

Mr. New Braunsfel Gen'l
"Castaway Island"

Rev. Kiddie

WALSTON

Broward County Parks and Recreation Division

T.Y. Park/Castaway Island Water Play Structure

by New Braunsfel General Store International, Inc.

Operations and Procedures Manual

August 18, 1998

Submitted by:



Recreational Design & Construction, Inc.

6555 N.W. 9th Ave., Suite 201, Fort Lauderdale, FL 33309 • (954)771-5567

**Operations and Procedures Manual
For
Castaway Island Play Structure**

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This manual provides guidelines and recommended rules and regulations for the safe and efficient operation of the Castaway Island Play Structure. New Braunfels General Store International recommends that the contents of this manual be used as a part of a complete operational training program designed by the park's management.

Design and engineering of the Castaway Island Play Structure includes an array of associated water play elements which are incorporated with the overall layout, including slides and participatory water play features. As with any water ride, park operators must monitor the Play Structure for operational problems and unforeseen circumstances. New Braunfels General Store International is committed to ensuring that its equipment always be operated with the safety of the riding public in mind.

CASTAWAY ISLAND PLAY STRUCTURE RULES AND REGULATIONS

Management should use its best efforts to ensure that each patron understands the instructions and rules posted on the signs at the entrance to the activity area. The signage attached hereto is recommended. If billboards and other advertisements for the Play Structure is displayed in a language other than English, then all signage should also include the rules and instructions in the advertised language.

This overview of the rules and regulations NBGSI recommends is for water park management use in determining liability issues and security and safety needs. Control of the environment must be maintained by the water safety personnel at all times whenever the Play Structure is operational. *All rules must be strictly enforced in order to prevent accidents to guests and/or damage to the Play Structure.*

The following are recommended general regulations for your water park management and staff:

1. No diving should be allowed because of the shallow water depth.
2. Children should not be unattended. Because of the multi-levels and size of the Play Structure children should not be left alone. A parent or guardian must accompany small children. Suggested minimum height for children should be no less than 42" tall.
3. One person at a time on slides. All riders must slide feet first. Guests riding open body or flume slides and tube slides must ride laying on their backs with ankles crossed and arms across their chest. Riders should wait behind starting area until previous riders are at the bottom of the slide. Water safety staff should not load the slide until the previous riders have exited the landing zone. No one at any time should be allowed to take a running head start or be pushed by any one on any ride.
4. No double riders allowed. Two riders on the same slide is prohibited.
5. No crawling up slides. Riders must exit the landing zone immediately after completing their ride.
6. No running, horseplay or unruly behavior. No one should be allowed to stand, sit, or climb over walls, railings, or roof tops.
7. No tubes or chairs allowed in pool.
8. Guests wearing sunglasses or prescription eyeglasses should wear an eyeglass strap.
9. Glass should not be allowed in the park.
10. No kneeling, standing or stopping should be allowed on slides.

MAINTENANCE DOCUMENTATION PROTOCOL

The Castaway Island Play Structure you have purchased is a custom engineered system unique in the world of water park attractions. Hundreds of hours of engineering and design, fabrication and construction went into your Play Structure. Maintaining your Play Structure is an investment in its longevity and serviceability.

New Braunfels General Store International strongly recommends that all conditions requiring attention after an inspection be repaired before the slide operates again. In addition, we recommend that all repairs of any kind performed on the Play Structure and associated water elements be documented to provide a complete safety record.

All Play Structure pumps and pumps for associated water elements that have been designed especially for your attraction should be turned off and placed in a zero-energy state before conducting inspections and repairs. All power and controls to the slides and water elements must be locked out before beginning any maintenance, inspection or mechanical work of any kind. Locking out the controls serves to prevent injury to the inspector (s) and personnel working on the structure, slides or water elements. These procedures also serve to prevent possible damage to the Play Structure, water elements and/or slides.

All inspections should be performed by a qualified operations supervisor or mechanic.

Local jurisdictions may require additional inspections and the operator to affix an inspection and maintenance tag or sticker to the documentation or water element itself. Check with local authorities for requirements in your locale.

A sample maintenance log and inspection checklist are included with this manual. Feel free to use them or devise your own.

The pre-operational inspection check list should be completed and reviewed daily by the appropriate supervisor. Bring any problems found during the daily inspection to the attention of appropriate authorities.

New Braunfels General Store International strongly recommends that any maintenance requirements and repairs on the surface or overall integrity of the Play Structure or its associated water elements be repaired before allowing the public to enter the Play Element.

