Designation: F1193 – 23

Standard Practice for Quality, Manufacture, and Construction of Amusement Rides and Devices[1]

This standard is issued under the fixed designation F1193; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This practice establishes the minimum requirements for a quality assurance program and the manufacturing of amusement rides and devices (including major modifications).

1.2 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.3 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

E543 Specification for Agencies Performing Nondestructive Testing

F770 Practice for Ownership, Operation, Maintenance, and Inspection of Amusement Rides and Devices

F1950 Specification for Physical Information to be Transferred With Used Amusement Rides and Devices (Withdrawn 2008)[3]

F2291 Practice for Design of Amusement Rides and Devices

2.2 *AWS Standards:*[4]

As applicable.

2.3 *ASME Standards:*[5]

As applicable.

2.4 *ASNT Document:*[6]

Recommended Practice SNT-TC-1A Personnel Qualification and Certification in Nondestructive Testing

3. Significance and Use

3.1 The purpose of this practice is to provide the minimum manufacturing requirements for amusement rides and devices and to provide the minimum requirements for a written quality assurance program for an amusement ride or device manufacturer, or component supplier. This is not intended to include suppliers of off-the-shelf components (for example, fasteners, electrical wire).

4. Quality Assurance Program

4.1 The manufacturer of an amusement ride or device shall have a written quality assurance program as specified in Practice F1193 for use in conjunction with the design, manufacture, construction, modification, or reconditioning of the amusement ride or device.

4.2 Quality assurance documents, that is, material certifications, test reports, and inspection reports, shall be retained for a period of time as deemed appropriate by the manufacturers.

4.3 *Drawing Control Procedure*—A procedure shall be in effect so that appropriate manufacturing drawings, their engineering revisions, and related documents are utilized.

4.4 *Material and Component Control Procedure:*

4.4.1 A procedure shall be in effect so that materials, processes, and components, including raw materials, are in accordance with the engineering specifications.

4.4.1.1 This procedure shall provide the purchasing agent with all the information required to order appropriate material.

4.4.1.2 A receiving procedure shall be in effect so that incoming material and components are checked against the purchasing specifications.

[1] This practice is under the jurisdiction of ASTM Committee F24 on Amusement Rides and Devices and is the direct responsibility of Subcommittee F24.24 on Design, Manufacture, Installation and commissioning.

Current edition approved June 1, 2023. Published July 2023. Originally approved in 1988. Last previous edition approved in 2022 as F1193 – 22. DOI: 10.1520/F1193-23.

[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

[3] The last approved version of this historical standard is referenced on www.astm.org.

[4] Available from The American Welding Society (AWS), 550 NW LeJeune Rd., Miami, FL 33126.

[5] Available from American Society of Mechanical Engineers (ASME), ASME International Headquarters, Three Park Ave., New York, NY 10016-5990.

[6] Available from The American Society for Nondestructive Testing (ASNT), P.O. Box 28518, 1711 Arlingate Ln., Columbus, OH 43228-0518.

4.4.2 A procedure shall be in effect so that appropriate inspections are made on purchased components.

4.4.3 A procedure shall be in effect so that material in stock can be properly identified for future use.

4.4.4 Documentation on any material, process, or components certified shall be filed for reference.

4.5 *Manufacturing:*

4.5.1 Amusement ride and device components and systems shall be manufactured and assembled in accordance with the designer/engineer specified criteria.

4.5.1.1 A procedure shall be in effect so that appropriate inspections are made on manufactured parts and subassemblies, for conformance with the designer/engineer specified criteria.

4.5.1.2 A procedure shall be in effect so that completed subassemblies, or where practical, the assembled amusement rides or devices are inspected prior to delivery.

4.5.1.3 Changes to the designer/engineer specified criteria shall be documented and approved by the designer/engineer or a qualified engineer before components, subassemblies, or systems are placed into use.

4.5.1.4 Manufacturers shall have a written procedure to address non-conforming components. Non-conforming components found in 4.5.1.1, 4.5.1.2, or 4.4.2 shall be identified and evaluated. Disposition of the non-conforming components shall be one of the following:

(1) The non-conforming component shall not be used in the specific intended purpose (for example, scrapped, altered, returned to vendor, properly identified, quarantine).

(2) The non-conforming component shall be reworked to bring it into compliance and re-inspected in conformance with 4.5.1.1, 4.5.1.2, or 4.4.2 of this practice.

