



SAN JOAQUIN FINE WOODWORKERS ASSOCIATION

TOY PRODUCTION, TESTING AND CERTIFICATION PROCEDURES:

**A plan to comply with the Consumer Product Safety
Improvement Act of 2008 and Other Applicable Laws**

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TOY PRODUCTION, TESTING AND CERTIFICATION PROCEDURES

I. INTRODUCTION

The procedures and protocols to be followed by San Joaquin Fine Woodworkers Association (Association) members when making toys for distribution to various charitable organizations are detailed in this document. Following these guidelines will ensure the Association is in compliance with the legal mandates of the Consumer Product Safety Improvement Act of 2008 (CPSIA), the American Society for Testing and Materials F963-11 (ASTM 2013).

This document is a record of our efforts to review and comply with all applicable toy safety regulations. The Association will develop additional documents, based on this master document, which provides guidelines for Association members manufacturing toys and for the Toy Committee who has the responsibility of tracking, testing and issuing Children's Product Certificates.

The toy manufacturing process starts with guidelines on materials approved for construction, including patterns, assembly protocol and finishing. The toy manufacturing process ends with testing paint and finishes for lead, safety testing, issuing a Children's Product Certificate (CPC), labeling and tracking. Association members who manufacture toys for distribution by the Association must follow guidelines provided so there is quality control over the manufacturing process and the toys have a high likelihood of passing the toy safety testing program before being distributed to the various charities we support.

The steps described in the preceding paragraph will be under the oversight of a Toy Committee (Committee). The Committee will have control over the toy patterns approved for manufacture and assembly protocol. There will be a set of pre-approved toy patterns as well as a process for submitting new patterns for consideration and approval by the Committee. The Committee will establish guidelines for what toy patterns should be considered and will be based on playability, safe design and ease of construction. The Association may provide its members some or all raw materials needed for toy production. The alternative is to provide members with a list of approved products, such as paint. The committee will also be responsible for toy testing, issuing a CPC and toy batch tracking.

This document is guided by the legal mandates of the CPSIA and F-963-11. The F963-11 is a product of the toy industry and has been adopted by the CPSC and must be included in toy safety testing. They are not available on the Internet and must be

purchased (astm.org). The CPSIA can be found at the Consumer Product Safety Commission (CPSC) web site and includes an on-line check list (www.cpsc.gov/gettingstarted) detailing the steps to take in complying with the CPSIA.

Step 1 of the CPSIA check list classifies the product as to whether or not it is primarily intended for children. Children's products are subject to a set of federal safety rules. A children's product is defined as a consumer product intended primarily for children 12 years of age or younger. The toys we manufacture would fall into this category. Children's products are required to undergo third party safety testing and have a written CPC demonstrating compliance with all safety regulations. If a product is determined to primarily be intended for use by children, then you move on to the next step.

Step 2a of the checklist applies to products intended for children and identifies key testing requirements. Testing includes total lead content, lead in paint and surface coatings, small parts and toy safety standards. All toys must meet CPSIA and F963-11 standards (<http://www.cpsc.gov/toysafety>).

The CPSIA requires third party testing (CPSC certified lab) for lead in paint and finishes and use and abuse testing to ensure the toys comply with all mandated toy safety standards. Testing by an approved laboratory is expensive and must be conducted on each "batch" of toys. A batch is defined as different paint (brand or color) or toy design.

II. SMALL BATCH MANUFACTURER REGISTRATION

Some relief from third party testing requirements is provided by the Association registering with the CPSC as a Small Batch Manufacturer at <http://www.cpsc.gov/businfo/toysafety/smallbatch.html>. To qualify as a Small Batch manufacturer you must 1) have sales of \$1 million or less and 2) manufacture no more than 7,500 units of the covered product that qualifies the Small Batch Manufacturer for registration. We meet these requirements. This is an annual registration and there is probably a fee associated with the registration.

Registering as a Small Batch Manufacturer does not relieve the Association from compliance with toy safety testing requirements. However, we would not be required to conduct third party testing. The registration would exempt the Association from Total Lead Content testing. We would be required to comply with the lead in paint and finishes testing and develop and implement our own toy safety testing program.

The Association will develop a written toy testing program based on the guidelines in the CPSC Toy Test Manual (2010) and F963-11 and summarized in this document.

The following is a brief discussion of the applicable parts of the CPSIA and F963-11 regulations that we are required to follow and how the Association plans on complying with these toy safety testing requirements so we can issue a CPC, certifying our toys have been tested and are safe for use by children.

III. TESTING FOR LEAD IN PAINT AND SURFACE FINISHES

The Association must certify that all man-made finishes applied to the toys we manufacture do not contain lead. There are two components of lead testing and certification: 1) lead content and 2) lead-in-paint (www.cspc.gov/lead). The following is a discussion of the requirements for testing man-made finishes.