FLUME SLIDE SIGNAGE

NBGSi recommends a minimum of two signs to advise users of the open flume slide elements. One sign should be posted at the bottom of the entrance leading to the start tubs for these slides. A second should be at the top of the slide loading area near the start tub.

1. This is a participatory activity. It is not recommended for non swimmers, small children, expectant mothers, persons who are overweight, or have physically limiting conditions, or back, neck, or heart problems.
2. Please wait until the lifeguard instructs you to enter start tub.
3. One rider at a time.
4. Guests must ride laying on their backs with legs crossed at their ankles and arms crossed on their chest.
5. Exit landing pool immediately.
6. Do not attempt to stop or slow down in the slide.
7. Failure to abide by these rules may result in injury to you and to others.

NOTE:

NBGSi strongly recommends that water safety staff dispatch riders in the open flume slide(s) simultaneously to avoid injury.

**MAINTENANCE INSPECTION CHECKLIST
FOR THE CASTAWAY ISLAND PLAY STRUCTURE**

SERVICEABLE

Entrances / Exits

Crawl walkways / bridges

Rope handles / netting

Handrails

Stairways

All levels are clear of debris, slip hazards

1 2 3 4 5

All water elements have been inspected

1 2 3 4 5

Slides walked and fiberglass is in operating condition

1 2 3 4 5

Slide start tubs

Signs visible, in good repair

Landing pool and exit stairs

Walkways around landing pool

Slides tested

INSPECTED BY

TIME

DATE

MANAGER

TIME

DATE

PROCEDURE FOR SUPPLYING WATER TO MANIFOLDS

Caution: *Manifold pressure must never be allowed to exceed 75 psi, either continuous or peak.*

1. For initial start, open all ball valves on manifolds.
2. Slowly open main supply valves to the manifolds.
3. Adjust flow from various features by slowly throttling back on ball valves.
4. To shut down unit, slowly close main supply valves. Leave ball valves in their present position.

WINTERIZATION AND STARTUP

Winterization

Proper winterization at the end of the season will help prevent unnecessary freeze damage and weathering. Draining water from all lines and manifolds is of primary importance. All vertical manifolds will normally drain back into the main piping system. Horizontal manifolds should be equipped with a drain fitting on the underside to facilitate complete draining. Flexible water lines must also be checked to ensure drainage, especially those on lower water features. Hoses that still contain water will seem heavy. Hoses that are sagging with trapped water can sometimes be drained by lifting the low point, allowing water to drain to the manifold. A few hoses may need to be blown out with air. Hoses that are difficult to drain may be equipped with unions at convenient locations to allow drainage (hose ends should be marked to allow easy identification when reconnected).

Small Tipping Buckets will need a small hole in the bottom to allow draining of rain water.

Foam Pads and Landing Flaps should be removed and stored indoors. Any permanently attached foam padding on slides or other play elements should be washed clean then covered with clear plastic. Netting will also last longer if stored indoors over the winter months.

Startup

Reconnect and reinstall all items mentioned in the Winterization section above. Inspect all aspects of the play elements carefully to ensure all fasteners are secure, and that all slide surfaces are free from damage. Particular attention should be paid to any mechanisms such as the Spinning Roof. Repair any areas with chipped or peeling paint.

Reconnect all loose water lines. Refer to "Procedure for Supplying Water to Manifolds" elsewhere in this manual. After slowly building up pressure to the manifolds, inspect all water features for leaks or clogged nozzles.

Conduct routine maintenance inspections per checklists.

SUGGESTED STAFFING

NBGS recommends an adequate number of water safety staff members to fully cover the surveillance of all customers on the Play System. Additional staff may be necessary depending on

customer volume.

Water safety staff must remain alert and attentive at all times. These personnel should be trained in water safety procedures, able to recognize guests needing assistance, and trained to react to that need in a proper and safe manner.

An assignment rotation and break schedule should be implemented for water safety staff to prevent boredom and the loss of alertness. Station and assignment rotations should occur a minimum of once per hour.

New Braunfels General Store International strongly recommends that operators employ these staffing locations:

1. Entrances and exits of slides must be monitored by water safety staff.
2. All stairs should be visible in a water safety staff member's zone of coverage.
3. Staff members must keep in mind the safety of the guests at all times.
4. The entire activity pool and play system should be visually covered by staff.

Note:

NBGSi strongly recommends that *all* areas of the pool and play system be in a staff member's zone of coverage and monitored.