(3) The design of the non-conforming component shall be re-evaluated in accordance with 4.5.1.3, and the drawing or documentation shall be modified or created to allow the component to be used as is.

4.5.2 *Welding:*

4.5.2.1 Welding procedures shall be in accordance with American National Standards Institute/American Welding Society (ANSI/AWS) or American Society of Mechanical Engineers (ASME), or equivalent standards.

4.5.2.2 For this section on Welding, equivalent standards are those that meet the ANSI/AWS and ASME welding process methodology. This methodology is outlined in the paragraphs below:

(1) Welding process shall be performed in accordance with a written Weld Procedure Specification (WPS) that specifies the applicable essential variables in accordance with the criteria of the applicable code. The specific values for these WPS variables shall be obtained from the Procedure Qualification Record (PQR) Essential variables may include: weld process, joint design, base material, filler material, shielding, preheats, position, electrical characteristics, technique, and travel speed.

(2) The WPS shall state the tolerances on an essential variable as indicated by the applicable standard.

(3) A WPS shall be qualified in accordance with procedures indicated by the applicable standard and documented on the Procedure Qualification Record (PQR), which serves as written confirmation of a successful WPS qualification.

(4) Only welders, welding operators, and tack welders who are qualified in accordance with the applicable standard shall perform welding. Welders, welding operators, and tack welders shall be qualified by testing as indicated by the applicable standard and documented on a Welding Performance Qualification Record (WPQR).

(5) The welding personnel shall follow a WPS applicable to the qualification test.

(6) The WPQR shall serve as written verification of welder qualification and shall list all applicable essential variables as indicated by the applicable standard (see Form E-1 in ANSI/AWS D1.1/D1.1M, Annex E).

(7) Welding performance standards that do not have acceptance or workmanship criteria shall not be considered an equivalent standard.

4.5.3 *Welding Process Inspection:*

4.5.3.1 Inspectors must meet the criteria in accordance with the applicable standard. An inspector can be an engineer or technician who, by training or experience, or both, in metals fabrication, inspection, and testing, is competent to perform the inspection of the work.

4.5.3.2 The Inspector shall verify that all welds conform to the acceptance or workmanship criteria of the applicable standard, and to the drawings and documentation.

4.5.3.3 The size and contour of welds shall be measured with suitable gauges.

4.5.3.4 Visual inspection for cracks in welds and base metal and other discontinuities shall be aided by a strong light, magnifiers, or such other devices.

4.5.3.5 The Inspector shall verify that only materials conforming to the specifications contained within the drawings and documentation are used.

4.5.3.6 The Inspector shall review all WPSs used for the work and shall verify that the procedures conform to the criteria of the application standard.

4.5.3.7 The Inspector shall inspect the work on a sampling basis and at suitable intervals during the process to verify that the criteria of the applicable sections of the standard are met.

4.5.3.8 The Inspector shall inspect the welding equipment used for the work to verify that it conforms to the criteria of the applicable standard.

4.5.3.9 The Inspector shall verify that electrodes are used only in the positions and with the type of welding current and polarity for which they are classified.

4.5.3.10 The Inspector shall review for accuracy and applicability the record of qualifications of all welders, welding operators, and tack welders; all WPS qualifications or other tests that are made; and such other information as may be appropriate.

4.5.3.11 Records of the qualifications of all welders, welding operators, tack welders, WPS qualifications or other tests that are made, applicable inspections, and such other information as appropriate shall be maintained pursuant to the manufacturer's record retention policy and made available to those authorized to examine them.

5. Installation and Commissioning

5.1 *Developmental Testing Requirements*—Where applicable, as determined by the manufacturer/designer, the following test procedures shall be developed and performed on a prototype amusement ride or device in order that the manufacturer/designer may determine the appropriateness for use, of not only the parts, but the entire system of a newly designed ride or device.

5.1.1 *Procedures to Verify Maximum Safe Design Loads:*

5.1.1.1 Procedures to verify such design characteristics as relevant deflections, loads, and forces that are placed on both the equipment and the passengers during operation of the ride or device,

5.1.1.2 A procedure to determine operational limits and restart criteria due to environmental conditions,

5.1.1.3 Procedures to allow the manufacturer to determine such factors as component variability and certification requirements of components, and

5.1.1.4 Any other procedures necessary to demonstrate a ride or device's appropriateness for its intended use.

5.2 *Installation Testing Requirements:*

5.2.1 This section of the standard covers those tests relevant not only to installation, but also includes post-modification and major modifications. The original manufacturer or supplier of an amusement ride or device shall also provide, where applicable, the following standard testing guides:

5.2.1.1 *Materials Testing*—Acceptable test procedures for the certification of all major structural components shall be provided. Where possible, this testing should be referenced to ASTM or to other commonly accepted industry standards.

