | | | baseline for calculation section reduction % |
| 150. | All Rides | Sellner Manufacturing | General Inspection for Corrosion/Rust | Overall Ride Inspection required on all rides which are 5 years of age or older, again when ride is 10 years old and annually thereafter. Shortened intervals in corrosive environments. To be completed April 21, 2018. | Larson International service bulletin L18-001 dated January 22, 2018 |
| 151. | Frog Hopper and Rodeo Rider | S & S Power, Inc. | Boom, base, sheave attachment, cart and cam trigger weldments (refer to bulletin) | Non-destructive test (NDT) must be completed every 3 years. VT for pre 2004 models MT for post 2004 to 2013 models Required rope replacement 40,000 cycles of 3 years. Recommended annually. | S & S Power, Inc. bulletin 170309-A dated March 9, 2017 S & S Drawing Numbers F-FRG-BOO-W-@, 002125, and 002278 on Frog Hopper/Rodeo Rider |
| 152. | Turbo Force Stratoshere | Soriani | Tie rods | Non-destructive test (NDT) must be completed annually on rides made before 2004 with specific serial numbers | Soriani bulletin #2004 TF02 dated September 14, 2004 |
| 153. | Super Loop on top (Crazy Flip) | Soriani & Moser | Gondola arms joint | Non-destructive test (NDT) must be completed annually | Soriani & Moser Logbook pages 53, 54 |
| 154. | 20 m- 40 m Ferris Wheels, Carnival and Park models | Technical Park | Support hubs of Gondola Arms, tightness of cap screws, Bearings Maintenance and function, ensuring correct maintenance in general. * For Park Models 20 m, 25 m, and 28 m wheels, see Fig A, P. 2 of the Ref Safety Alert. * For Carnival Models 28 m and 32 m wheels, as well as for Park Models 34 m and 40 m wheels, see Fig B, P. 2 of the Ref Safety Alert. | 1. Ensure correct, timely, thorough, and thoroughly documented Maintenance of all ride components. 2. Grease Bearings as frequently as indicated in Manual to protect from deterioration and from the risk of set-screws loosening (see drawing item 2 on P. 2 of the ref Safety Alert). 3. Perform the following Maintenance on each Gondola Every 15 Days: a. Remove the cover (item 1 in Fig. A and Fig.B). b. Check/tighten any loose screws (item 2). Check bearing (item 3) for wear and rust and proper greasing. Replace parts as necessary, contact Technical Park for Guidance. | Safety Alert Bulletin No: SAB-001 Release Date: 8/19/2013. Effective Date: 8/19/2013 Completion Date: Immediately. |
| 155. | Orbiter (Sand Storm) | Tivoli | Vehicle connection frame on rides manufactured prior to 1980 | Mag Particle Non-destructive test (NDT) must be completed and visually check for corrosion (does not specify frequency) | Tivoli bulletin ORSA004 dated May 22, 2006 |

| # | RIDE NAME | MANUFACTURER NAME | COMPONENT(S) OR FEATURE(S) IMPACTED | NDT, OTHER ACTION, & ACTION FREQUENCY | NDT OR OTHER ACTION REQUIRED BY: |
|------|--|-------------------|--|---|--|
| 156. | Orbiter | Tivoli | Turret Arm Pivot Shaft | If shafts are in good visual condition, they should also be internally inspected by some accepted means of NDT (non destructive testing) | Tivoli manual dated pre-1989 Exsaco Corp. manual. Newer version manuals do NOT require this NDT. |
| 157. | Orbiter (Predator) | Tivoli | Car attachment pins | Non-destructive test (NDT) must be completed annually | Tivoli bulletin #00120 dated December 10, 1990 |
| 158. | Predator (Orbiter) | Tivoli | Car attachment pins | Non-destructive test (NDT) must be completed annually | Tivoli bulletin #00120 dated December 10, 1990 |
| 159. | Scorpion rides, Serial numbers: 4870230, 4871230, 4886230 | Tivoli | Pivot balls, main sweep flange bolts | Mag Particle or UT Non-destructive test (NDT) must be completed every 2 years on the impacted components as follows: a. Pivot balls: test 7 balls every 2 years. Document the tested balls and test results. If any ball fails, test all balls and replace balls that fail. b. Sweep Flange Bolts: Test all bolts every 2 years. If one bolt fails, all bolts must be replaced. | Per Tivoli bulletin #001 for the Scorpion Ride |