Compliance
ASTM Committee F-24

**F 1193-95 Standard Practice for an Amusement Ride and Device Manufacturer
Quality Assurance Program**

1. **Scope.** This practice covers the minimum standards for a quality assurance program.
2,3 - N/A
4. **Drawing Control Procedure**
 - 4.1 Process in place for providing manufacturing drawings and revisions to production and manufacturing personnel. Conceptual design, Slide engineering, Manufacturing engineering, and Production.
5. **Material and Component Control Procedure**
 - 5.1 All drawings call out slide components and hardware. Standards are in place for fiberglass fabrication, make up, and production processes. Quality control takes place on the production floor to assure compliance with engineering specifications.
 - 5.1.1 Purchasing agent receives all information necessary to order proper materials to complete the manufacture of the ride components.
 - 5.1.2 Receiving agent takes delivery of all components and materials.
 - 5.1.3 Proper rotation of raw material stock are taken care of by departmental personnel. Items are properly marked for future use.
 - 5.1.4 MSDS files are kept for reference on all applicable materials.
6. **Inspections**
 - 6.1 Production personnel are responsible for checking manufactured parts against engineering specifications.
 - 6.2 Inspection procedures of raw materials and components are done within the receiving and production areas.
 - 6.3 Completed product is checked at the time of manufacture, staging, and at the time of shipment. If applicable, jobsite supervisors are responsible for checking product and components at the time of delivery.
 - 6.4 Components that are non-conforming are marked and placed in an area to be recycled.
 - 6.4.1 Components that are not suitable for use are disposed of or marked for recycling.
 - 6.4.2 Reworked components are inspected prior to shipment. All possible defects are reworked and sold as used components.
 - 6.4.3 Quality control deficiencies are noted and discussed at weekly production meetings.
7. **Welding**
 - 7.1 *See that section*
 - 7.2 Welders on projects are certified grades F1, F2, and F3 and documentation is maintained on site of these personnel.

F 698 - 94 Standard Specification for Physical Information to be provided for Amusement Rides and Devices

1. **Scope.** This specification covers the minimum requirements for information that shall be provided by the manufacturer or seller of new amusement rides or devices as a part of the initial sale or transfer to the first end user.
- 2 - No response
3. **Information requirements**
 - 3.1 Information to be included on the Ride information plate:
 - 3.2 Information plate must include:
 - 3.2.1 Ride Serial number
 - 3.2.2 Ride name and manufacturer
 - 3.2.3 Ride model number
 - 3.2.4 Date of manufacture
 - 3.2.5 Ride speed
 - 3.2.6 Direction of travel

- 3.2.7 Passenger capacity by weight
- 3.2.8 Passenger capacity by number
- 3.3 Ride duration
- 3.4 Recommended balance of passenger loading. This is handled by assistants and lifeguards placed at various locations on the ride, with one or more at the start of the ride. This is explained in the Operations and Maintenance Manual that is provided to the owner/operator at the time of sale or delivery of the ride.
- 3.5 Environmental Restrictions. This is handled by the owners management team. Inclimate weather will affect the rides operation and safety of the riders.
- 3.6 Recommended Passenger Restrictions. Provided in the Operations and Maintenance Manual.
- 3.7 Electrical Power Requirements. Basic schematic drawings for ride electrical are provided to the purchaser if in the contract. Otherwise, basic specifications are given to the purchaser so that the local contractor can design the service to the ride. NBGS does not engineer electrical requirements due to the nature of various local codes and ordinances.
- 3.8 Mechanical Power Requirements. Minimum horsepower requirements are provided on plumbing schematic for specific rides.
- 3.9 Water flow. Minimum water requirements are called out at time of ride design. Specific GPM rates are required in order for the ride to function properly. This information is provided to purchaser in order to complete requirements if not purchased as a package with the ride.
- 3.10 Static Information. This information is provided in the design phase and is provided to engineer for the design of the start tower, if applicable, and all portions of the slide support structures (columns, footings, etc.) and any other components for support. Usually not provided to the client or purchaser.
- 3.11 Dynamic Information. Same as 3.10 for engineering purposes.
- 3.12 N/A
- 3.13 Fastener Schedule. Provided in the manufacturing engineering phase of design taking into consideration the static and dynamic forces.
- 3.14 Load distribution per footing. Calculated with the footing and column design by the structural engineer.
- 3.15 Elements and Structures. When applicable, all information about the proposed site, (survey, topography, existing structures, wind, seismic and snow loading) information is incorporated into the design.
- 3.16]
- 3.17]
- 3.18 [16,17,18 - if applicable, all are incorporated into the ride design.

F-770-93 Standard Practice for Operation Procedures for Amusement Rides and Devices.