5.2.1.2 *Erection/Modification Acceptance Testing*—Test procedures or criteria for the acceptance of such construction operations as welding and fastening shall be provided. Again, where possible, reference should be made to ASTM or to other currently accepted industry standards for this purpose.

5.2.1.3 *Performance Testing*—This should consist of a series of specified tests that can be used to determine that the newly erected ride or device conforms to the original design criteria.

6. Operation and Maintenance Documentation

6.1 The manufacturer of an amusement ride or device shall provide, with delivery of each ride or device, documented, recommended operating and maintenance instructions in the English language. These instructions shall include, but not be limited to the following:

6.1.1 Description of the ride or device operation, including the function and operation of its major components.

6.1.1.1 Description of the motion(s) of the ride or device during operation.

6.1.2 *Information Requirements:*

6.1.2.1 The information given in 7.1 and 6.1.2.2 – 6.1.2.14 shall be included, where applicable, on the information plate as specified in 7.1, and in the documented operating and maintenance instructions to be furnished by the manufacturer or seller at the time of sale of each amusement ride or device.

6.1.2.2 *Ride Duration*—The actual time the ride is in operation or a passenger is exposed to the elements of the ride functions, including passenger restrictions to maximum exposure time, shall be included.

6.1.2.3 *Recommended Balance of Passenger Loading or Unloading*—When passenger distribution is essential to the proper operation of the ride or device, the appropriate loading and unloading procedure with respect to weight distribution shall be provided.

6.1.2.4 *Environmental Restrictions*—Recommendations for operational restrictions relating to environmental conditions such as, but not limited to, wind, rain, salt corrosion, and extreme heat or cold.

6.1.2.5 *Recommended Passenger Restrictions*—Where applicable, any recommended passenger limitations such as, but not limited to, height passenger placement, or any other appropriate restrictions.

6.1.2.6 *Electrical Power Requirements*—Total electrical power required to properly operate the ride or device designated in watts, volts, and frequency, including minimum and maximum voltage limits.

6.1.2.7 *Mechanical Power Requirements*—Minimum horsepower necessary to operate ride properly.

6.1.2.8 *Water Flow*—Minimum/maximum water flow rates.

6.1.2.9 *Static Information*—The following information shall be provided for the amusement ride or device when it is in a nonoperational state with no passengers: height, width, diameter, and weight.

6.1.2.10 *Dynamic Information*—The following information shall be provided for the amusement ride or device when it is in an operational state: height, width, diameter, and weight.

6.1.2.11 *Trailering Information*—Each trailer necessary for the transport of a portable amusement ride or device shall be provided with the following information: height, width, length, and weight.

6.1.2.12 *Fastener Schedule*—A manufacturer-issued schedule for the correct grade, torque, and placement of all fasteners used in the assembly, or erection, or both, of the ride or device.

6.1.2.13 *Design Loads per Connection Point*—Loads for each footing or equivalent structural connection point as calculated for all the various load combinations as required by Section 8, Loads and Strengths, of Practice F2291.

6.1.2.14 *Elements and Structures*—Provided the proposed owner/operator furnishes the manufacturer with necessary data concerning proposed installation and usage of the ride or device, the manufacturer shall provide to the proposed owner/operator a description of all structural interface between the ride or device and the owner/operator supports. This structural requirement definition shall include the following:

(1) Maximum static design loads of each footing or equivalent structural connection,

(2) Maximum dynamic design loads of each footing or equivalent structural connection, and

(3) Any other structural interface design specification.

6.1.3 Operational procedures shall include:

6.1.3.1 Description of the recommended passenger loading procedures during operation, including recommended seating, where applicable.

6.1.3.2 Recommended safety procedures and instructions, and information about safety equipment pertaining to patrons and ride or device operators and attendants.

(1) Maximum total passenger weight and maximum number of passengers by carrier unit or ride total.

(2) Description of the passenger restraint system, its recommended use and operation.

(3) Ride or device operator and attendant safety check: recommended visual or other inspections to be performed by ride or device operators and attendants prior to and during each ride or device cycle.

(4) Instructions to the patron: recommended information that should be made available to each patron of the ride or device.

(5) Recommendations for operational restriction relating to environmental conditions such as wind, rain, or temperature fluctuation.