| 160. | Scorpion rides, Serial numbers: 4870230, 4871230, 4886230 | Tivoli | Ride Structure Weldments | Visual Inspections of all welds on all the structural components, including Center, Sweeps, Spinner Sweeps, Center/Trailer attachment areas and vehicle frames is required every 2 years. Report all problems to the manufacturer before any repairs are made. | Tivoli Scorpion Bulletin #001, undated. |
| 161. | Spin Out aka The Claw, Maelstrom, El Nino | Tivoli | Inspection of areas surrounding seat attachment. | UT and MT areas per bulletin. Visual inspection of complete vehicle frame. All tests should be reported to manufacture | Tivoli bulletin SOSA019 dated July 27, 2017 |
| 162. | Spin Out aka The Claw, Maelstrom, El Nino | Tivoli | Inspection of seat arms | UT and MT Requirements outlined in SOSA019 | Tivoli bulletin SOSA21 dated March 29, 2018 |
| 163. | Spin Out aka The Claw, Maelstrom, El Nino | Tivoli | Refer to bulletin | Non-destructive test (NDT) must be completed annually | Tivoli bulletin #SOSA0001-SOSA13 and U.S. Consumer Product Safety Commission safety alert dated March 30, 2004 |

| # | RIDE NAME | MANUFACTURER NAME | COMPONENT(S) OR FEATURE(S) IMPACTED | NDT, OTHER ACTION, & ACTION FREQUENCY | NDT OR OTHER ACTION REQUIRED BY: |
|------|---|---|--|---|--|
| 164. | Star Force | Tivoli | Vehicle frame, car pivot ball, vehicle sweeps, sweep spreader, main sweep arms | Non-destructive test (NDT) must be completed annually | U.S. Consumer Product Safety Commission safety alert dated September 13, 1994 |
| 165. | Mini-Miami | Unknown. Bulletin issued by an inspection group to warn of discovered defects | See ref bulletin | See damage in ride components highlighted by photos in the reference Bulletin. | Geary Power systems Bulletin Dated March 19, 2014 |
| 166. | SFC & SLC (Suspended Family Coaster & Suspended Looping Coaster) | Vekoma | L2/L3 Brake Shoe of rides manufactured before 24-08-2001, having the SNs provided in bulletin | One time action to secure Brake Shoes against “falling down from a suspended brake by a single point failure”, as detailed in referenced bulletin | Vekoma bulletin No. 1-SB-003-011106, impacting all rides manufactured after 24/8/2001 |
| 167. | Corkscrew, MK 1200, MK-900 and Suspended Looping Coasters | Vekoma | Main axle, wheel spindles, guide wheels, up stop wheels, coupling, anti-roll backs, chassis | Non-destructive test (NDT) must be completed annually | Per Vekoma Coaster Technical bulletins #V90-3 and #V90-4 |
| 168. | Suspended Looping Coaster | Vekoma | Suspended Seats. | Welds marked in blue in the Suspended Seat Drawing in Bulletin are to be tested by MT, whereas welds marked in red are to be tested by UT. Please contact Manufacturer regarding frequency of testing. | Vekoma Bulletin No. 1-SB-006-14052009, dated May 20, 2009. |
| 169. | Giant Inverted Boomerang, Hi Speed Suspended Looping Coaster, Big Air, Tilt Coaster, all equipped with the new steel Shoulder Restraints Hinge Blocks | Vekoma | New Steel Hinge Blocks of Shoulder Restraints of rides specified by serial numbers among those shown in Table 1 on page 2 of Service Bulletin SB-023-170712_00. | 1. Every 2 weeks/ 2500 ride cycles, visually inspect the hinge blocks (shown in drawing on Page 3 of Bulletin SB-023-170712_00). 2. Every year/ 120,000 ride cycles check 50% of the hinge blocks by PT/MT 3. If indications are found, replace hinge block(s) | All work to be done in compliance with Service Bulletin SB-023-0170712_00 |
| 170. | Giant Inverted Boomerang, Hi Speed Suspended Looping Coaster, Big Air, Tilt Coaster, all still equipped with the old Aluminum Hinge Blocks | Vekoma | Old Aluminum Hinge Blocks of Shoulder Restraints of rides specified by Serial Numbers among those shown in Table 1 on page 2 of Safety Alert SA-003-040412_00, Page 2 of 8 | 1. Stop operation of the rides specified on Table 1, Page 2. If the Ride is in operation for more than 7 years, replace all Shoulder Restraints’ old Aluminum bearing (or hinge) blocks with the (new material) Hinge Blocks supplied by Vekoma, and follow the new Steel Hinge Blocks of Shoulder Restraints | All work to be performed according to Vekoma Safety Alert SA-003-040412_Rev. 00, Release Date 04-04-2012, Completion Date: Immediately (04-04-2012). |

