

# Tab A

RB.211-72-E044, Revision 1, dated May 2, 2003, to do the blade rework.

TABLE 1.—LP COMPRESSOR FAN BLADE REPLACEMENT OR REWORK SCHEDULE

For engines installed on:	Engine model:	Replace or rework LP compressor fan blades at or before accumulating:
(1) Boeing 777-300 .....	Trent 884-17 and Trent 892-17 .....	2,400 cycles-since-new (CSN).
(2) Boeing 777-200IGW .....	(i) Trent 892-17 .....	4,100 CSN.
	(ii) Trent 895-17 .....	3,200 CSN.
(3) Boeing 777-200ER .....	Trent 892B-17 .....	4,100 CSN.
(4) Boeing 777-200 .....	Trent 875-17, Trent 877-17, and Trent 884-17.	4,100 CSN.

#### Alternative Methods of Compliance

(h) The Manager, Engine Certification Office, has the authority to approve alternative methods of compliance for this AD if requested using the procedures found in 14 CFR 39.19.

#### Material Incorporated by Reference

(i) You must use RR SB No. RB.211-72-E044, Revision 1, dated May 2, 2003, to perform the blade rework required by this AD.

#### Related Information

(j) CAA airworthiness directive 001-05-2003, dated June 20, 2003, also addresses the subject of this AD, and RR SB No. RB.211-72-E055, Revision 1, dated June 20, 2003, pertains to the subject of this AD.

Issued in Burlington, Massachusetts, on October 16, 2003.

Jay J. Pardee,

Manager, Engine and Propeller Directorate, Aircraft Certification Service.

[FR Doc. 03-26720 Filed 10-22-03; 8:45 am]

BILLING CODE 4910-13-P

## CONSUMER PRODUCT SAFETY COMMISSION

### 16 CFR Chapter II, Subchapter D

#### Ignition of Upholstered Furniture by Small Open Flames and/or Smoldering Cigarettes; Advance Notice of Proposed Rulemaking; Request for Comments and Information

**AGENCY:** Consumer Product Safety Commission.

**ACTION:** Advance notice of proposed rulemaking.

**SUMMARY:** The Consumer Product Safety Commission (CPSC or Commission) has found, based on available information, that a new flammability standard or other regulation may be needed for upholstered furniture products and for fabrics and related materials used in, or intended for use in, upholstered furniture, to protect the public against unreasonable risk of fire leading to death, personal injury, or significant property damage. The risk of fire

addressed in today's advance notice of proposed rulemaking (ANPR) is from ignition of upholstered furniture by small open flames and/or smoldering cigarettes. This proceeding is being conducted under authority of the Flammable Fabrics Act (FFA).

In 1994, the Commission commenced a regulatory proceeding under the FFA addressing the risk of fire from ignition of upholstered furniture by small open flame sources such as matches, cigarette lighters, and candles. 59 FR 30735 (1994). This ANPR reflects the Commission's decision to expand that proceeding to explicitly address cigarette ignitions as well.<sup>1</sup>

The Commission solicits written comments from interested persons concerning the risk of injury and death associated with ignition of upholstered furniture by smoldering cigarettes and/or small open flames, data on cigarette or small open flame ignition testing of upholstered furniture, the regulatory alternatives discussed in this notice, other possible means to address this risk, and the economic impacts of the various alternatives. The Commission also invites interested persons to submit an existing standard, or a statement of intent to modify or develop a voluntary standard, to address the risk of death or injury due to ignition of upholstered furniture by small open flames and/or smoldering cigarettes.

**DATES:** Written comments and submissions in response to this notice must be received by December 22, 2003.

**ADDRESSES:** Comments and other submissions should be captioned "Upholstered Furniture Flammability Proceeding" and mailed to the Office of the Secretary, Consumer Product Safety Commission, Washington, DC 20207, or delivered to that office, room 502, 4330 East-West Highway, Bethesda, Maryland 20814. Comments and other submissions may also be filed by

<sup>1</sup> The Commissioners voted 3-0 to issue this ANPR. Statements of Commissioners Moore and Gall concerning the vote are available on the CPSC Web site at <http://www.cpsc.gov>.

facsimile to (301) 504-0127 or by e-mail to [cpssc-os@cpssc.gov](mailto:cpssc-os@cpssc.gov).

**FOR FURTHER INFORMATION CONTACT:** Dale R. Ray, Project Manager, Directorate for Economic Analysis, U.S. Consumer Product Safety Commission, Washington, DC 20207; telephone (301) 504-7704; fax (301) 504-0109; e-mail [dray@cpssc.gov](mailto:dray@cpssc.gov).

#### SUPPLEMENTARY INFORMATION:

##### A. The Product

Products within the scope of this ANPR include: (1) upholstered furniture used in homes, offices, and other places of assembly and public accommodation that consist in whole or in part of resilient materials (such as polyurethane foam, cotton batting, or related materials) enclosed within a covering consisting of fabric or related materials, and (2) fabric or related materials used or intended for use in the production of upholstered furniture. This scope is the same as that of the Commission proceeding commenced in 1994 under the FFA concerning small open flame ignition of upholstered furniture. 59 FR 30735 (1994).