6.1.3.3 Manufacturer's recommended ride or device operating procedures, including the location of ride or device operators and attendants.

(1) Description of the recommended, daily pre-opening inspection to be performed by ride or device operator(s) and attendants that is in addition to previously performed maintenance or other inspections.

(2) Description of the recommended ride or device operator(s) and attendants positions and functions.

(3) Description of the recommended series of steps, to be followed in a definite order, to complete the operation of the ride or device.

6.1.3.4 Manufacturer's recommended emergency procedures.

(1) Recommended evacuation procedures for the ride or device.

(2) Use of emergency power equipment, if provided with the ride or device.

(3) Description of any emergency equipment that is provided with the ride or device, and its uses.

(4) Description of any emergency procedure made necessary by an interruption of power, and restart procedures.

6.1.4 Maintenance and Inspection procedures shall include:

6.1.4.1 Description of the recommended procedures for installation, setup, disassembly, and transportation of an amusement ride or device.

6.1.4.2 Recommended lubrication procedures for the amusement ride or device.

(1) Recommended types and specifications of lubricants.

(2) Recommended frequency of lubrication.

(3) A lubrication drawing, chart, or instruction, showing the location of lubrication points.

(4) Recommended special method of lubrication, where applicable.

6.1.4.3 Description of the recommended daily, preopening inspection to be performed and identification of special care areas and recommended procedures for inspection and maintenance of these areas.

6.1.4.4 Description, including frequency, of recommended maintenance, inspections, and testing, other than daily pre-opening inspection.

(1) The manufacturer of an amusement ride or device shall provide the owner/operator with a written inspection procedure to be delivered with the ride or device. The document shall outline the inspections as contained in Practices F1193 and F770.

(a) Any changes in the procedure prescribed in 6.1.4.4*(1)* deemed essential by the manufacturer due to information not available to the manufacturer at the time of delivery shall be communicated to all known owner/operators.

(2) All inspections, whether recommended at the time of sale or subsequently, shall meet the following criteria:

(a) Inspections are such that shall have been satisfactorily performed by the manufacturer.

(b) Inspections are ones in which the ride or device or element can reasonably be expected to pass during the expected design life of the ride, device or element, assuming that recommended maintenance procedures have been followed; and

(c) Inspections are reasonable and are such that the owner/operator can reasonably be expected to be competent to perform or cause to be performed.

(3) Recommended wear limits or tolerances, where deemed necessary by the manufacturer.

(4) Recommended operational tests, along with minimum intervals for these tests to be performed, that will allow the owner/operator of the ride or device to determine whether a given ride or device is operating within recommended prescribed operational limits.

(a) The manufacturer of a ride or device shall develop specific operational tests along with minimum intervals for these tests to be performed that will allow the owner/operator of the ride or device to determine whether a given ride or device is operating within prescribed operational limits.

(b) All operational tests, except those necessarily recommended subsequent to the sale because of information not reasonably available to the manufacturer at the time of sale, should be recommended to the owner/operator at the time of sale. All tests, whether recommended at the time of sale, or subsequent tests, shall meet the following criteria:

(i) All tests shall have been satisfactorily performed by the manufacturer prior to sale.

(ii) The tests must be such that the ride, device, or element can reasonably be expected to pass during the expected design life, assuming recommended maintenance and operative procedures have been followed.

(iii) All tests must be reasonable and such that the owner/operator can reasonably be expected to be competent to perform or cause to be performed.

(iv) Any operational test including load testing performed on an amusement ride or device shall be completely nondestructive in nature. Overload testing exceeding the above limits shall be deemed inappropriate.

(v) Any installation or operational testing conducted on an amusement ride or device shall be accomplished within the rated limits of the information provided by the manufacturer.

6.1.4.5 Recommended specifications for the use of replacement fasteners, and recommended torque requirements for fasteners, where applicable. If appropriate, precautionary information will be provided relating to the continued use of fasteners that have been loosened or retorqued.

6.1.4.6 Schematics of electrical power, lighting, controls, and other systems, including location charts and troubleshooting guide, where applicable.

(1) Description of recommended maintenance procedures for electrical components.

(2) The name of the component manufacturer and appropriate identification number or specifications, or both, will be provided for electrical components used within the amusement ride or device.

(3) Each electrical component used within the amusement ride or device will be assigned an individual identification number, symbol, or code to facilitate its location and identity on the electrical schematics.