A. Total Lead Content – Lead content in toys cannot be greater than 300 parts per million (ppm) in any accessible part. The CPSC has determined that certain products, including wood, will never exceed the 300 ppm “lead content limit” and has excluded wood and textiles (excluding after-treatment applications such as screen print, transfer decals, or other prints) from the lead content testing requirement. This is a requirement that applies mostly to the entire product and paint is excluded from this guideline (see below). Also worth noting is the CPSC does not require testing of components that are not accessible (www.cspc.gov/businfo/fr09/leadinaccessibilityfinalrule.pdf).

Man-made wood products (i.e. melamine and plywood) are not exempt from testing and certification requirements at this time. The CPSC is in the process of determining if plywood should be exempted (glues are internal) from lead content testing, but has not exempted this product to date. By registering as a Small Batch Manufacturer, we would be exempt from this total lead content testing requirement (CPSC ND, page 3, group B)

B. Lead-in-Paint – Lead was removed from paint and associated drying agents in the United States in the 1970’s (Flexner 2005, page 76). However, testing for lead in man-made finishes and certification is required by the CPSIA. Lead-in-paint (paint is defined as any man-made finish) cannot contain more than 90 ppm of lead. We are required to comply with the lead-in-paint testing and certification requirements. Toys with no finish or natural coatings (i.e. linseed oil, beeswax and natural shellac) do not need to be tested for lead. We must be able to certify that a painted toy does not contain lead in the finish in excess of 90 ppm or “lead free.”

There are four ways to meet the lead testing requirement:

1. No finish
2. Natural finishes such as mineral oil, bees wax and shellac (and others) do not need to be tested for lead and are exempt from testing. Wood is exempt from testing for lead, unless it has been “altered.”
3. Have the finish tested by a CPSC certified lab. Information on third party testing can be found at <http://www.cpsc.gov/info/toysafety/3pt.html>). A CPSC certified lab in southern California (International Accreditation Service (www.act-lab.com)) was contacted and provided guidelines and cost estimates for lead testing. We would have to send the liquid finish (not the toy) to them for lead-in-paint testing and certification. A test for lead would be performed on each product (color, type finish or brand). Each color would be a separate test and cost about \$40 per test. Multiple colors could be tested at one time. There would be an additional \$100 cost for the report summarizing testing results and certificate. The turn-around time for a test is 5-7 days (Stephens, personal communication).
4. Certification by the Manufacturer - A Material Safety Data Sheet (MSDS) must be available from the manufacturer for just about all products, including finishes. The manufacturer must list all hazards or toxic effects of their product. It is assumed lead would have to be listed if present, but this may not be true. The CPSC has said that the MSDS, by itself, is not sufficient to show compliance for lead testing requirements. However, the MSDS could be combined with a letter or certification from the manufacturer that their particular product(s) does not contain lead (or at least less than 90 ppm). Some manufacturers have such certification on their web sites (http://www.wmbarr.com/ProductFiles/CPSIA-Compliance.Certificate_Klean%20Strip%20Denatured%20Alcohol.pdf). We have received similar certification from Pittsburg Paints and may contact other paint manufacturers for similar certification that their products are lead free. This is a very viable option and our preferred option.

Approved finished may be purchased in bulk approved manufacturers of or members can purchase approved paints (Appendix C). The Association has to maintain control over any man-made finish applied so that a CPC can be issued for a batch of toys

IV. AGE LABELING AND DETERMINATION

Age labeling generally provides parents guidelines for selecting the proper toys for their children. Age labeling is encouraged by the CPSC to assist parents with toy selection. The CPSC has provided guidelines to assist in accurately age labeling toys (CPSC 2002). Age labeling is important to the Association because the age grading of toys determines the guidelines used for testing. For toys intended for children under 3 years of age, the Small Parts Regulations come into effect (*Code of Federal Regulation*, Title 16, Sections 1500.08(a)(9), 1500.50-52 and Part 1501). This regulation says that small parts are banned for children under 3 years of age. This regulation does not apply to toys that are solely intended for use by children 3 years of age or older, nor does it apply to toys that children under 3 years of age might have access to simply because of their presence in the home (CPSC 2002, page 1). However, we must be aware of the potential choking hazard associated with any product we manufacture and ensure that any product that contains small parts are properly labeled as a potential choking hazard and not suitable for children 3 years of age or younger (see section IV).

The major age labeling breaking point is for toys intended for children under 3 years of age and those greater than 3 years of age. Age labeling is based primarily on advertising, marketing and statements made by the manufacturer - none of which apply to the Association's operations. The CPSC makes an age determination for a toy based on: 1) play category, 2) toy subcategories, 3) age groups and 4) toy characteristics. Age labeling is complicated. For the most part, the Association does not make toys targeted for children under 3 years of age.

The exceptions to the under 3 years of age statement above are dolls made by our partners that are used in the cradles the Association manufactures. Dolls and stuffed toys can be appropriate for children of all ages (CPSC 2002, page 77). Pull toys with handles or cords would also fall into this category (CPSC, page 27). While the toys we manufacture are not intended for use by children under 3 years of age, it is possible they may use small toys and we need to be aware of the small parts concern (CPSC 2002, page 111). We need to work with our partners to ensure the dolls they manufacture are safe.