| # | RIDE NAME | MANUFACTURER NAME | COMPONENT(S) OR FEATURE(S) IMPACTED | NDT, OTHER ACTION, & ACTION FREQUENCY | NDT OR OTHER ACTION REQUIRED BY: |
|------|--|-------------------|--|---|---|
| | | | | maintenance action specified by Service Bulletin SB-023-170712_00 . 3. If the ride is in operation for less than 7 years, inspect the bearing blocks visually And with PT (contact Vekoma on the interval of PT inspection). 4. If indications are discovered, close down affected seats until new Steel Hinge Blocks are installed, and follow the maintenance action required by Service Bulletin SB-023-170712_00 thereafter. | |
| 171. | Mad House | Vekoma | Slewing Bearings of rides specified by serial numbers (or other ride IDs) in Table on page 2 of the referenced Service Bulletin No. SB-022-120612_00 | 1. Monthly visual check of the visible parts of the Slewing Bearings (SB) of the Drum for indications of cracks (see Drawing on P3 of the ref bulletin 2. At any time, if abnormalities noted (e.g. running sound), check for indications of cracks. 3. If indications are found, replace the Slew Bearing(s) | All work to be performed per instruction in the Service Bulletin No. AB-022-120612_0, pages 1 to 6 of 6. |
| 172. | All Venture Rides | Venture | All Components subject to examination, replace parts as needed | Complete Ride Overhaul every 10 years | Per Venture-Go-Round operators manual Hi-Lite of Greer South Carolina is the authorized parts supplier for Venture Rides (Now defunct) and willing to perform 10 year overhauls |
| 173. | Parachute Tower | Venture | Cylinder path, Cylinder Clevis, elevator head, tower base plate, 12" sheave shafts, attachments—turn buckle | Non-destructive test (NDT) must be completed every 5 Years | Venture manual, Section 3.1.5.3 |
| 174. | Spider Mountain | Vertical Reality | Elastic banding on all Spider Mountains | 1. By the Referenced Bulletin Completion Date, re-band all elastic banding according to the procedure described in the Ref Bulletin 2. Replace relevant section of Manual with this correct banding procedure. | VR Bulletin 1001, Release Date 11/29/2012, Effective Date: 11/29/2012, Completion Date: 11/29/2012. |
| 175. | Mini Pirate Ship- (park model), Puppy Love, Air Show, Tip A Canoe, Flying Dragoon, Flying Elephant | Visa Int'l Srl | Ride structure, axles and components | Perform NDT tests and welding checks according to new manual | Visa Service Bulletin 01-2019 Completion Date: 10/31/2019 |

| # | RIDE NAME | MANUFACTURER NAME | COMPONENT(S) OR FEATURE(S) IMPACTED | NDT, OTHER ACTION, & ACTION FREQUENCY | NDT OR OTHER ACTION REQUIRED BY: |
|------|--------------------|-------------------|--|---|--|
| 176. | Hustler | Watkins | Secondary sweep shafts, car center pins | Non-destructive test (NDT) must be completed annually | IL Carnival-Amusement Safety Board – Refer to Grover C. Watkins Inc., Emergency Safety Bulletin for Tempest dated August 24, 1978. Per the U.S. Consumer Product Commission Safety bulletin dated August 4, 1993 (car center pins) |
| 177. | Swinger | Watkins | Upright tube | Visual at every set up, if cracks are observed non-destructive test (NDT) must be completed annually | U.S. Consumer Product Safety Commission safety alert dated June 21, 1996 |
| 178. | Tempest | Watkins | Secondary sweep shafts, car center pins | Non-destructive test (NDT) must be completed annually | Grover C. Watkins Inc., emergency safety bulletin, dated August 24, 1978, and U.S. Consumer Product Safety Commission Safety bulletin dated August 4, 1993. |
| 179. | Adult Coaster Cars | Wisdom | Inspection of Wheel Bracket Assembly | Visual & dye penetrant or magnetic flux | Wisdom bulletin dated February 25, 2004. Drawing number 9C 025 |
