

## INVESTIGATION GUIDELINE

### RESTRAINTS ON INFANT PRODUCTS

#### I. INTRODUCTION

##### A. Background Information

Each year, more than 70,000 children under the age of 5 are treated in U.S. hospital emergency rooms for injuries associated with nursery products. The majority of these injuries resulted from falls, frequently from products that employ restraint systems.

Previous U.S. Consumer Product Safety Commission (CPSC) research revealed several problems associated with restraints on nursery products. In some cases, the restraints were used, but an incident still occurred (such as, the product tipped over with the child restrained in it). In other cases, the child was not restrained in the product or the restraint failed mechanically. Other less frequently reported hazards included hanging, entrapment, defeat of the restraint, improper use, poor fit, and not having a restraint present on a product that should have had one.

In FY 2000, a CPSC project was established to evaluate the adequacy of restraints on nursery products. The goal of this project is to more fully define any deficiencies that may exist with restraints and to develop a voluntary performance requirement(s) that could be used to correct these problems.

In support of this project, additional information is needed about the circumstances involved in incidents that are related to restraint systems, including consumers' perceptions of how and why restraints should be used. For that reason some near-miss incidents will be assigned, in addition to the cases of injury and death. Data will be obtained through telephone and on-site investigations conducted by the Field. **For these investigations, photographs of available products are of the utmost importance.**

**(THIS GUIDELINE SHOULD NOT BE USED FOR INCIDENTS INVOLVING COMBINATION CAR SEAT/CARRIERS IF THE INCIDENT WAS RELATED TO A MOTOR VEHICLE CRASH)**

##### B. Description of Products

**Nursery products that are typically equipped with restraint systems include high chairs, attachable high chairs, strollers, carriages (if a stroller/carriage combination), booster seats, portable baby swings, and infant carriers.** These are products generally intended for children under five years of age, and are used in home, daycare, and commercial settings. Restraint systems in these products are provided to secure children in a recommended-use position to prevent the child from coming out of the product. A restraint system is more

than just straps and buckles. It is any part of the product that keeps a child secure while in that product (the tray on a high chair or the bar on a stroller, for example). Keeping that in mind, it is important to obtain information about the anchor points of the restraint system, the size and configuration of leg holes, the depth of seat, the presence of restraint bars, etc., that can contribute to problems with restraining the child.

- ❑ Most juvenile products incorporate a plastic or fabric strap in their child restraint system. These straps go around the child in various configurations and are secured with one or more fasteners. The fasteners are usually made of a hardened plastic, but some may be made of metal. This combination of straps and fasteners constitutes the restraint system.

Child restraint systems which use straps and fasteners are generally 2-, 3-, or 5-point systems. The “points” refer to how many straps come together at a fastener.

- ❑ A **2-point system** has straps, which go around the child at the waist and are secured with a fastener. These are often used on changing tables, commercial changing stations and strollers.
- ❑ A **3-point restraint system** is often found on strollers and high chairs. This system has straps, which go around a child’s waist and fasten to a crotch strap that comes up from the seat.



**3-Point Restraint Systems**

- ❑ A **5-point system** adds a shoulder harness to a waist and crotch strap. In a 5-point system, the shoulder harnesses usually use separate fasteners to attach to the waist strap and do not have to be disengaged to remove the child. These may be found on some strollers.



**5-Point Restraint System**

Sometimes, especially with high chairs, there is an added **“passive-restraint”** which may be a bar or strap from the base of the seat to the bottom of the tray. This passive restraint is designed to prevent the child from exiting the product feet first, but does not keep the child from climbing out of the product.



**Passive Restraint System**

Fasteners on child restraint systems have a variety of designs. Commonly used fasteners use either a center release mechanism or a side release mechanism.



**Center Release**



**Side Release**

### **C. Specific Items of Interest**

Field investigators should conduct an on-site investigation only if the product is available. Otherwise, a telephone interview will be sufficient. In specific cases, headquarters staff may request that a sample be collected through the assignment message. For cases assigned by the Field, the investigator should contact headquarters staff to determine whether a sample should be collected. In some instances the investigator may be asked to purchase a new sample, if the one involved in the incident is unavailable. Replacement products provided by the manufacturer should be photographed and not collected as a sample. (If the original restraint was replaced and is still available, the investigator may be asked to collect it. **However, under no circumstances should a restraint system be collected which would leave the consumer without one on the product.**) All collected samples should be sent to the Sample Custodian at the warehouse. The samples will be held at the warehouse until they are needed for examination.