6.1.4.7 Schematics of hydraulic and pneumatic systems, including recommended pressures, location of components, line specification, fitting specification, type of fluid, location chart, and troubleshooting guide, where applicable.

(1) Description of recommended maintenance procedures for hydraulic and pneumatic systems and components.

6.1.4.8 List of parts used in the assembly of the ride or device, or drawings showing component parts and their use.

6.1.4.9 Recommended procedures to be followed in the event of an extended period of non-operation or storage, or both.

6.1.4.10 Description of recommended assembly and disassembly techniques and procedures, pertaining to specific components, as deemed necessary by the manufacturer.

6.1.4.11 Recommended restrictions and special procedures, lubricants, materials, or equipment that may be necessary because of environmental conditions.

6.1.4.12 Other recommendations known to the manufacturer and specific to certain serial numbered rides or devices.

6.1.5 Where applicable, recommended nondestructive testing along with appropriate acceptance criteria, including suggested frequency and the special parts of areas to be tested.

6.1.5.1 This section pertains to the nondestructive testing of amusement ride and device components as recommended by the manufacturer. These tests shall be performed by a qualified NDT inspector in accordance with Practice E543 or ASNT Recommended Practice SNT-TC-1A, or both. It is not intended to preclude any other schedule of NDT, inspection, or testing.

(1) Nondestructive testing (NDT) 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 do not 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.

(2) NDT shall be used to verify the integrity of components which due to their design, location, or installation, or combination thereof, cannot be adequately evaluated by other means.

(3) A schedule for testing on a given ride or device component shall be defined in terms of hours, days, or other units of operation. The initial design shall be developed to expect a period between tests to be no more frequent than annually.

(4) The manufacturer shall recommend components to be tested along with appropriate acceptance criteria. The manufacturer may recommend the test method but shall not specify how the testing is to be conducted except where certain procedures might endanger other components on the ride or device. Any changes or additions to these recommendations shall be communicated to all known owner/operators of the ride or device, and inspection agencies via manufacturers' bulletins. Tests shall meet the requirements of 6.1.4.4*(4)(b)(i)* – 6.1.4.4*(4)(b)(iii)*.

(5) The manufacturer shall include in an appropriate section of the ride or device manual the list and location of components to be tested, recommending specific areas to test and the schedule by which they shall be tested in accordance with 6.1.5.1*(4)*.

(6) Components found to have relevant indications that do not meet the acceptance criteria shall be replaced or reconditioned in accordance with Practice F1193.

(7) Components found free of relevant indications that meet the acceptance criteria or have been reconditioned shall be further tested at the regular schedule in accordance with 6.1.5.1*(3)*.

(8) Within a reasonable time following a request by an owner/operator or inspection agency, the manufacturer of an amusement ride or device whose manual does not contain testing recommendations shall either provide a component listing or statement that no NDT is recommended on the ride or device as per the criteria outline of 6.1.5.1*(2)*. When a manufacturer's list or statement is not available, it may be compiled by a registered professional engineer or engineering agency or by any individual qualified by training and experience to compile such a list or statement based upon the ride or device's specifications and history and using accepted engineering practices.

7. Information Plate

7.1 *Information Plate*—A manufacturer-issued information plate, printed in English, shall be permanently affixed to the ride or device in a visible location, and shall be designed to remain legible for the expected life of the ride or device. The plate shall include, but not be restricted to, all applicable items listed in 7.1.1 – 7.1.8.

7.1.1 *Ride Serial Number*—A manufacturer-issued unique identifying number or code affixed to the ride in a permanent fashion.

7.1.2 *Ride Name and Manufacturer*—A manufacturer-issued unique identifying ride name, including the name of the manufacturer by city, state, and country.

7.1.3 *Ride Model Number*—A manufacturer-issued unique identifying number or code assigned to each manufactured type of ride having the same structural design or components.

7.1.4 *Date of Manufacture*—The date (month and year) determined by the manufacturer that the given ride or device met his required construction specifications.

7.1.5 *Ride Speed*—Maximum and minimum revolutions per minute, feet per second, or miles per hour, as applicable.

7.1.6 *Direction of Travel*—When the proper direction of travel is essential to the design operation of the ride, the manufacturer shall designate the direction of travel, including reference point for this designation.

7.1.7 *Passenger Capacity by Weight*—Maximum total passenger weight per passenger position and per ride.

7.1.8 *Passenger Capacity by Number*—Maximum total number of adult or child passengers per passenger position and per ride.