In general, the wooden toys we manufacture would be suitable for use by children between 3 and 12 years of age. We would need to follow safety testing protocol for children of that age group (see Table 1). We need to include age grading information on the CPC.

V. TOY SAFETY TESTING

The CPSC has developed a Laboratory Test Manual for Toy Testing (CPSC 2010) for their staff. Similar testing protocol is included in F963-11. Three of the tests apply to the toys we manufacture:

- 1) Simulating Use and Abuse;
- 2) Sharp point determination; and
- 3) Identifying toys and other articles intended for use by children under 3 years of age that might present choking, or ingestion hazards because of the presence of small parts.

While the Association does not manufacture toys targeted for children under 3 years of age, we need to be aware of the potential choking hazard issue in our toy pattern selection, manufacturing and testing. There are other guidelines that require choking hazard testing for small parts for toys intended for use by children up to age 6 following use and abuse testing. This basically means we would need to do the small parts testing as part of our toy testing program.

It is necessary to provide a few definitions and a brief background of terminology to better understand what is being asked of us by these regulations. This gets a bit technical, but is necessary if we are to follow the procedure in the Test Manual and F963-11. The CPSC staff uses several specialized pieces of equipment (they have designed and built) that we will not have access to. We will do our best to duplicate their testing procedures and efforts.

A. Sample Handling

When the initial toy pattern is submitted by a member for approval, it must be accompanied with a sample of 6 toys that will be used for testing. A form will be developed to track the needed sample information. Again, a sample is defined as toys (same finish, similar design) from one group or individual manufacturer.

The CPSC lab would normally select a subsample from a group of toys. What the Association will do is require the manufacture to submit 6 toys, along with the assembly protocol, for testing. This way if there is an issue with the toy (fails to pass testing), the design can be changed and the toy retested prior to manufacture. Once a toy has passed the testing program, the manufacture has the green light to produce the toy and no further testing is required, unless they is a change in design.

Samples for use and abuse testing are equally divided for each applicable test- for example, 3 toys for impact testing and 3 toys for torque and tension testing. (Note: torque and tension testing are performed on the same subsample)” (Test Manual, page 13). A minimum of 2 toys shall be subjected to each test (Test Manual, section 5.3).

If a toy breaks during testing, it does not automatically fail the test. The real issue is whether sharp points or small objects develop as a result of the breakage (F963-11, section 4.6.3). The regulation against the presence of sharp points applies to children under 8 years of age. This small object regulation applies to children at least 3 years of age but less than 6 years and are included in the small parts labeling requirement (F963-11, section 4.6.3).

B. Applicability

Certain tests apply to specific age groups for which the toy is intended (Test Manual, page 12 and Table 1). This is why age grading of the toys is important. Most of our toys are targeted for children older than 3 years of age. However dolls are appropriate for children under 3 years of age. Following are the guidelines for testing applicability.

- i. Use and Abuse testing – Applies to toys intended for use by children in three age categories: 1) 18-months of age or less; 2) children over 18 months but not more than 3-years; and 3) children over 3-years but not more than 96 months (Table 1). Each sample needs to be subjected to testing applicable to that particular age group. Where a toy test may be performed in more than one way, the toy should be tested in the orientation considered most severe (7.1.4).
- ii. Exemptions – Some toys are exempt from testing (such as crayons).

VI. TESTING PROCEDURES

According to the Test Manual (section 9.2.2) there are five hazard determination tests that may be performed within this sequence of testing. Each sample/subsample shall be subjected to each applicable test:

- 1) Accessibility (9.2.3)
- 2) Sharp Points (9.2.4)
- 3) Sharp Edges (9.2.5)
- 4) Small Parts (9.2.6)
- 5) Use and Abuse (9.3)
- 6) Repeat 1-4.

The number above in parenthesis refers to the section in the Test Manual. The following is a brief description of each of the above tests and an opinion of whether or not the test must be done by the Committee.

A. Accessibility (not applicable)

Accessibility testing is done prior to and after the use and abuse testing and uses a test probe designed by the CPSC lab. Basically this is a test for internal sharp objects (Test Manual, section 9.2.3, page 18). A CPSC staff developed probe is inserted into any opening (including those resulting from use and abuse testing), looking for sharp objects. While some of our toy designs do have openings, they are generally large (over 1-inch in diameter and made of wood). We do not believe this test applies to our products, even following use and abuse testing.

B. Sharp Points (applicable)

According to section 9.2.4.2 of the Test Manual, the sharp points test is to be performed on wires, pins, nails and staples and other metal type material. None of this would apply to the toys we manufacture. However, splinters are also included in this list and that could apply following the use and abuse testing. This test applies to toys intended for use by children under the age of 8 years.