| 180. | Avalanche | Wisdom | Check to ensure that the speed of ride rotation is 21 RPM in both directions, each time you repair or replace the Charlyn Hydraulic Drive Motor. | If speed is over 21 RPM switch the two hoses on the repaired or replaced motor. If still over 21 RPM, do not run the ride and contact Wisdom. Frequency: every time the said motor is repaired or replaced. | Wisdom Service Bulletin, Dated February 23, 2009 |
| 181. | Gravitron | Wisdom | Console Post | Annually, Turn Off Main Electrical Power, Lock Out the Disconnect, then visually inspect welds and parent metal for cracks, as detailed in Bulletin. | Part of a Gravitron Bulletin Package dated Aug 12, 1993 |
| 182. | Gravitron | Wisdom | Underwing 7/8" diameter x 8" long alignment bolts | Replace all Table alignment bolts annually | Wisdom Gravitron/Starship bulletin dated June 1, 2004 |
| 183. | Gravitron | Wisdom | Eight Platform Hinges | 1. When the wing is folded, remove the hinge bolts one at a time and inspect the hinge for cracks and or wear. 2. Contact Wisdom for hinge wear tolerance. 3. Perform this inspection annually. | 1. Wisdom Gravitron/Starship bulletin dated June 1, 2004. 2. Annual Frequency of testing per Vic Wisdom written response to Dan Ang of N.J, dated 10/15/04. |
| 184. | Gravitron | Wisdom | Eight Platform hinge bolts | Inspect to insure hinge bolts are in good condition. 1. When ride is set-up, loosen the hinge nut ½ turn 2. Use a torque wrench preset to release when a torque of 50 ft-lbs is reached to turn the bolt head. 3. If the bolt can be turned with a torque less than 50 ft-lb, take it out and check wear. | 1. Wisdom Gravitron/Starship bulletin dated June 1, 2004. 2. Annual Frequency of testing per Vic Wisdom written response to Dan Ang of N.J, dated 10/15/04. |

| # | RIDE NAME | MANUFACTURER NAME | COMPONENT(S) OR FEATURE(S) IMPACTED | NDT, OTHER ACTION, & ACTION FREQUENCY | NDT OR OTHER ACTION REQUIRED BY: |
|------|--|-------------------|--|---|---|
| | | | | 4. Replace worn bolts (or contact Wisdom for questions on tolerance). 5. Perform this inspection annually. | |
| 185. | Himalaya one truck | Wisdom | Secondary sweep ends | After the installation of the sweep reinforcement kit, weekly visual inspection, and Annual Magnaflux or Dye Penetrant test according to the reference bulletins. | Wisdom service bulletins dated March 15, 2000, November 12, 2000, Dec 20, 2000, and V. Wisdom's letter of January 31, 2001 |
| 186. | Himalaya, One Truck | Wisdom | Wheel Shafts | Visual annually, replace if wear is perceptible, UT every three years of continuous operation | Manual's Maintenance section (P45, e-Manual P 51), item 9. E-mail from Wisdom to Doug Rathbun/Illinois, dated 11/16/2010 |
| 187. | Himalaya Silver Streak, Family | Wisdom | Sweeps | Non-destructive test (NDT) must be completed annually unless sweep kit installed | Wisdom service bulletin dated April 22, 2002 |
| 188. | Himalaya Silver Streak, Family | Wisdom | Car frames and Sweeps | Perform MT of welded structures of Himalaya annually in place of UT previously required | Wisdom service bulletin #01 dated June 2022 |
| 189. | Himalaya, Square Top (aka One Truck) | Wisdom | Wheel Shafts | Replace if wear is noticed. After 3 years of service, test shafts with UT (contact manufacturer for frequency) | Manual Page 45, item 9 (Wisdom contacted by e-mail to clarify NDT frequency). |
| 190. | Laser Ship | Wisdom | Ears and their weldments, see bulletin | Magnetic Flux, Non-destructive test (NDT) must be completed annually (per Vic Wisdom not clear in bulletin) | Wisdom's service bulletin dated November 1, 2005 |
| 191. | Magic Carpet | Wisdom | Main pivot shaft, seat pivot pin | Non-destructive test (NDT) must be completed annually | Wisdom's inspection guide requirements, seat pivot pin Fabricated and Rebuilt Rides, page 10, item 9 |