8. Certification

8.1 Prior to operating an amusement ride or device for the public, the manufacturer shall generate a document certifying that the amusement ride or device is in compliance with Practice F1193. This certification shall be retained with other quality assurance documents for the amusement ride or device. When requested by an amusement ride or device-certifying authority, purchaser, or owner, the manufacturer shall provide a copy of this certification document.

9. Manufacturer Supplemental Bulletin Requirements

9.1 Upon notification from an owner/operator of an incident involving a critical component, the manufacturer of an amusement ride or device shall promptly evaluate this information and disseminate his findings to the original owner/operator, along with any pertinent recommendations, to all known owner/operators.

9.2 Supplemental notification bulletins delivered by the manufacturer of an amusement ride or device to the owner/operator that were not provided at the time of sale and contain new information or newly recommended inspections or testing, or both, shall be consistent with the following criteria in order to carry the force and effect of this practice:

9.2.1 Modifications, procedures, testing, or inspections shall conform to Practices F770, F1193, and F2291.

9.2.2 Modifications, procedures, testing, and inspections shall be reasonable, ethical, and consistent with the general manufacturing practices within the industry.

9.2.3 Supplemental notification bulletins when used shall have a page header that contains the following information, when available:

9.2.3.1 The name, address and telephone number of the issuing entity,

9.2.3.2 The date the bulletin is released,

9.2.3.3 The date the bulletin takes effect,

9.2.3.4 The period the bulletin recommends for completion,

9.2.3.5 The name of the original ride or device manufacturer,

9.2.3.6 The name of the ride or device,

9.2.3.7 The model number of the ride or device,

9.2.3.8 The serial numbers of the affected rides or devices,

9.2.3.9 The applicable dates of manufacture for the affected rides or devices,

9.2.3.10 A number that uniquely identifies the bulletin,

9.2.3.11 The number of the superseded bulletin, where applicable, and

9.2.3.12 The page number and number of total pages.

9.2.4 The first page shall contain, in large bold upper case letters, one of the following titles:

9.2.4.1 "SAFETY ALERT" for notifications that recommend immediate action (see Fig. A1.1),

9.2.4.2 "SERVICE BULLETIN" for notifications that do not recommend immediate action but do recommend future action (see Fig. A1.2), and

9.2.4.3 "NOTIFICATION" for notifications that do not necessarily recommend future action but are primarily for promulgation of information (see Fig. A1.3).

9.2.5 The first page shall contain a summary of the information contained in the body of the bulletin.

9.2.6 The first page shall summarize the reason(s) that prompted the release of the bulletin.

9.2.7 The first page shall list the recommended action to be taken, for example: Inspection, modification, part replacement, new parts, nondestructive testing, procedural change, manual revision, operational revision, etc.

9.2.8 The remainder of the first page and any supplemental pages shall contain text detailing the information being promulgated. Drawings and diagrams may be used for clarification where applicable.

9.2.9 The supplemental notification bulletin, when printed, shall be in black ink on white paper. The following colored ink may be used to print titles:

9.2.9.1 Red—for safety alert,

9.2.9.2 Blue—for service bulletins, and

9.2.9.3 Green—for notifications.

9.2.10 The supplemental notification bulletins shall follow the format provided in Annex A1.

9.3 Manufacturers shall maintain a catalog of supplemental bulletins issued for an amusement ride or device. The supplemental bulletin (safety alert, service bulletin or notification) shall be in accordance with the applicable criteria and formatting requirements prescribed in 9.2.

9.3.1 A catalog of supplemental bulletins issued, and copies of the bulletins, shall be made available to the following:

9.3.1.1 The owner/operator of the amusement ride or device;

9.3.1.2 Upon written request, to regulatory entities who have jurisdiction and statutory oversight of the specific amusement ride or device;

9.3.1.3 Upon written request, to qualified parties responsible for inspecting, auditing, certifying or permitting of a specific ride or device.

10. Used Ride or Device Information Requirements (from Specification F1950)

10.1 The original manufacturer of the used amusement ride or device being sold shall make available, upon request by the purchaser, owner, operational, and maintenance information along with updates, if any.

10.2 The original manufacturer of the used amusement ride or device being sold shall make available to the purchaser

information regarding any major modifications made to the ride or device that the manufacturer authorized or otherwise performed on the ride or device.

11. Keywords

11.1 amusement rides and devices; inspection; manufacturing; quality assurance; welding

ANNEX

(Mandatory Information)

A1. SUPPLEMENTARY NOTIFICATION BULLETINS FORMAT