The CPSC lab has developed a specific tool for sharp points testing. This is pretty much a one-of-a-kind tool. The sharp point testing would apply to toy before and after use and abuse testing. Sharp points could develop as a result of breakage and present a potential risk of injury due to puncture or laceration. A toy does not automatically fail the test (banned) if it fails to meet the technical requirements in the regulation for sharp points (Test Manual, page 6). However,

section 9.2.4 of the same manual states that a toy intended for use by children under 8 years of age may not contain sharp points “before or after use and abuse testing.” The Test Manual goes on to say that the sharp points test is to be performed on all samples determined to have potential hazardous sharp points, which would include splintered wood.

The toy would have to be inspected prior to and after the use and abuse testing. If the toy body or any part of the toy breaks, that broken part would need to be visually inspected for sharp points. This will be determined by using a finger to push against the point and if pain is felt, then it would have to be declared a hazard and fail the test.

C. Sharp Edges (slightly applicable)

The sharp edges test is performed only on metal and glass. Testing on other materials is not required (Test Manual section 9.2.5.2).

There is different language in the F963-11, section 3.1.25 defines “edge, hazardous - as an accessible edge that presents an unreasonable risk of injury during normal use and reasonably foreseeable abuse of a toy.” While this definition agrees with the metal/glass discussion above, it also states that for children less than 8-years of age, edges other than metal and glass are defined as potentially hazardous if they are sharp to the touch. Our toys must be free of wood splinters both before and after use and abuse testing (F963-11 Section 4.9.3), Similar to sharp points, the sharp edges test is somewhat of a value judgment. Running your hand along a broken toy will assist in determining if this is sharp edge issue.

D. Small Parts (Partially Applicable)???

The Small Parts Regulations (16 CFR part 1501 and 1500.50-53) applies to toys intended for use by children under 3 years of age (Test Manual, section 9.2.6.1, page 25). The regulation says that no toy, included liberated parts, shall be small enough (without compression) to fit entirely within a test cylinder (Figure 2). The Association does not manufacture toys for children under the age of 3 years.

1. Toys intended for children under 3 years of age

The Regulation bans toys and other articles that are intended for use by children under 3 years of age that contain or produce small parts when

broken. The purpose of this regulation is to prevent the deaths and injuries to children under 3 years of age from choking, inhaling or swallowing small objects. The Manual goes on to say that “No toy (“including removable parts, liberated components, or toy fragments”) shall be small enough (without being compressed) to fit entirely within a cylinder of specific dimensions, as shown” in Figure 2.

2. Small parts labeling for children over 3-years of age

Toys or games with small parts intended for use by children 3 years of age or older, but less than 6 years must be labeled properly. According to the ASTM guidelines, toys and games with small parts intended for children at least 3 years old, but less than 6 years are subject to the small parts labeling requirement (F963-11, section 4.6.3) as follows:

⚠ WARNING:
CHOKING HAZARD-Small parts.
Not for children under 3-years of age.

There are also guidelines on the size of the warning letters (F963-11, section 5.11.1.3).

Section 7.3.1 of the Test Manual specifically exempts crayons (these will remain in the original package and are marked as a potential choking hazard by the manufacturer on the package as not suitable for children under 3-years of age. The concern here is the result of the use and abuse test and any small parts that might break off and these will be tested (as well as any sharp points that may develop).

The Association will not manufacture toys with small parts. If we do, they will need to be labeled according to the guidelines above. The small parts labeling requirement would be appropriate since some of our toys would be used by children between the ages of 3 and 6 years of age.

3. Use and Abuse testing as it relates to Small parts

Small parts testing must be performed before and after abuse testing on all small objects such as small toys, or components of toys, including eyes, knobs or pieces that break off and can be removed from the toy.

Small articles that are detached or detachable parts are to be placed into the small parts cylinder both before and after use and abuse testing. If the part fits entirely into the cylinder, then it is considered a small part and a potential choking hazard.

Wheels and axles are a concern in toy design and construction. The regulations state that the design of the toy should consider eliminating the possibility of ingestion hazards that might be caused by small wheels that separate during use and abuse testing as well as laceration and puncture hazards. This requirement applies to toys intended for use by children 96-months (8-years) of age or less (F963-11, section 4.17). No toy we manufacture should include wheels less than 1.25 inches in diameter. The important point here is this small part requirement applies to children up to and including 8-years of age, not just 3-year olds.

4. Small parts testing

The small parts testing is accomplished by inserted the article or part in question into the small parts cylinder (Figure 2) before and after use and abuse testing. The orientation of the part can vary, but should not be compressed. If the part fits entirely into the cylinder then it is considered a small part.

The Association will conduct small parts testing where appropriate using the following procedure. For children between 3 and less than 6 years old, a warning label (Figure 1) must be applied to the product containing small parts stating that this is not intended for children 3 years or younger and presents a choking hazard.