##### B. The Upholstered Furniture Market

The Commission staff estimates that there were over 1,500 U.S. manufacturers of upholstered furniture, accounting for an estimated \$8.4 billion in shipments in 1997, the most recent year for which Census of Manufacturers data are available.<sup>2</sup> In that year, imports

<sup>2</sup> The technical and economic information summarized in this ANPR is set forth in considerably more detail in the various CPSC staff briefing materials prepared on the subject of upholstered furniture flammability, including Upholstered Furniture Flammability: Analysis of Comments from the CPSC Staff's June 2002 Public Meeting, February 2003; Upholstered Furniture Flammability: Regulatory Options, October 2001; Upholstered Furniture Flammability: Regulatory Options for Small Open Flame & Smoking Material Ignited Fires, October 1997; and Briefing Package on Petition FP 93-1, Upholstered Furniture Flammability, April 1994. These and other documents pertinent to this proceeding may be obtained from the CPSC Web site at <http://www.cpsc.gov> or from the CPSC Office of the

Continued

accounted for about \$550 million, for total shipments of about \$8.9 billion. Shipments are concentrated among the major producers. The 50 largest firms reportedly accounted for approximately 70% of the total value of all upholstered furniture shipments in 1997. Most of the remaining manufacturers were small firms, none of which accounted for a significant portion of sales.

The average life of most upholstered furniture is about 15–17 years. The CPSC staff estimates that over 400 million pieces of upholstered furniture are in use in the U.S.

There are between 100 and 200 manufacturers of fabric for household upholstered furniture. This number includes textile mills that produce finished upholstery fabric, and textile finishers that purchase unfinished goods and perform additional operations, such as printing and dyeing. The top 16 firms account for about 80 percent of the upholstery fabric market.

U.S. upholstery fabric production in 1997 was 665.5 million square yards, about 345–360 million square yards of which went into production of residential upholstered furniture. Approximately two percent of total consumption of upholstery fabric for residential furniture production was imported. About 53 percent of upholstered furniture cover materials were predominantly synthetic, mostly thermoplastic fabrics such as polyester, polyolefin and nylon. About 27 percent were predominantly cellulosic fabrics like cotton and rayon. About 20 percent were leather.

### C. Additional Background Information

#### 1. Cigarette Ignitions

Cigarette ignitions of upholstered furniture have long been a leading cause of residential fire deaths, injuries and property damage. The Commission has extensively investigated this risk since the 1970s, when the CPSC staff prepared a draft proposed cigarette ignition standard. In 1977, a furniture industry group, the Upholstered Furniture Action Council (UFAC), established a voluntary industry program as an alternative to CPSC rulemaking. The UFAC voluntary guidelines were amended in 1983, and are widely followed among manufacturers today.

Based on a 1996 CPSC survey, more than 85 percent of currently manufactured upholstered furniture

(including products from non-UFAC member firms) met the UFAC guidelines. Further, based on sales-weighted estimates of CPSC laboratory test results, more than 80 percent of currently produced furniture was estimated to resist cigarette ignition. This estimate, which reflects a gradual increase in the use of inherently cigarette-resistant upholstery fabrics and filling materials, represents about a 70 percent improvement in cigarette ignition resistance since 1980.

Upholstered furniture products meeting the existing State of California regulation, Technical Bulletin (TB) 117, offer a level of cigarette ignition resistance comparable to that of products conforming to the UFAC guidelines. In 1998, the California Bureau of Home Furnishings and Thermal Insulation initiated a project to upgrade the small open flame resistance provisions of TB-117. The cigarette resistance provisions of TB-117 are not being revised.

Both the American Furniture Manufacturers Association (AFMA) and a group of six upholstery fabric manufacturers known as the Fabric Coalition have expressed support for a mandatory national standard addressing cigarette and small open flame ignitions of upholstered furniture.<sup>3</sup>

#### 2. Small Open Flame Ignitions

Beginning in 1994, CPSC staff developed a draft small open flame standard for residential upholstered furniture that would prevent or limit fire growth following exposure to a small open flame such as that from a match or cigarette lighter. The staff's draft standard contains flammability performance tests for seating areas and dust covers, as well as requirements for production testing and recordkeeping. The most recent draft appears in the CPSC staff's October 2001 briefing package.<sup>4</sup> The staff's draft standard contains no performance tests for cigarette ignition resistance.

Manufacturers have identified flame retardant (FR) upholstery fabrics as a likely means of limiting fire growth to meet the draft small open flame standard. FR fabrics are not needed to meet the existing California TB-117 regulation or the UFAC voluntary guidelines. CPSC laboratory testing suggested, however, that FR upholstery

fabrics would reduce the risk of upholstered furniture fires ignited by smoldering cigarettes as well as by small open flame sources. CPSC staff estimates that about 80 percent of the projected benefits of a possible small open flame standard would accrue from reductions in cigarette fire losses.