- 1. **Scope.** This practice establishes information for operating procedures of amusement rides and devices.
- 2 - N/A
- 3. **Manufacturers Responsibility**
 - 3.1 Maintenance and Operational Manual provided to ride purchaser at the time of installation. Providing information required in sections 3.1.1 to 3.1.4.4. Supervisors on site during the installation and start up of a ride provide purchaser or purchaser's representative with instructions on how to operate the ride and its various components.
- 4. **Owner/Operator's Responsibility - N/A**

F 846-92 Standard Guide for Testing Performance of Amusement Rides and Devices

1. **Scope.** This guide covers the basic tests which shall be conducted on amusement rides and devices during prototype development, installation or erection, following major modifications, and during normal operation to determine that the performance of a given ride or device meets the manufacturer's specified design criteria.

2,3,4

5. Developmental Testing by the Manufacturer

5.1 Prior to sale or installation of a ride or device, extensive testing is done for safety, durability, and operational limits. The ride is then installed in an operational park for further testing and evaluation for safety, design, and revisions.

6. Installation Testing

6.1 Installation Testing

6.1.1 **Materials Testing.** All materials testing is based on industry standards and where possible, reference ASTM and Local Code Authority standards.

6.1.2 **Erection/Modification Acceptance Testing.** Welding and fastening inspections are done by field personnel. Welding and fastening schedules are referenced to ASTM and other industry standards.

6.1.3 **Performance Testing.** There are no set installation procedures for our slide or element installations. Field installation crews are responsible for following installation guidelines and specifications.

7. Operational Testing

7.1 to 7.2.5 - *See Section #6*

8. **Non-Destructive Testing - (NDT)** Ref. 8.1.1 "Non-destructive testing" is the development and application of technical methods such as radiographic, magnetic particle, ultrasonic, liquid penetrant, electromagnetic, neutron radiographic, acoustic emission, visual, and leak testing to examine materials or components in ways that don't impair the future usefulness and serviceability in order to detect, locate, measure and evaluate discontinuities, defects, and other imperfections; to assess integrity, properties and composition; and to measure geometrical characters. NBGS does not do NDT testing.

F853 Standard Practice for Maintenance Procedures for Amusement Rides and Devices.

1. Scope

1.1 This practice establishes information for maintenance procedures of amusement rides and devices.

2,3 - N/A

4. **Manufacturer's Responsibility.** At the time of installation, the information pertaining to this ride are included in the Operations and Maintenance Manual provided the purchaser. (See Attached)

5. **Replacement Parts for Amusement Rides and Devices.** Replacement parts or upgrades are available for purchase from NBGS International.

6. **Owner/Operator Responsibility.** Outlined in the Operational and Maintenance Manual

F1159 - 94 Standard Practice for the Design and Manufacture of Amusement Rides and Devices.

1. Scope

- 1.1 This practice establishes information and procedures for the design and manufacture of amusement rides and devices.

2,3 - N/A

4. Procedures for developing documentation and records.

- 4.1 Design and Calculations. This information is generated on a "ride specific" basis and is available through the slide engineer.
4.2 Drawings and Records. Ride conceptual and engineering drawings are kept on file electronically and in hard copy form.
4.3 Testing. Documentation of ride testing is accomplished through video and field notes.

5. Design in Accordance with Passenger Weights. Slides are designed beyond ASTM minimum standards.

6. Passenger Carrying Devices. Not applicable to the ride in question.

- 6.3 Passenger clearances. When the slide is designed, minimum clearances are designed into the ride to prevent injury to the passengers on the ride.

7. Amusement Ride and Device Structures

- 7.1 Metal Structures. In the design of Metal structures, AISC manual of Steel Construction is used as a reference guideline.
7.2 Timber Structure. N/A
7.3 Welding Certification. Welders certified at levels F1 to F3.
7.4 Bolting Specs. Called out in the engineering drawings for each job.

8. Electrical Components

- 8.1 Electrical Component schematics are designed to NEC standards and left to local electrical contractor installation and adherence to local codes and ordinances on the installation. NBGS does not engineer the electrical systems for the rides. Schematics are provided to the local contractor for their design to local codes and ordinances.

9. N/A

10. Pneumatics N/A

11. Operator Controls

12. Brakes

13. Machine Guards

14. Fencing for Amusement Rides and Devices Manufactured after January 1, 1993

- 14.1 Fences and gates provided in start tower design if purchased.
14.1.1 Fences are at a 42" height above the finished floor or deck level.
14.1.2 Protective barrier is designed as such to not allow the passage of a 4" sphere.
14.1.3 Solid construction. No overturning or disconnection by spectators or riders.
14.1.4 Loading gates open away from the ride.
14.1.5 Gates designed not to cause interference with the ride or cause a hazard.

NOTES

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