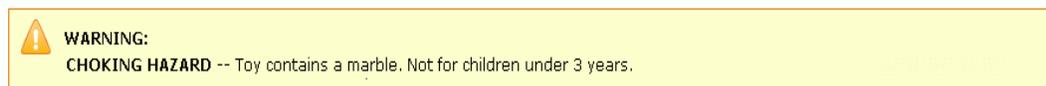


Figure 1 - Example of choking hazard warning label

Target of the choking hazard test could be an actual small part or a small part that breaks off a toy during normal use. There is a standard test to determine if an object is a choking hazard. It is a Choke Test Cylinder (Figure 2) and consists of a truncated cylinder (can be purchased or made) having an interior diameter of 1.25 inches, a minimum interior depth of 1 inch and a maximum depth of 2.25 inches. If a toy or part of a

toy fits entirely within the cylinder, it is considered a choking hazard. (www.cpsc.gov/toysafety/smallparts)

We do not manufacture toys that contain small balls.

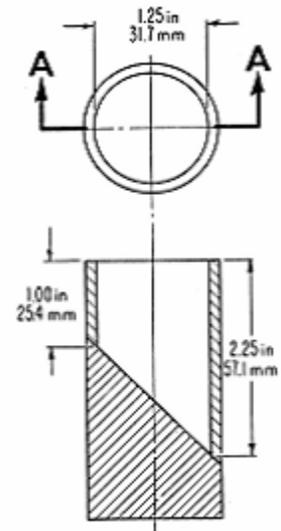


Figure 2 – Chock Hazard Cylinder

E. Use and Abuse Testing (CFR Sections 1500.50-53)

There are five use and abuse tests specified in the regulation: impact, torque, tension, flexure, and compression. These tests are intended to simulate normal and abusive use of a toy to ensure that hazards are not generated due to wear or breakage. The point of this testing is to evaluate the results of a failure, if it occurs. The fact that the toy breaks is only relevant in terms of potential hazards (sharp points or small parts) that might develop. Each toy shall be inspected after use and abuse testing (see below) for hazards such as sharp points, etc. Any toy that has undergone use and abuse testing with resulting detached parts that fit entirely in the small parts tube is banned (CPSC 2002, page 8).

The Test Manual, section 9.3 describes six different use and abuse tests: Impact, Flexure, Torque, Tension, Compression, and Seam Test. Some of these tests are not applicable to the products we manufacture. The severity of the test is determined by the age group for which the toy is intended (Table 1). If the toy is intended for more than one age group, the more severe standard shall apply. In general, use and abuse testing does not apply to toys intended for children older than 96-months (F983-11, section 8.6).

The following is a brief description of these tests and an indication of which ones are applicable to our products.

A minimum of 12 subsamples are “preferred” to perform the use and abuse testing (Test Manual, section 9.3.1, page 27). The Association may use fewer

toys since not all test apply. Table 1 shows the testing criteria for each test based on the age determination for each toy.

Table 1 – Use and Abuse Testing Requirements for the seven test functions based on age category (CPSC 2002, Table 2, page 27)

Age Category	Impact (drop test)	Flexure	Torque	Tension	Compression
0-18 months	10 drops from 4.5 ft ±0.5 in	120° arc 30 cycles	1.8 in-lb	9.54 lbf	19.5 lbf
19 months – 3 years	4 drops from 3 ft ±0.5 in	120° arc 30 cycles	2.8 in-lb	14.5 lbf	24.5 lbf
37-96 months	4 drops from 3 ft ±0.5 in	120° arc 30 cycles	3.8 in-lb	14.5 lbf	29.5 lbf

Note: test parameters from the Test Manual (Table 2) and F963-11 (Table 5, page 35) are slightly different.

Toys age graded for more than one category are to be subjected to the more severe of the tests. The severity of each test is a function of the age category for which the toy is intended (except for the flexure test). The toys we manufacture should all be age graded for 3 years or greater.

Except for torque and tension tests, each test method is to be applied to a previously untested toy. Tension and torque tests use the same toy.

1. Impact Testing

The two tests included in the impact test procedure are the drop test and the tip over test.

a. Drop test (Applies)

This test is intended to simulate situations where the toy is dropped from a table or counter top or other impact situations or foreseeable abuse. After each test, the toy is to be examined for possible hazards, such as sharp points, sharp edges, splinters or small parts.

There are some weight limits for toys to be tested (Table 3 of the Test Manual), but all the products we manufacture are under the weight criteria and should be tested.

To determine the drop test height and number of drops required, refer to Table 1. Find the applicable age group from the table based on the age for which the toy is intended. We should be using the 4 drops from a height of 3 feet (± 0.5 ft.). Hold the toy in a random orientation (change the orientation with each drop test) with the lowest part of the sample at the correct height. Release the toy and allow it to drop onto the surface specified. Section 4.1.1 of the Test Manual states this is to be a 1/8" nominal thickness, type IV vinyl tile over 2.5 inches of concrete. The area shall be at least 3 ft² according to section 8.7.1 of F963-11. After each drop, the tester is to examine the sample for possible sharp points, sharp edges and small parts. The examination of small parts is applicable to toys intended for use by children aged 3 years or less (Test Manual, section 9.3.5.2.7) and should not apply to the toys we manufacture..

b. Tip Over Test (9.3.5.3) (Doesn't apply)

The tip over test is applied to any large toy that has a projected base area of 400 square inches or a volume of more than three cubic feet (section 9.3.5.3 Laboratory manual for Toy Testing). We do not have any toys that fit this category and this test can be ignored.