| 192. | Sizzler | Wisdom | Cabbage head ears, main center pole shaft | Non-destructive test (NDT) must be completed annually | Wisdom's inspection guide, Fabricated & Rebuilt Rides, page 2, item 11 and drawing 01-100 and bulletin dated June 3, 1985 and July 1994 |
| 193. | Sizzler, Super Sizzler, Deluxe Sizzler | Wisdom | Sizzler seat belts | Mandatory Seat Belts on all Sizzler, Super and Deluxe Sizzler rides | Sizzler Bulletin July 10, 2021 |
| 194. | Storm | Wisdom | All Welds | Annual Visual Test by an AWS Certified Welding Inspector, or Equivalent | Storm Manual, Inspection & Maintenance, Item 5 under Annual Inspection |
| 195. | Twizzler | Wisdom | Car frames, rod ball swivel ends, frame pivot bushing, drive rim | Non-destructive test (NDT) must be completed annually visual | Wisdom's letter dated February 22, 2001 and the operators manual |
| 196. | Gravitron | Wisdom | Trap Door/Emergency Fire Exit, in the Ride's Floor. | Install a Micro-Switch on the frame of the Trap Door/Emergency Fire | Wisdom Service Notice dated April 14, 2015. |

| # | RIDE NAME | MANUFACTURER NAME | COMPONENT(S) OR FEATURE(S) IMPACTED | NDT, OTHER ACTION, & ACTION FREQUENCY | NDT OR OTHER ACTION REQUIRED BY: |
|------|---------------------------|-------------------|---|---|--|
| | | | | Exit in the Ride's floor, as per the reference Bulletin: 1. To mark the correct position of the Micro switch, a certified welder must go down under the ride (thru the trap door) 2. A worker would hand the Micro Switch to the welder below, who would then position the Micro Switch such that when the trap door closes, it would push down the switch button <u>completely</u> . 3. While the Trap Door is down, and completely pressing against the Micro Switch Button, the welder would make a mark along the side of the switch bracket. 4. The welder will then weld the Micro Switch bracket to the Trap Door Frame (see sketch in bulletin). 5. The wiring connections are then completed per instructions in the Reference Bulletin, so that the Ride will not run until the Trap door is properly closed. | <p><u>Very Important Note:</u></p> <p>In a phone conversation dated 1/28 between RI Ride Official Mag Guirguis and Victor Wisdom, it was agreed that <u>the Trap Gravitron Door must be functional as a mandatory Emergency Fire Exit AT ALL TIMES.</u></p> <p>As such, Please Disregard the Wisdom Rides' "Mandatory Notice" dated March 24, 2015, which calls for welding the said Trap Door shut, as such action would violate the Fire Code and pose a Grave Life Safety Risk.</p> <p>For any questions please call the RI Ride Official, Mag Guirguis @ 401-222-6330.</p> |
| 197. | Coasters | Wisdom | Design Drawing(s) for a Retrofit Checkered Plate that is required to be installed in the front seat of the coaster, in order to preclude inadvertent opening of the lap bar should the right foot of the rider comes in contact with the Lap-Bar Release Latch. | Install plate per the Wisdom Design Drawing Dated 2/28/1997. Contact Victor Wisdom if you wish to install the component shown in the older Wisdom Design Drawing Dated 9/18/1995 (of an earlier option that performs the same function). | Wisdom Ride Design Drawing Dated 2/28/1997 (which appear to supersede the earlier design dated 9/18/1995). PA Safety Alert dated July 15, 2015. |
| 198. | Crazy Bus | Zamperla | Welds on rotating hub flange | Non-destructive test (NDT) must be completed annually (only applies to rides built from 1990-1995) | Zamperla service bulletin #99CB1 dated June 28, 1999 |
| 199. | Crazy Bus | Zamperla | Motor Brake Liner | Quarterly Visual Inspection (every 3 months) | Zamperla Bulletin No: 08CB02, dated Nov 14, 2008 |
| 200. | Dragon or Tornado Coaster | Zamperla | Vertical spindles | Non-destructive test (NDT) must be completed annually | Zamperla maintenance bulletin dated January, 1991 |
| 2 | Enterprise, Mini | Zamperla | Vertical spindle | Non-destructive test (NDT) must be completed annually only if cracks are suspected | Zamperla maintenance bulletin dated January, 1991 |