Specific items of interest include:

- ❑ If the child was able to defeat or get out of the restraint system, describe how the child did so, if known, and whether it was accidental or deliberate. Had the child done this previously, or has he/she done it since the incident occurred? What age was the child when he/she first defeated or got out of the restraint system? Is the child able to do this with other nursery products? If so, photograph the product(s) and the restraint system(s).
- ❑ If the restraint system was a poor fit for the child, please describe. Was there any slack in the restraint straps when the child was buckled in as securely as possible? Did the restraints loosen during use and did they have to be adjusted routinely? Was the restraint difficult to secure/tighten around the child? Was the child placed in the

product with a blanket or other object that may have interfered with the restraint system fitting properly or that was used to make the restraint system fit better?

- ❑ If the nursery product was equipped with a restraint system, which was not in use at the time of the incident, probe for why this might have, been the case. For instance, was it too difficult to use or adjust? Did it appear that the child would be safe without the restraint? Was it overly time-consuming to secure the child? Was the child able to defeat the restraint system and so the parent stopped using it?
- ❑ If the restraint system consisted of straps, where were they anchored to the product? (Photograph or diagram the anchor points.) Was the restraint system adjustable?
- ❑ If the child was entrapped in the incident, describe the area of entrapment, how the child became entrapped, and how the restraint was involved.
- ❑ If the child was hung in the incident, describe how the restraint was involved, including from what part of the restraint system the child was hung.

#### **E. Headquarters Contacts**

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## **II. INSTRUCTIONS FOR COLLECTING SPECIFIC INFORMATION**

When documenting either the telephone or on-site investigation, it is essential to provide a detailed narrative description of the incident in order to provide a clear understanding of the sequence of events before, during, and after the incident, and the circumstances involved. If a telephone investigation (rather than an on-site investigation) is done, it is still important to obtain as much information about the product as possible. Have the respondent describe the product to you in detail, including features that are unique to that product. Timely contact of the victim's family will improve the likelihood of sample availability and accurate recollection by the respondent of the circumstances involved in the incident.

### **A. Synopsis**

Describe the sequence of events, reporting the product(s) involved and the victim's activity during the incident. Include the victim's age, sex, and type of injury. Indicate how the victim became injured. Specify the location (e.g., home, daycare, etc.) where the incident occurred. If outdoors, describe the terrain.

For data retrieval purposes, please include the following key words in the synopsis as appropriate: RESTRAINT, STRAP, BUCKLE, TRAY, HARNESS, BELT

## **B. Description of the Product**

### **1. Nursery Equipment Involved**

- a) Describe the specific type of nursery equipment involved. If it was a combination product (e.g., car seat/carrier, stroller/carrier, etc.), please indicate this.
- b) What were the manufacturer, brand, and model of the product?
- c) How old is the product? (Include date of purchase, if known.) Was it obtained new or used? If used, how old was the product when it was obtained?
- d) How often was the product used (e.g., daily, weekly, etc)?
- e) Describe the condition of the product (e.g., like new, well-used, damaged, etc.)
- f) Was the restraint system a permanent part of the product or could it be detached? Was the restraint system original to the product or an add-on item? If it is an add-on, please describe it.
- g) Had the product been modified, repaired, or altered in any way? If so, please describe how.
- h) Were there any age or weight limitations specified for the product by the manufacturer?

### **2. Restraint System**

- a) Describe the type of restraint system on the product. Was it a 2-, 3-, or 5-point system? Was it a restraint system that did not involve straps (passive restraint)? (**Refer to section B. Description of Products for definitions of these types of restraint systems**).
- b) How was the restraint system positioned on the child's body when it was buckled or secured? If a passive restraint was involved, where was the child's body in relation to the position of the restraint?
- c) Of what type of material were the restraint straps constructed (e.g., woven filament, plastic strips, etc.)?
- d) Were the restraints adjustable? If so, describe the mechanism for adjusting them.
- e) Was the restraint system original to the product?

- f) Describe the condition of the restraint system (e.g., like new, worn, frayed, etc.).
- g) Had the restraint system been modified, repaired, or altered in any way? If so please describe how.
- h) Was the product equipped with a “passive restraint” such as found on a high chair? If so, please describe it.
- i) If a stroller was involved, did it have a restraint bar? If so, please describe it.

### **3. Fastener, Buckle, or Latching Mechanism**

- a) Describe the type of fastener, buckle, or latching mechanism that was on the restraint system.
- b) Where was the fastener located when the restraint system was secured on the child?
- c) Did the fastener have a center or a side release mechanism? How many actions did it take to open it, and was it easily opened? Can the child open it and if so, how?
- d) Of what type of material was the fastener constructed (e.g., plastic or metal)?

### **4. Labeling**

- a) Describe any labeling on the product or restraints. Indicate where it was on the product and its exact wording.