### D. Statutory Authority

This proceeding is conducted under authority of the Flammable Fabrics Act, 15 U.S.C. 1191–1204. An item of upholstered furniture is an "interior furnishing" "product" as those terms are defined in sections 2(e) and (h) of the FFA, 15 U.S.C. 1191(e) and (h). The Commission has authority under section 4(a) of the FFA to institute a proceeding to issue a flammability standard or other regulation, including labeling, for an interior furnishing product if it determines that such a standard "may be needed to adequately protect the public against unreasonable risk of the occurrence of fire leading to death or personal injury, or significant property damage." 15 U.S.C. 1193(a).

A proceeding to promulgate a regulation establishing a flammability standard begins by publication of an ANPR. FFA section 4(g), 15 U.S.C. 1193(g). If the Commission elects to continue the rulemaking proceeding after considering responses to the ANPR, the Commission must publish a preliminary regulatory analysis along with the text of the proposed rule. FFA section 4(i), 15 U.S.C. 1193(i).

If the Commission then moves forward to issue a regulation, in addition to the text of the final rule, it must publish a final regulatory analysis that includes: (1) A description of the potential benefits and costs of the rule; (2) a summary of any alternatives that were considered, their costs and benefits, and the reasons for their rejection; and (3) a summary and assessment of any significant issues raised on the preliminary regulatory analysis that accompanied the proposed rule. FFA section 4(j)(1), 15 U.S.C. 1193(j)(1). In addition, the Commission must make findings concerning the inadequacy of any pertinent voluntary standard, that the benefits of the rule bear a reasonable relationship to its costs, and that the rule is the least burdensome requirement that prevents or adequately reduces the risk of injury. FFA section 4(j)(2), 15 U.S.C. 1193(j)(2).

### E. The Risk of Injury and Death

Fires involving ignitions of upholstered furniture constitute a leading cause of residential fire losses. Furniture fires killed more people in 1998 (the latest year for which data are

Secretary. The documents are also available for inspection at the Commission's Public Reading Room, 4330 East-West Highway, room 419, Bethesda, Maryland 20814. For further information please contact the Office of the Secretary to the Commission at (301) 504-0800.

<sup>3</sup> Copies of the AFMA and Fabric Coalition correspondence to this effect may be obtained from the CPSC Web site at <http://www.cpsc.gov> or from the CPSC Office of the Secretary.

<sup>4</sup> Upholstered Furniture Flammability: Regulatory Options, October 2001. See fn. 1 *supra* regarding viewing and obtaining copies of this and other related documents.

available) than did fires involving any other category of consumer products under the Commission's jurisdiction. About four-fifths of the estimated deaths and about two-thirds of the estimated

injuries that CPSC staff believes could be addressed by a mandatory standard were from smoldering ignition by smoking materials (almost always cigarettes), as shown below. In addition,

about four-fifths of the estimated societal costs (\$1.9 billion out of \$2.4 billion) of upholstered furniture fires were cigarette ignition-related.

#### ESTIMATED 1998 ADDRESSABLE UPHOLSTERED FURNITURE FIRE LOSSES<sup>5</sup>

	Fires	Deaths	Injuries	Property Loss (\$mil)
Smoking Materials .....	4,700	340	730	87
Small Open Flame .....	1,500	80	350	32
Total .....	6,200	420	1,080	120

Although cigarette-ignited furniture fire deaths have declined by about 70 percent over the past two decades, recent years' data suggest the decline may be leveling off. Even at the 1998 level, the number of deaths is large, and the potential economic benefits of reducing the \$1.9 billion in societal costs are substantial.

#### F. Existing Standards

##### 1. UFAC Program

The UFAC voluntary program contains six cigarette ignition performance tests for different upholstered furniture components (cover and interior fabrics, "barriers" *i.e.*, batting, decking and filling/padding materials, decorative trim and welt cord) as well as certification and product labeling provisions. The UFAC guidelines encourage the use of the inherently smolder-resistant materials that have become popular on the market.

The UFAC fabric classification test (now embodied in ASTM voluntary test method E-1390) denotes upholstery cover fabrics as either Class I or Class II. Class I fabrics are less ignition-prone. Class II fabrics are more ignition-prone. To conform to the UFAC guidelines, Class II fabrics may only be used in constructions with smolder-resistant batting (or other materials that conform to the UFAC "barrier" test) between the fabric and interior materials of the furniture. However, CPSC laboratory testing of full scale chairs demonstrated that UFAC-conforming products made with smolder-prone fabrics can ignite and burn even when polyester batting or other ignition-resistant fillings are present. Thus, CPSC staff believes that

UFAC component conformance does not guarantee cigarette resistance of the finished article.

##### 2. California Technical Bulletins

California Technical Bulletin 117, which is mandatory for all upholstered furniture sold in the state, contains component performance tests for cigarette ignition resistance of fibrous/loose fill and cellular foam filling materials. Upholstered furniture sold in California must also be labeled as complying with the TB-117 performance requirements.

Like the UFAC voluntary program, TB-117 is comprised of component tests. Another California standard, TB-116, is available to manufacturers on a voluntary basis. TB-116 incorporates a full-scale (or small-scale composite) cigarette test. Manufacturers whose products meet this standard may use labels stating that the products provide a higher level of fire protection.

TB-116 and 117 are not national standards. However, some manufacturers, importers and retailers offer TB-117-compliant products for nationwide distribution.