2. Flexure Test (Doesn't apply)

This test (section 9.3.6) is applied to any toy component containing metal wire or other metal materials for the purpose of stiffing or for retention of form in toys. We do not manufacture any toys that would fall into this category and this test can be ignored.

3. Torque and Tension Tests

These tests apply tensile force and/or torque (twisting force) to any toy component that can be grasped by a child. The amount of force is determined by the age of the child for whom the toy is intended (Table 1).

There are no universal tools for these testing any general purpose clamp are suitable (see below).

a. Tension Testing (applicable)

Hemispherical or tapered components should be subjected to torque and tension testing if a 0.040 (1 mm) feeler gauge can freely pass between the component and the test object (Test Manual, 9.3.7.4). The tension test shall be applied to “any projection of a toy that a child might grasp with at least the thumb and forefinger or the teeth. It would seem the most likely component of the toys we manufacture that would need to be tested is wheels. There may be other components on some toys that would also need to be tested. The tension test shall be performed on the same component used for the torque test (F963-11, section 8.9) if applicable. The amount of force applied to the part is found in Table 1 and is age dependent. For our toys, the force would 14.5 lbf.

A clamp is attached to the test component and connected to the testing device. Any tool capable of securely holding the item to be tested (including glue) will work. The testing device could be a spring scale with an accuracy of ± 0.5 lb. Any sample component (i.e. wheel) shall be “tested in both plane and perpendicular to the major axis of the sample” (Testing Manual, section 9.3.7.2.1). The required tensile force shall be applied evenly for 5 seconds parallel to the major axis of the toy and the tension maintained for an additional 10 seconds. If necessary a different clamp can be attached to the component and the test repeated applying the force perpendicular to the toys major axis.

b. Torque Testing (maybe applicable)

The torque testing applied to “any toy with a projection, part, or assembly that a child can grasp with at least the thumb and forefinger or the teeth shall be subject to this test” (F963-11, section 8.8). The amount of torque applied can be found in Table 1 and is based on age of the child the toy is intended (3.8 in-lb). The same component used in the tension test is to be used for this testing.

Various tools can be used to measure the torque applied to the part including a torque gauge, torque wrench, and similar tools. The device must have an accuracy of ± 0.2 in. lbf. A clamp can be used to assist in this test. If the part comes loose, it needs to be evaluated for compliance with appropriate requirements (i.e. small parts). The main body of the object needs to be secured so it

doesn't rotate during testing. Torque Testing basically applies the required torque (see Table 1) to the object over a specific arc for a given amount of time (Testing Manual, section 9.3.7.6.3).

The only application of this test to the toys we currently manufacture would be wheels. Since the current design uses wood pegs to attach the wheel (each wheel is independent of the other wheels), it would appear this test cannot be applied. However, if there are other parts of current or future toy patterns where the test guidelines apply, then the torque test would need to be implemented.

4. Compression Test (not applicable)

This test applies (Testing manual, section 9.3.8) a given force (Table 1) for 5 seconds to determine if sharp points and sharp edges result from the compression. Since our toys are made from wood, this test does not appear to be applicable.

(5) Seam Test for Stuffed Toys and Bean Bags (Not applicable)

This is a test (Testing Manual, section 9.3.9) to determine seam weakness in stuffed toys. We do not produce stuffed toys. This test attaches clamps to the material no more than 0.5 inches from the seam. If the material adjacent to the seam cannot be grasped between the thumb and forefinger, then test will not be performed (section 9.3.9.4, page 34).

Since we do not manufacture stuffed toys, there is no need for the Toy Committee to conduct this test. Commercially produced stuffed toys would be tested and certified by the manufacturer.

The Toy Committee will use the information above and from the CPSIA and F963-11 to develop the Association's Toy Testing Program.

V. CHILDREN'S PRODUCT CERTIFICATION

The goal of testing and evaluation is for the Association to issue a Children's Product Certificate (CPC) for each product based on passing tests (<http://www.cpsc.gov/about/cpsia/faq/elecfaq.pdf>). The CPC must accompany toy products to the distribution point (charity). It does not have to be included with each toy, but should be available at the distribution point in the event a "customer" wants to view it (Cohen, CPSC, personal communication). We will place a CPC in each box and make the charities representative aware of the CPC and what it represents. We will post the CPC on our web site as an additional distribution method.

VI. LABELING

According to F963-11, section 7, either the principal component of the toy or packaging of the toy shall be marked with the name and address of the manufacturer. In our case, this would be the wooden toy body.

We will brand our web address (sjfwa.com) on each toy to comply with this labeling requirement. This labeling refers the end user to our web site where the CPC and other information will be posted.