| # | RIDE NAME | MANUFACTURER NAME | COMPONENT(S) OR FEATURE(S) IMPACTED | NDT, OTHER ACTION, & ACTION FREQUENCY | NDT OR OTHER ACTION REQUIRED BY: |
|------|---|-------------------|---|---|--|
| 202. | Lolli Swing | Zamperla | Center section (must check for reinforcements) | Weekly visual Non-destructive test (NDT) must be completed annually on all units without factory reinforcement | Zamperla bulletin #97LS.1 dated March 20, 1998 |
| 203. | Mini Enterprise | Zamperla | See Zamperla bulletin number 2002 ME01, dated December 6, 2002 and attached drawing | One time Magnetic Particle testing of welds, different locations. (See bulletin drawing) Monthly visual inspection of the welds thereafter. | Zamperla bulletin number 2002 ME01, dated Dec. 6, 2002 and attached drawing, plus Zamperla email dated 1/10/08. |
| 204. | Samba Balloon | Zamperla | Center column base, center frame structure | Non-destructive test (NDT) must be completed annually For rides manufactured after December 8, 1997, if Zamperla repair kit has been installed, a non-destructive test (NDT) is not required | Zamperla bulletin #97SB1 dated December 8, 1997 |
| 205. | Speedway | Zamperla | Support bars | Non-destructive test (NDT) must be completed annually | Zamperla service bulletin #99-SW1 REV dated July 2, 1999 |
| 206. | Power Surge | Zamperla | Welds on the arms, Particularly the areas as shown in the "attached" drawing. | Monthly, remove decorative panels and Visually Inspect welds as specified in bulletin and in preceding field. | Bulletin number 2008 PS01, dated 23 June, 2008, and attached drawing. |
| 207. | Jump Around | Zamperla | Hardware attaching Sweep Arms to Ride Center | Disassemble and inspect Sweep arms and ride Center, as well as hardware attaching the Sweep Arms to the Ride Center, annually. Add Lubrication Grease Fittings to Upper and Lower Sweep Arms. | Bulletin No. 2009, JA-01 explains required action and list the serial numbers of the rides covered whereby. |
| 208. | Crazy Bus, Crazy Sub, Crazy Plane, & Fire Chief | Zamperla | New Zamperla Redundancy Kit. | 1. Use the ref bulletin P. 2 instruction to identify your ride version. 2. Contact Zamperla with the Ride Version and Serial Number to procure the correct Kit for your ride, with attached installation instruction. 3. Follow the instructions to install the redundancy kit. | Zamperla Service Bulletin No:2014 CB0. Release /Effective Date: Oct 1 st , 2014 Completion Date: Prior to operation in 2015. |
| 209. | Mini Jet | Zamperla | Sweep Arm Fork weld | 1. Weekly visual inspection of all the sweep fork welds (along their entire length). 2. Annual Magnetic Particle ND testing according to ASTM E709, EN 1290, or equivalent | Zamperla Bulletin No. 12 MJ01, Release Date: 22 Aug, 2012, Effective Date 22 Aug, 2012, Completion Date: 22 Aug, 2012. Page 2 of bulletin has a drawing showing the area of interest. Affected Models: all Mini Jet models manufactured prior to Jan 1st, 1996 |

| # | RIDE NAME | MANUFACTURER NAME | COMPONENT(S) OR FEATURE(S) IMPACTED | NDT, OTHER ACTION, & ACTION FREQUENCY | NDT OR OTHER ACTION REQUIRED BY: |
|------|----------------|-------------------|---|---|--|
| | | | | | Superseded by bulletin 2019 MJ01 Dated November 1, 2019 |
| 210. | Mini Jet | Zamperla | All pins and ride structure on rides 2018 and earlier | Align older rides with most current non-destructive testing (NDT) and replacement schedule. | Zamperla bulletin 2019 MJ01 Dated November 1, 2019 Completion date: before 2020 opening season |
| 211. | Family Coaster | Zamperla | Cracks Noted in T-Bars (Lap Bars) that have been in service for more than 15 years. | Add the following New Requirements into this Ride's Preventive Maintenance Program: Annual Liquid Penetrant NDT on All T-bars (Lap Bars) using a Dye Penetrant Test, according to EN 5711 OR its US ASTM E 165 Equivalent Test. Test must be performed by a qualified/certified NDT technician. | Zampela Bulletin: 2015 FAMRC 01. Release Date: Jan 1, 2015. Effective Date: Jan 1, 2015. Completion Date: Before the first operation in 2015. |