##### 3. Fire Safe Cigarette Legislation

Regulations implementing New York State legislation requiring "fire-safe," *i.e.*, lower ignition propensity (IP), cigarettes may become effective in 2003.<sup>6</sup> Lower IP cigarettes would presumably reduce fire losses, including those involving upholstered furniture. Several federal fire-safe cigarette bills were introduced unsuccessfully in the 107th Congress.<sup>7</sup> The extent to which lower-IP cigarettes may reduce the risk of ignition of upholstered furniture and other home furnishings is currently unknown.

#### G. Finding

Based on information currently available to it from investigations, research, and other sources, the Commission finds that a new flammability standard, or other regulation, may be needed for upholstered furniture products made from fabrics and related materials, and for fabrics and related materials used in, or intended for use in upholstered furniture, to protect the public against the unreasonable risk of the occurrence of fire leading to death, personal injury or significant property damage. FFA section 4(a), 15 U.S.C. 1193(a). The risk of the occurrence of fire addressed in this ANPR is that from ignition of upholstered furniture by small open flames and/or smoldering cigarettes. Commencing this proceeding expands the Commission's prior FFA proceeding addressing small open flame ignition sources such as matches, cigarette lighters, and candles to also include ignition by smoldering cigarettes.

#### H. Regulatory Alternatives Under Consideration

##### 1. Flammability Standard

If the Commission finds that one is needed to adequately protect the public against an unreasonable risk of the occurrence of fire leading to death, injury, or significant property damage, it may promulgate a flammability standard for upholstered furniture. Any such standard must be stated in objective terms and be reasonable, technologically practicable, and appropriate. FFA section 4(b), 15 U.S.C. 1193(b). It also must be limited to those fabrics, related materials, or products that have been determined to present the unreasonable risk of fire at issue in the proceeding. Id.

##### 2. Labeling Regulation

Either separately or as part of a flammability standard, the Commission may consider issuing a labeling regulation as part of this proceeding. FFA section 4(a), 15 U.S.C. 1193(a).

<sup>5</sup> Addressable losses from NFIRS cases identified as upholstered furniture, with appropriate coding for type of material ignited, area of origin, ignition factor, and equipment involved. Out-of-scope or inconsistently coded cases, including incendiary and suspicious fires, are excluded. *Source*: Upholstered Furniture Flammability: Regulatory Options, CPSC October 2001.

<sup>6</sup> Fire Safety Standards for Cigarettes, N.Y. Executive Law, Chapter 18, Article 6-C, § 156-c (McKinney 2003).

<sup>7</sup> See, e.g., Fire Safe Cigarette Act of 2002, HR 5059 IH, 107th Congress, 2d Session, introduced June 27, 2002.

### 3. Voluntary Standard

If the Commission determines that any voluntary or other standard or portion thereof submitted in response to this ANPR would eliminate or adequately reduce the risk of injury in question it may issue that standard, or a portion of it, as a proposed regulation. FFA section 4(h)(1); 15 U.S.C. 1193(h). In general, the Commission may not promulgate a regulation if there is an existing voluntary standard addressing the same risk that would likely result in the elimination or adequate reduction of that risk and with which there would likely be substantial compliance. FFA sections 4(h)(2) and (j)(2); 15 U.S.C. sections 1193(h)(2) and (j)(2).

### I. Solicitation of Information and Comments

This ANPR is the first step in a proceeding which could result in a mandatory flammability standard and/or labeling regulation, or a voluntary standard for upholstered furniture that presents an unreasonable risk of the occurrence of fire due to cigarette or small open flame ignition leading to death or personal injury or significant property damage. The Commission invites interested persons to submit their comments on any aspect of the alternatives discussed above. Specifically, in accordance with section 4(g) of the FFA, the Commission solicits:

1. Written comments with respect to:
  - (a) The risk identified by the Commission;
  - (b) the need for flammability performance requirements to address cigarette and/or small open flame ignition of upholstered furniture;
  - (c) the need for a uniform national upholstered furniture flammability standard;
  - (d) the relationship between cigarette and small open flame ignition performance;
  - (e) the regulatory alternatives being considered and the potential effectiveness and economic impacts of these alternatives; and
  - (f) other possible alternatives for addressing the risk and the effectiveness and economic impacts of these alternatives.
2. Any existing standard or portion of a standard which could be issued as a proposed regulation.
3. A statement of intention to modify or develop a voluntary standard to address the risk of injury discussed in

this notice, together with a description of a plan to do so.

In addition, the Commission would like to receive data on cigarette and small open flame ignition tests of upholstered furniture.

Comments and other submissions should be captioned "Upholstered Furniture Flammability Proceeding" and mailed to the Office of the Secretary, Consumer Product Safety Commission, Washington, DC 20207, or delivered to that office, room 502, 4330 East-West Highway, Bethesda, Maryland 20814. Comments and other submissions may also be filed by facsimile to (301) 504-0127 or by e-mail to [cpsc-os@cpsc.gov](mailto:cpsc-os@cpsc.gov). All comments and other submissions must be received by December 22, 2003.

Dated: October 20, 2003.

