found that about 18 percent of bicyclists wear helmets.[5]

On June 16, 1994, the Children's Bicycle Helmet Safety Act of 1994 (the ''Act'' or ''the Bicycle Helmet Safety Act'') was enacted. 15 U.S.C. 6001–6006. Section 205 of this Act provides that bicycle helmets manufactured more than 9 months from that date shall conform to at least one of the following interim safety standards: (1) The American National Standards Institute (ANSI) standard designated as Z90.4–1984, (2) the Snell Memorial Foundation standard designated as B–90, (3) the ASTM (formerly the American Society for Testing and Materials) standard designated as F 1447, or (4) any other standard that the Commission determines is appropriate. 15 U.S.C. 6004 (a)–(b). On March 23, 1995, the Commission published its determination that five additional voluntary safety standards for bicycle helmets are appropriate as interim mandatory standards. 60 FR 15,231. These standards are ASTM F 1447–1994, Snell B–90S, N–94, and B–95, and the Canadian voluntary standard CAN/CSA–D113.2–M89. In that notice, the Commission also clarified that the ASTM standard F 1447 referred to in the Act is the 1993 version of that standard. The interim standards are codified at 16 CFR 1203.

Section 205(c) of the Act directed the Consumer Product Safety Commission to begin a proceeding under the Administrative Procedure Act, 5 U.S.C. 553, to:

1. Review the requirements of the interim standards described above and establish a final standard based on such requirements;

2. Include in the final standard a provision to protect against the risk of helmets coming off the heads of bicycle riders;

3. Include in the final standard provisions that address the risk of injury to children; and

4. Include additional provisions as appropriate. 15 U.S.C. 6004(c).

Section 205(c) the Act provides that the final standard shall take effect 1 year from the date it is issued. 15 U.S.C. 6004(c). Section 205(d) of the Act provides that failure to conform to an interim standard shall be considered a violation of a consumer product safety standard issued under the Consumer Product Safety Act (''CPSA''), 15 U.S.C. 2051–2084. Section 205(d) also provides that the final standard shall be considered to be a consumer product safety standard issued under the CPSA. However, section 205(c) of the Act provides that the provisions of the CPSA regarding rulemaking procedures, statutory findings, and judicial review (15 U.S.C. 2056, 2058, 2060, and 2079(d)) shall not apply to this proceeding or to the final standard. 15 U.S.C. 6004(c). When the final standard becomes effective, it will be codified at 16 CFR 1203 and will replace the interim standards. 15 U.S.C. 6004(d).

B. Originally Proposed Standard

The Commission reviewed the bicycle helmet standards identified in the Act (ANSI, ASTM, and Snell), as well as international bicycle helmet standards and draft revisions of the ANSI, ASTM, and Snell standards that were then under consideration. Based on this review, the Commission developed a proposed final safety standard for bicycle helmets. 59 FR 41,719 (August 15, 1994).

The major features of the originally proposed standard were as follows:

1. Impact attenuation. The originally proposed standard measures the ability of the helmet to protect the head in a collision by securing the helmet on a headform and dropping the helmet/headform assembly from various heights onto a fixed steel anvil. The original proposal specified a constant mass of 5 kg for the drop assembly (not including the helmet). However, the Commission requested comment on the alternative of specifying a different drop mass for each headform size.

Under the proposed standard, the helmet is tested with three types of anvils (flat, hemispherical, and ''curbstone,'' as shown in Figures 11, 12, and 13 of the revised proposed standard published in this notice). These anvils represent types of surfaces that may be encountered in actual riding conditions. Instrumentation within the headform records the headform's impact in multiples of the acceleration due to gravity (''g''). Impact tests are performed on different helmets, each of which has been subjected to one of four environmental conditions. These environments are: ambient (room temperature), high temperature (117–127 °F), low temperature (3–9 °F), and immersion in water for 4–24 hours.

Impacts are specified on a flat anvil from a height of 2 meters and on hemispherical and curbstone anvils from a height of 1.2 meters. Consistent with the requirements of the ANSI, Snell, and ASTM standards, the peak headform acceleration of any impact shall not exceed 300 g for an adult helmet, the value originally proposed for both adult and child helmets. In addition, maximum time limits of 6 milliseconds (''ms'') and 3 ms were originally proposed for the allowable duration of the impact at the 150-g and 200-g levels, respectively.

One difference from the ANSI, ASTM, and Snell standards that was originally proposed for the mandatory standard was the designation for the area of the helmet that must provide impact protection. The originally proposed area of impact protection for the CPSC standard was reached by combining the ANSI and ASTM procedures. The procedure for defining the area of the helmet subject to impact attenuation testing is described at § 1203.11.

2. Children's helmets. The originally proposed mandatory standard specified an increased area of head coverage for small children. A study by Biokinetics & Associates Ltd. found differences in anthropometric characteristics between young children's heads and older children's and adult heads.[6] This study led to an ASTM proposal to change the position of the basic plane (an anthropometric reference plane that includes the external ear openings and the bottom edges of the eye sockets) on the smallest test headform to be more representative of children ages 4 years and under. Originally, § 1203.11(b) proposed an extent-of-protection requirement for helmets intended for children 4 years and under based on the adjusted basic plane.

3. Retention system. The dynamic strength of the retention system test addresses the strength of the chin strap to ensure against breakage or excessive elongation of the strap that may contribute to a helmet coming off the head during an accident.

The test requires that the chin strap remain intact and not elongate more than 30 mm (1.2 inches) when subjected to a ''shock load'' of a 4-kg (8.8-lb) weight falling a distance of 0.6 m (2 ft) onto a steel stop anvil (see Figure 8). This test is performed on one helmet under ambient conditions and on three other helmets after each is subjected to one of the different hot, cold, and wet environments.

4. Peripheral vision. Section 1203.14 of the originally proposed mandatory standard requires that a helmet shall allow a field of vision of 105 degrees to both the left and right of straight ahead. This requirement is consistent with the ANSI, ASTM, and Snell standards.

5. Labels and instructions. Section 1203.6 of the proposed mandatory standard requires certain labels on the helmet, which are consistent with all

[5] Supra note 1.

[6] Heh. S., Log of ASTM F08.53 Headgear Subcommittee Meeting held May 21, 1992, Date of Entry—June 17, 1992. Office of the Secretary, U.S. Consumer Product Safety Commission, Washington, D.C. 20207.