### **C. Description of the Incident**

1. Describe the sequence of events leading up to, during, and after the incident.
2. If the child was able to defeat or get out of the restraint system, describe how the child did it, if known, and whether it was accidental or deliberate. Had the child done this previously, or has he/she done it since the incident occurred? What age was the child when he/she first defeated or got out of the restraint system? Is the child able to do this on other nursery products? If so, photograph the product(s) and the restraint system(s).
3. If the restraint system was a poor fit for the child, please describe. Was there any slack in the restraint straps when the child was buckled in as securely as possible? Did the restraints loosen during use? Was the restraint difficult to secure/tighten around the child? Was the child placed in the product with a blanket or other object that may have interfered with the restraint system fitting properly or that was used to make the restraint system fit better?

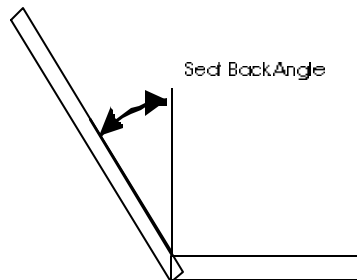
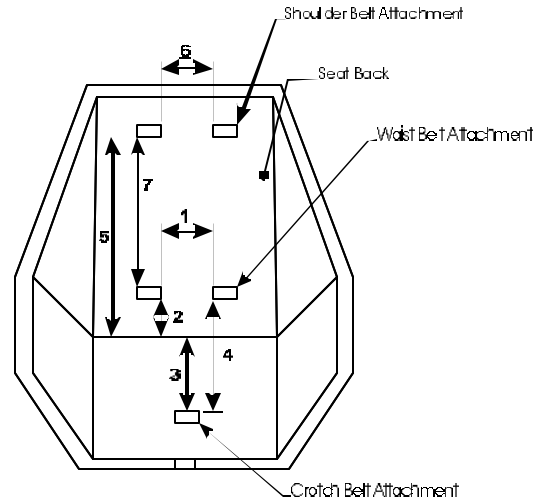
4. If the nursery product was equipped with a restraint system which was not in use at the time of the incident, probe for why this might have been the case. For instance, was it too difficult to use or adjust? Did it appear that the child would be safe without the restraint? Was it overly time-consuming to secure the child? Was the child able to defeat the restraint system and so the parent stopped using it?
5. Were there other children in the area during or preceding the incident, that may have released or attempted to release the restraint system? Have other children been known to do this in the past?
6. If the child was entrapped in the incident, describe the area of entrapment, how the child became entrapped, and how the restraint was involved.
7. If the child was hung in the incident, describe how the restraint was involved, including from what part of the restraint system the child was hung.
8. If a high chair was involved, did the tray generally deter the child from standing up in the chair? Could the tray be disconnected or moved by the child?

**D. Description of the Injured Person**

1. What was the age of the child (in years and months) at the time of the incident?
2. What were the height and weight of the child at the time of the incident?
3. What was the sex of the child?
4. Please describe the type of any injury incurred in the incident, including the part of the body involved.
5. If the child was injured, describe the nature of any treatment received, and the long-term prognosis of the child.



### III. INSTRUCTIONS FOR PHOTOGRAPHING AND/OR DIAGRAMMING THE PRODUCT



**Please include measurements #1-7 and seat back angle as shown above as they apply to the product.**

1. Photograph and/or diagram the entire product and obtain relevant measurements of product components that may relate to the incident, including areas of entrapment and leg hole openings (especially in the case of strollers).
2. For the restraint system specifically, please include the following in your photographs or diagrams:
  - Close-ups of the buckle or latching mechanism from all angles
  - All the points at which the restraints are anchored to the product.

- Close-ups of the restraints in the open and closed position. In the closed position, use a doll or manikin to show the position of the restraint on the child.
- 3. Photograph or diagram the specific part of the product involved in the incident.
- 4. Photograph or diagram the position of the child in the product, if possible, using a doll or manikin. This is particularly important in entrapment and hanging incidents.
- 5. If a high chair was involved, photograph or diagram the tray when it is positioned to hold the child. Also photograph or diagram the tray with a doll/manikin in the restraints, both with and without the tray.
- 6. Photograph or diagram any labeling on the product, indicating the position of the labeling on the product and the content of the labeling.

#### **IV. INSTRUCTIONS FOR OBTAINING DOCUMENTS RELATED TO THE INVESTIGATION**

Where the incident resulted in a death, obtain copies of any police or coroner's/medical examiner's reports that are available. Also obtain copies of any assembly instructions and owner's or safety manuals that came with the product. If an instructional video was provided with the product, please indicate what information was covered in the video. Whether literature or a video was provided, ask the consumer/caregiver to describe his understanding of the restraint system installation and usage instructions.