**Todd A. Stevenson,**  
Secretary, Consumer Product Safety Commission.

[FR Doc. 03-26809 Filed 10-22-03; 8:45 am]

BILLING CODE 6355-01-P

## ADVISORY COUNCIL ON HISTORIC PRESERVATION

### 36 CFR Part 800

RIN 3014-AA06

### Protection of Historic Properties

**AGENCY:** Advisory Council on Historic Preservation.

**ACTION:** Proposed rule; extension of comment period.

**SUMMARY:** The Advisory Council on Historic Preservation is extending by 30 days the public comment period for the proposed amendments to the regulations implementing Section 106 of the National Historic Preservation Act. Such proposed amendments were published in the *Federal Register* on September 25, 2003. This extended comment period will afford greater opportunity to all interested parties to review and submit comments on the proposal.

**DATES:** Comments must be received on or before November 26, 2003.

**ADDRESSES:** Address all comments concerning this proposed rule to the Executive Director, Advisory Council on Historic Preservation, 1100

Pennsylvania Avenue, NW., Suite 809, Washington, DC 20004. Fax (202) 606-8672. You may submit electronic comments to: [achp@achp.gov](mailto:achp@achp.gov). For electronic comments, please type "Regs Amendment 2003" in the subject line of the e-mail.

**FOR FURTHER INFORMATION CONTACT:** Javier Marqués, Advisory Council on Historic Preservation, 1100 Pennsylvania Avenue, NW., Suite 809, Washington, DC 20004; (202) 606-8503.

**SUPPLEMENTARY INFORMATION:** In response to requests filed with the Advisory Council on Historic Preservation (ACHP), the comment period for the proposed amendments to the regulations implementing Section 106 of the National Historic Preservation Act now ends on November 26, 2003. This is an extension of 30 days beyond the comment period established in the *Federal Register* on September 25, 2003.

The Section 106 regulations set forth how Federal agencies take into account the effects of their undertakings on historic properties and afford the ACHP a reasonable opportunity to comment, pursuant to Section 106 of the National Historic Preservation Act. Most of the proposed amendments to those regulations respond to recent court decisions which held that (1) the ACHP could not force a Federal agency to change its determinations regarding whether its undertakings affected or adversely affected historic properties, and (2) that Section 106 does not apply to undertakings that are merely subject to State or local regulation administered pursuant to a delegation or approval by a Federal agency. Another proposed amendment clarifies the time period for objections to "No Adverse Effect" findings. The last proposed amendments clarify that the ACHP can propose an exemption to the Section 106 process on its own initiative, rather than needing a Federal agency to make such a proposal. See the proposal as published in the *Federal Register* (68 FR 55354, September 25, 2003) for further information.

Dated: October 20, 2003.

**John M. Fowler,**  
Executive Director.

[FR Doc. 03-26799 Filed 10-22-03; 8:45 am]

BILLING CODE 4310-10-P

# Tab B



UNITED STATES  
CONSUMER PRODUCT SAFETY COMMISSION  
WASHINGTON, DC 20207

**Memorandum**

Date: November 21, 2005

TO : Dale Ray  
Directorate for Economic Analysis

THROUGH: Russell Roegner, Ph.D., Associate Executive Director **RR**  
Directorate for Epidemiology

FROM : Mark S. Levenson, Ph.D. **ML**  
Division of Hazard Analysis

SUBJECT : Upholstered Furniture Addressable Fire Loss Estimates for 1999 - 2002

**Introduction**

In October 2003, the U.S. Consumer Product Safety Commission (CPSC) issued an advance notice of proposed rule making (ANPR) to address the risk of upholstered furniture fires from ignitions by small open flames and/or smoldering cigarettes [1]. This proceeding is conducted under the authority of the Flammable Fabrics Act (FFA). Under the FFA, the CPSC must consider the costs and benefits of a proposed rule. The benefits from an upholstered furniture rule would be in the reduction in fires losses from the adoption of a standard. These losses include deaths, injuries, and property loss from upholstered furniture fires.

CPSC staff publishes reports of annual residential fire loss estimates [2,3]. These reports provide fire loss estimates for a range of consumer products. Table 1 displays the estimated losses associated with upholstered furniture broken down by year based on the most recent report [3]. Upholstered furniture accounted for an estimated annual average 9,000 fires, 520 civilian deaths, 1,040 civilian injuries, and \$242 million dollars in property damage for the years 1999 to 2002. Upholstered furniture fires are associated with the largest number of fire deaths among products under CPSC's jurisdiction.

It is not expected that all of the fire losses associated with upholstered furniture would be eliminated under the 2005 CPSC staff's draft standard. First, the staff's draft standard addresses only fires from small open flame and/or smoldering cigarette ignitions of upholstered furniture. Small open flame ignitions include ignitions from such sources as matches, lighters, and candles. Ignitions from other sources such as electric appliances would not be addressable, for example. Also, fires arising from arson are assumed not to be addressable.

Table 1: Estimated Upholstered Furniture Fire Losses in 1999 to 2002.