Although a bit labor intensive, we see the use of a brand as the most practical way to comply with labeling requirements.

VII. TOY TRACKING PROCEDURE

The purpose of the tracking labeling requirement has to do mostly with product recalls. Where a product or component has been identified as a hazard, the tracking label identifies the source of the product. Toys we manufacture are required to have “tracking information” marked on them (www.cpsc.gov/info/toysafety/trackinglabels.html). The information required by the regulation includes such things as the manufacturer, location, date of product production, and batch numbers. What we are seeing in the stores and on-line does not include this sort of detail. We will use a wood burner to brand our web site address on each wooden toy. This would refer the end user to our web site where they would find the CPC.

Record keeping is very important and will be the responsibility of the Toy Committee. The Committee must keep records that each “batch” of toys has been tested and meet safety standards. Other production information also may be recorded. We also must keep records as to where toys are distributed (including number and type of toys).

VIII. TOY ASSEMBLY PROCEDURE

Toys must be well made and assembled so that they will withstand normal use and abuse without breaking. Toys that do not pass the toy safety test will not be approved for production. Manufacturers of toys must follow the procedure detailed in Appendix A. Variations of this procedure may be needed for some toy designs. If

so, the modified procedure must be submitted to and approved by the Toy Committee before being implemented.

G. REFERENCES

ASTM International. 2013. Designation: F963-11. Standard consumer safety specifications for toy safety. www.astm.org). 69 pp.

Flexner, B. 2005. Understanding wood finishing. Reader's Digests. Pleasantville, New York.

United States Consumer Product Safety Commission (CPSC). 2002. Age determination guidelines: Relating to children's age to toy characteristics and play behavior. (<http://www.cpsc.gov/businfo/age.pdf>). 313 pp.

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United States Consumer Product Safety Commission (CPSC). 2010. Laboratory Test Manual for Toy Testing: Requirements for testing of toys and other articles intended for use by children 12 years and under. Consumer Product Safety Commission, Washington, D. C. 90 pp

United States Consumer Product Safety Commission (CPSC). ND. Small Batch Manufacturers and Third Party Testing. 3pp. www.cpsc.gov/info/toysafety/smallbatch.html

APPENDIX A - GENERIC WOOD TOY ASSEMBLY PROTOCOL

The following is a general description of the toy manufacturing protocol to be followed by all Association members when manufacturing wooden toys. If the assembly protocol you will be using varies significantly from this general protocol, please make modifications to this protocol and submit it to the Toy Committee for review and approval.

In order for the Association to issue a Children's Product Certificate (CPC) for a toy, we must have knowledge, and approve the toy assembly process. The toy must also pass the safety tests.

Our goal is to make safe and usable toys that meet all Federal and State legal requirements. Materials used by Association members will either be supplied or may be purchased off an approved materials list. This is especially true for any finish(s) applied to the toys (Appendix C). Natural finishes (mineral oil, bees wax, shellac, etc.) are allowed. There is always the no finish option.

Association members are to follow the procedure below (for a basic car or truck) when manufacturing toys.

- Step 1 - Select only wood stock supplied by or approved by the Association. For now this should be wood and not a man made product such as plywood or particle board (due to the glues and adhesives used to make the product that are untested). The use of plywood is being evaluated by CPSC and this restriction could change.
- Step 2 - Use one of the patterns from Appendix B to trace the outline onto the wood stock.
- Step 3 - Cut out the pattern to rough size.
- Step 4 - Drill the exact size holes for the axles you have (barely snug), window(s) and any other needed holes. Bit sizes are listed on the plans but be very careful to drill the perfect size axle holes.
- Step 5 - Sand and refine the toy to the final shape, including inside large holes such as windows.
- Step 6 - Round over all edges and windows. The edges should be smooth and discard any toys with splinters that can't be sanded smooth or that have unacceptable knots near the edge or elsewhere in the toy.
- Step 7 - Inspect the toy to ensure all surfaces are sanded smooth and that defects in the surface do not exist. Discard any toy that doesn't pass muster.

Step 8 – Install axles and wheels. Wheels should be 1.25-inches in diameter or larger. Any wheels less than 1.25-inches in diameter are considered a potential choking hazard if they were to break off the toy. Successful gluing of the wheels and axles are a critical step in ensuring the wheels do not come loose with use. Follow these gluing steps:

1. In most cases, the hole drilled for the axle should go through the width of the toy. If for some reason it does not, ensure the hole is at least 1/8-inch deeper than the length of the axle. This will allow extra room for excess glue and will avoid the hydraulic resistance that prevents the axle from being inserted to the correct depth. It is imperative that the axle hole be exactly the correct size for the axles you will be using. Drill test holes to be sure this is the case. Add an appropriate small amount of glue into the hole where the axle will be inserted. Note: a pipe cleaner works great for putting glue inside the axle hole without spreading glue on the outside. An occasional wipe down may be needed to prevent wheel from sticking to the toy.
2. Use at least a 1/32-inch spacer between the wheel and the toy body when gluing the axle in the toy. This spacer will ensure the wheel has adequate clearance to roll freely.
3. Ensure the correct amount of glue is used to attach the axle. Not too much and not too little. After about 30 minutes of drying time, check the wheel by giving it a slight tug to ensure it is attached firmly to the toy and check that it spins freely.