| 212. | Samba Balloon | Zamperla | All pins, gondola shafts and ride structure on rides 2015 and earlier | NDT schedule and replacement schedule in bulletin. NDT must be performed before 2019 operation on 2015 and earlier rides All pins to be replaced on rides 10 years or older by 2020 season. All gondola shafts to be replaced on rides 20 years or older by 2020 season. | Zamperla bulletin SB-01-2018 Release date: December 1, 2018 Effective date: January 1, 2019 |
| 213. | Wave Swinger | Zierer | Various. | Numerous (see chart for Test Method Code Legend). Frequency also varies. (see chart for Time Code Legend). | Zierer bulletin (no English bulletin number) dated 05-08-04. Gives NDT requirements, detailed wear limits on parts (prompting replacement thereof). Plus maintenance instructions. |

| # | RIDE NAME | MANUFACTURER NAME | COMPONENT(S) OR FEATURE(S) IMPACTED | NDT, OTHER ACTION, & ACTION FREQUENCY | NDT OR OTHER ACTION REQUIRED BY: |
|------|---|-------------------|--|---|---|
| 207. | Wave Swinger | Zierer | <p>1. Suspension Pin 2. Lifting Rope and 3. Hydraulic Cylinder.</p> <p>The Action required under the “NDT or other Action” field, applies to the above impacted items in all “Wave Swingers” having the serial numbers provided in the reference bulletin.</p> | <p>1. Perform NDT on the Lifting Cylinder Suspension Pin (contact the Zierer for details on the NDT). Perform steps 2, 3, and 4 IF the Suspension Pin PASSES the NDT</p> <p>2. Install a Rope Monitor (Article No: 80063), consisting of two sets of sensors to monitor the smooth movement of the Lifting Cables, and whose signals are to be subsequently integrated into the ride control system. This modification requires at least three additional slip rings at the slip ring assembly in the lower mast portion. If spare slip rings are available on your unit we recommend the addition of the rope monitor to your Wave Swinger on the next occasion (e.g. winter rehab).</p> <p>3. Install 2 U-shaped Retaining Elements (Article No HZ020078) to pick up the cylinder joint head in case of a local failure of suspension pin, and to thus preclude a more general failure. 4. Install one additional Lifting Cylinder Bottom Protection Plate (Article No: HZ020079), to preclude a more general failure in case of suspension pin failure. For additional information regarding installation, details, and pricing, contact the manufacturer.</p> | <p>Zierer Bulletin # SB-WS-1001, dated Feb 2, 2012 and SB-SW-1001_rev1, dated Dec 18, 2012.</p> <p>Note1: The last 2 paragraphs of item 2 in the “NDT or other Action” field (in blue text), were added based on advise by Zierer (Ref. Mr. Martin Weinberger e-mail).</p> <p>Note2: Please read the reference bulletins carefully. Contact Zierer for any questions.</p> |
| 208. | Wave Swinger 32, S/Ns: 8200001 thru 8200022 | Zierer | Zierer Wave Swinger Safety Cables | Reminder to retrofit your ride (see S/N range) with the Safety Cables, per procedure provided in Notification, if not already done | Zierer Notification number NO-WS-1003, dated July 7, 2013 |
| 209. | Wave Swinger 40, S/Ns: 8220002 to 8220010 | Zierer | Zierer Wave Swinger Safety Cables | Reminder to retrofit your ride (see S/N range) with the Safety Cables, per procedure provided in Notification, if not already done | Zierer Notification number NO-WS-1003, dated July 7, 2013 |

| # | RIDE NAME | MANUFACTURER NAME | COMPONENT(S) OR FEATURE(S) IMPACTED | NDT, OTHER ACTION, & ACTION FREQUENCY | NDT OR OTHER ACTION REQUIRED BY: |
|------|--|-------------------|-------------------------------------|--|--|
| 210. | Wave Swinger 48, S/Ns: 8042001 thru 8042123, and 8042901, thru 8042920 | Zierer | Zierer Wave Swinger Safety Cables | Reminder to retrofit your ride (see S/N range) with the Safety Cables, per procedure provided in Notification, if not already done | Zierer Notification number NO-WS-1003, dated July 34, 2013 |