<i>Year</i>	<i>Fires</i>	<i>Civilian Deaths</i>	<i>Civilian Injuries</i>	<i>Property Loss (Millions)</i>
1999	9,300	430	1,090	\$231
2000	9,000	580	1,120	\$269
2001	9,100	620	1,020	\$217
2002	8,600	460	940	\$252
Average	9,000	520	1,040	\$242

Source: U.S. Consumer Product Safety Commission from data obtained from the U.S. Fire Administration and the National Fire Protection Association.

Notes: Estimates include residential structure losses only and exclude losses involving arson. Estimated fires rounded to the nearest 100. Estimated deaths and injuries rounded to the nearest 10. Estimated property loss rounded to the nearest million. Averages are based on the unrounded estimates.

Second, some fraction of losses from addressable fires may not be eliminated under the staff's draft standard. The CPSC staff's draft standard is designed to reduce the progression and severity of upholstered furniture fires. The draft standard places performance criteria on many of the component materials of furniture, including upholstery fabrics, fillings, and fire barriers. Even with reduced progression and severity, some upholstered furniture losses would not be eliminated.

This memo presents estimates of upholstered furniture fire losses that are addressable under the CPSC staff's draft standard. These losses represent the collection of losses that would be affected by the standard. There are several notes of caution in using the fire loss estimates given in this memo. In 1999, one of the two data sources used in the estimation of fire losses, the National Fire Incident Reporting System (NFIRS), underwent a major revision. Comparisons of estimates for years prior to 1999 from previous reports with estimates from 1999 and onward in the present memo should be done with caution. Also, there have been some revisions in the processing of the master file used to produce the 1999 estimates [3]. Therefore, there are some small differences between the 1999 estimates in the present memo and those from a previous memo that included addressable losses for the years 1995 to 1999 [4].

### **Upholstered Furniture Fire Loss Estimates**

Tables 2 to 5 provide the addressable fire, death, injury, and property loss estimates for the years 1999 to 2002. Tables 6 and 7 break down the yearly averages of addressable death and injury loss estimates by the age of the victim.

Over the four years of 1999 to 2002, there were estimated yearly average addressable losses of 4,800 fires, 360 deaths, 740 injuries, and 133 million dollars property damage. For each loss measure, the loss estimates associated with smoking materials were substantially larger than those associated with small open flames. However, for victims under the age of 15, there appear to be more deaths and injuries from small open flame ignitions than from smoking material ignitions.

Table 2: Estimated Addressable Upholstered Furniture Fires 1999 to 2002.

<i>Year</i>	<i>Smoking Materials</i>	<i>Small Open Flames</i>	<i>Total</i>
1999	4,200	1,400	5,600
2000	3,900	1,200	5,100
2001	3,300	1,200	4,500
2002	2,800	1,200	4,000
Average	3,600	1,300	4,800

Source: U.S. Consumer Product Safety Commission from data obtained from the U.S. Fire Administration and the National Fire Protection Association.

Notes: Estimates include residential structure losses only and exclude losses involving arson. Estimated fires rounded to the nearest 100. Totals and averages are based on the unrounded estimates.

Table 3: Estimated Addressable Upholstered Furniture Civilian Deaths 1999 to 2002.

<i>Year</i>	<i>Smoking Materials</i>	<i>Small Open Flames</i>	<i>Total</i>
1999	320	20	340
2000	310	120	430
2001	380	50	430
2002	190	40	240
Average	300	60	360

Source: U.S. Consumer Product Safety Commission from data obtained from the U.S. Fire Administration and the National Fire Protection Association.

Notes: Estimates include residential structure losses only and exclude losses involving arson. Estimated deaths rounded to the nearest 10. Totals and averages are based on the unrounded estimates.

Table 4: Estimated Addressable Upholstered Furniture Civilian Injuries 1999 to 2002.

<i>Year</i>	<i>Smoking Materials</i>	<i>Small Open Flames</i>	<i>Total</i>
1999	560	300	860
2000	550	300	840
2001	470	220	680
2002	330	220	550
Average	480	260	740

Source: U.S. Consumer Product Safety Commission from data obtained from the U.S. Fire Administration and the National Fire Protection Association.

Notes: Estimates include residential structure losses only and exclude losses involving arson. Estimated injuries rounded to the nearest 10. Totals and averages are based on the unrounded estimates.

Table 5: Estimated Addressable Upholstered Furniture Property Loss (Millions) 1999 to 2002.

<i>Year</i>	<i>Smoking Materials</i>	<i>Small Open Flames</i>	<i>Total</i>
1999	\$96	\$35	\$130
2000	\$123	\$35	\$158
2001	\$81	\$42	\$123
2002	\$62	\$58	\$121
Average	\$91	\$42	\$133

Source: U.S. Consumer Product Safety Commission from data obtained from the U.S. Fire Administration and the National Fire Protection Association.

Notes: Estimates include residential structure losses only and exclude losses involving arson. Estimated property loss rounded to the nearest million. Totals and averages are based on the unrounded estimates.

Table 6: Estimated Addressable Upholstered Furniture Civilian Deaths 1999 to 2002 Average by Age of Victim.