Step 9 – If a finish is to be applied, it must be listed on the Club's list of approved finishes which is a separate document. If the finish you wish to use is not on that list, you may submit it to the Toy Committee for approval. Do not apply any finish that is not on the Approved Finishes list (Appendix C).

APPENDIX B - TOY PATTERN APPROVAL PROCESS

Any club member may participate in the toy-making program, however, in order to be in compliance with Federally mandated toy safety procedures (Consumer Product Safety Improvement Act and ASTM F-963-11), the club has adopted a comprehensive set of procedures to ensure that all toys produced are made from approved patterns, built with sound construction techniques and that each toy is individually inspected to ensure it is safe to distribute into the network of organizations that distribute the toys. Be sure and read the Association's "Toy Production, Testing and Certification Procedures" for guidelines before proceeding with your pattern design.

The following procedure describes the protocol for submitting a toy pattern to the Toy Committee for review and approval by for production:

1. Any member may submit a plan for approval
2. All toy designs should be for children over 3 years old and must be pre-approved by the Toy Committee.
3. A detailed set of plans (preferably a drawing or pattern) must be submitted to the Toy Committee. The plan is to include:
 - a. Type of wood
 - b. Specific dimensions of all parts (including wheels and axles)
 - c. Specific joinery techniques if applicable
 - d. How edges will be machined (i.e. – 3/8" round-over)
 - e. Specific adhesive if applicable
 - f. Specific finish if applicable
 - i.
4. Two fully finished prototypes of the toy must be simultaneously submitted for testing
5. No metal fasteners or hardware of any kind are allowed
6. All wheels must be 1.25" in diameter or larger
7. No separate small parts are allowed (marbles, pegs, balls etc). There should be no exposed pegs or other points that could result in hazards following use and abuse testing.
8. Once approved, the toys must be produced exactly as approved
9. The approved patterns and assembly protocol, will be cataloged by the committee and can be used by any member to make that exact toy Copies of approved toy patterns are available from the Toy Committee.
10. If a man-made finish (i.e. paint) is to be applied to any part of the toy, the finish must either be supplied by the club or purchased using the approved finish list supplied by the Toy Committee (Appendix C). This is necessary because the Committee has to issue a certificate that the finish is lead free.
11. If the member or group of members wishes the club to pay for any parts or finishes, a budget must be submitted and approval must be obtained from the Toy Committee to be sure that the toy-making budget can cover the expense.
12. A sample of each type of toy will go through use and abuse testing and every toy will be Committee inspected, and stamped with identifying marks before distribution.

APPENDIX C - APPROVED TOY PATTERNS

TOY PATTERN (NO.)	DESCRIPTION	
All Patterns on SJFWA CD		

APPENDIX D – APPROVED FINISHES

The following finishes have been approved by the association for use in toy manufacturing:

1. No finish – leave the wood natural
2. Natural finishes (non-man made)
 - Bees wax
 - Mineral oil
 - Shellac flakes and Klean Strip S-L-X Denatured alcohol
 - GSI26 – quart
 - QGSL – gallon
 - CSL26 – 5 gallons
3. Man-made finishes

Paint – Only the following paint brands and colors may be purchased and used on the toys manufactured by the Association:

- a. Manufacturer PPG (Pittsburgh Paint)
 - i. Paint code
 - ii. Color All colors
- b. Manufacturer Rustoleum
 - i. Paint code
 - ii. Color All
- c. Manufacturer Orchard Supply Hardware (Rustoleum)
 - i. Paint code
 - ii. Color All
- d. Manufacturer Krylon
 - i. Paint code
 - ii. Color All
- e. Manufacturer Behr
 - i. Paint code
 - ii. Color All

APPENDIX E – TOY DISTRIBUTION PROCESS

The vast majority of the toys produced by the Association will be distributed through a network of non-profit organizations whose activities routinely involve contact with underprivileged children.

The distribution date will generally be in early December when the toys are all accumulated in two locations: one in the North and one in the South end of the Association boundaries.

Before the toys can be distributed they must have all received a final inspection by the Toy Committee and received a brand indicating they were correctly assembled and are safe for distribution. It is then appropriate to box the toys. Each box is to include the correct CPC's identifying the toys safety features and appropriate age ranges. The receiver should also be informed that the CPC's are available on our website at SJFWA.com for viewing at any time. A record will be kept of how many toys went to each non-profit each year.

When the toys are delivered, the receiver's attention should be drawn to the CPC's so that they can ensure that the children do not receive inappropriate toys. Once distribution is complete, the record of how many toys went where will be stored in the Toy section of the Association website.