<i>Victim Age (Years)</i>	<i>Smoking Materials</i>	<i>Small Open Flames</i>	<i>Total</i>
< 5	10	20	30
5 - 14	10	10	30
15 - 64	180	20	190
65+	100	0	110
Total	300	60	360

Source: U.S. Consumer Product Safety Commission from data obtained from the U.S. Fire Administration and the National Fire Protection Association.

Notes: Estimates include residential structure losses only and exclude losses involving arson. Estimated deaths rounded to the nearest 10. Totals and averages are based on the unrounded estimates.

Table 7: Estimated Addressable Upholstered Furniture Civilian Injuries 1999 to 2002 Average by Age of Victim.

<i>Victim Age (Years)</i>	<i>Smoking Materials</i>	<i>Small Open Flames</i>	<i>Total</i>
< 5	20	50	70
5 - 14	10	30	50
15 - 64	350	160	510
65+	90	20	120
Total	480	260	740

Source: U.S. Consumer Product Safety Commission from data obtained from the U.S. Fire Administration and the National Fire Protection Association.

Notes: Estimates include residential structure losses only and exclude losses involving arson. Estimated injuries rounded to the nearest 10. Totals and averages are based on the unrounded estimates.

## Methodology

The 1999 – 2002 Residential Fire Loss Estimates report [3] describes the general methodology used by CPSC staff to derive national fire loss estimates and discusses some of the recent changes in the data sources. Refer to the report for details on the general methodology. That methodology and the specific methodology employed to derive addressable upholstered furniture losses are summarized here.

The fire loss estimates given in this report are derived from two data sources: the National Fire Protection Association (NFPA) annual survey of fire departments and the U.S. Fire Administration (USFA) National Fire Incident Reporting System (NFIRS). The NFPA survey provides national estimates for the U.S. of aggregate fires, deaths, injuries, and property losses. NFIRS is a compilation of standardized incident reports submitted by U.S. fire departments to states that in turn submit them to the USFA.

NFIRS is neither a census nor a probability sample of fire incidents. Not all fire departments and states participate in NFIRS and participation varies from year to year. However, NFIRS incidents are believed to be representative of U.S. incidents. To derive national estimates of fire losses based on NFIRS, the NFIRS incidents are weighted by the ratio of the NFPA national estimate to the total number of NFIRS incidents for the loss. Only residential structure fires are considered for the purpose of the CPSC staff's Annual Report and this memo.

NFIRS summarizes each fire incident using a set of variables and associated codes [5]. Table 8 gives the variables used for the present analysis. The first three variables in the table, *Item First Ignited*, *Heat Source*, and *Cause of Ignition*, are the primary variables used to identify the fires in the scope of the analysis. These fires are fires in which the first item ignited was upholstered furniture, the heat source was small open flames or smoldering cigarettes, and the cause was not arson. Tables A1, A2, and A3 in the appendix give the specific codes for these variables and how they were classified in the analysis.

A secondary set of variables, *Equipment Involved in Ignition*, *Factors Contributing to Ignition*, *Area of Fire Origin*, and *Type of Material First Ignited*, was used to further refine the identification of the fires in scope of the analysis and eliminate coding inconsistencies. For some codes of these variables, the corresponding fire would not be addressable by the staff's draft standard. For example, electrical fires would not be considered addressable. Some codes of these variables suggest coding inconsistencies. For example, an area of origin of "chimney" appears implausible. The decision was made that such coding inconsistencies would be treated as out of scope. Tables A4 to A7 in the appendix give the specific codes for these variables and how they were classified in the analysis.

Table 8: NFIRS Variables Used in Estimating Fires Losses.

<b>Variable Names</b>	<b>Description/Example</b>
<i>Item First Ignited</i>	Functional description or use of the material, e.g., upholstered furniture
<i>Heat Source</i>	Source of heat that ignited fire, e.g., match
<i>Cause of Ignition</i>	General cause resulting in heat source igniting combustible material, e.g., unintentional
<i>Equipment Involved in Ignition</i>	Identity of equipment involved, e.g., space heater
<i>Factors Contributing to Ignition</i>	Contributing factors in heat source igniting combustible material, e.g., equipment overload
<i>Area of Fire Origin</i>	The room or space where fire originated, e.g., kitchen
<i>Type of Material First Ignited</i>	Composition of material ignited, e.g., fabric
<i>Age</i>	Age of casualty

The NFIRS variables include codes indicating the actual code of the variable is unknown. For the three primary NFIRS variables, these unknowns were allocated to the known values by a procedure known as raking [6]. The procedure maintains the marginal distribution of the known codes for each variable.

For the secondary NFIRS variables, only known values were used to declare a fire out-of-scope. Among incidents in which the primary variables indicated that the incident was in-scope, there was only a small percentage in which the known codes of the secondary variables implied that the incident was out-of-scope. In the interest of not increasing the complexity of the raking procedure, the secondary variables were not included in the raking procedure. Equivalently, the unknown codes for the secondary variables were considered in scope. This is reflected in Tables A4 to A7.

## Appendix A: NFIRS Variable Codes

Table A1: Item First Ignited Codes.

Description	Code	Scope
Upholstered sofa, chair, vehicle seat	21	In/Upholstered Furniture
Undetermined item ignited	UU	Unknown
<b>Other</b>	All other codes	Out

Table A2: Heat Source Codes.

Description	Code	Scope
Cigarette	61	In/Smoking Materials
Pipe or cigar	62	In/Smoking Materials
Heat from undetermined smoking	63	In/Smoking Materials
Match	64	In/Small Open Flames
Cigarette lighter	65	In/Small Open Flames
Candle	66	In/Small Open Flames
Undetermined heat source	UU	Unknown
<b>Other</b>	All other codes	Out

Table A3: Cause of Ignition Codes.

Description	Code	Scope
Intentional	1	Out
Unintentional	2	In
Failure of equipment of heat source	3	In
Act of nature	4	In
Cause under investigation	5	Unknown
Cause undetermined after investigation	U	Unknown

Table A4: Equipment Involved in Ignition Codes.

<b>Description</b>	<b>Code</b>	<b>Scope</b>
<b>Heating, Ventilating &amp; Systems Air Conditioning</b>	100 – 152	Out
<b>Electrical Distribution, Lighting &amp; Power Transfer</b>	200 – 263	Out
<b>Shop Tools &amp; Industrial Equipment</b>	300 – 377	Out
<b>Commercial &amp; Medical Equipment</b>	400 – 451	Out
<b>Garden Tools &amp; Agricultural Equipment</b>	500 – 538	Out
<b>Kitchen &amp; Cooking Equipment</b>	600 – 656	Out
<b>Electronic and Other Electrical Equipment</b>	700 – 757	Out
<b>Personal &amp; Household Equipment</b>	800 – 897*	Out
Other equipment involved in ignition	000	Out
Equipment involved in ignition undetermined	UUU	In
<b>Other</b>	All other codes	In

\*Excludes 872 “Charcoal lighter” and 873 “Cigarette lighter, pipe lighter”.

Note: Bold indicates range of codes.

Table A5: Factors Contributing to Ignition Codes.

<b>Description</b>	<b>Code</b>	<b>Scope</b>
Cutting, welding too close to combustible	13	Out
Flammable liquid or gas spilled	14	Out
Improper fueling technique	15	Out
Flammable liquid used to kindle fire	16	Out
Washing part, painting with flammable liquid	17	Out
Improper container or storage	18	Out
<b>Mechanical Failure, Malfunction</b>	20 – 27	Out
<b>Electrical Failure, Malfunction</b>	30 – 37	Out
Equipment overloaded	54	Out
Undetermined factor contributing to ignition	UU	In
<b>Other</b>	All other codes	In

Note: Bold indicates range of codes.

Table A6: Type of Material First Ignited Codes.

Description	Code	Scope
<b>Flammable Gas</b>	10 – 19	Out
<b>Flammable, Combustible Liquid</b>	20 – 29	Out
<b>Volatile Solid, Chemical</b>	30 – 39*	Out
Cork	52	Out
Hay, straw	54	Out
Coal, coke, briquettes, peat	56	Out
Food, starch	57	Out
Tobacco	58†	Out
<b>Wood Paper</b>	60 – 69	Out
Wig	75	Out
Human hair	76	Out
<b>Material Compounded with Oil</b>	80 – 89	Out
Multiple types of material first ignited	99	Out
Undetermined type of material	UU	In
<b>Other</b>	All other codes	In

\*Excludes code 33 “Polish, paraffin, wax” when *Heat Source* is 66 “Candle, taper”.

† Excludes code 58 “Tobacco” when *Heat Source* is 61 “Cigarette” or 62 “Pipe or cigar”.

Note: Bold indicates range of codes.

Table A7: Area of Origin Codes.

Description	Code	Scope
Escalator	4	Out
Dumbwaiter or elevator shaft	51	Out
Conduit, pipe, utility, or ventilation shaft	52	Out
Light shaft	53	Out
Chute; laundry or mail, excluding trash chutes	54	Out
Duct: hvac, cable, exhaust, heating, or AC	55	Out
Chimney	57	Out
Conveyor	58	Out
Wall surface	75	Out
Wall surface: exterior	76	Out
Awning	78	Out
<b>Transportation, Vehicle Area</b>	80 – 89	Out
Undetermined area of origin	UU	In
<b>Other</b>	All other codes	In

Note: Bold indicates range of codes.

## References

- [1] Federal Register, Vol. 68, No. 205, pps. 60629 – 60632, 2003.
- [2] Revised Residential Fire Loss Estimates, 1980 – 1998, L. Smith, J. Mah, U.S. Consumer Product Safety Commission, 2002.
- [3] 1999 Revised – 2002 Residential Fire Loss Estimates, R. Chowdhury, M. Green, D. Miller, L. Smith, U.S. Consumer Product Safety Commission, 2005.
- [4] Upholstered Furniture Addressable Fire Loss Estimates for 1995 to 1999, M. Levenson, U.S. Consumer Product Safety Commission, 2004.
- [5] National Fire Incident Reporting System Version 5 Design and Documentation, U.S. Fire Administration, 2002.
- [6] A SAS Macro for Balancing a Weighted Sample, M. Battaglia, D. Hoaglin, D. Izrael, SAS Users Group International 25<sup>th</sup> Annual Conference, Paper #258-25, 2000.