



UNITED STATES  
 CONSUMER PRODUCT SAFETY COMMISSION  
 WASHINGTON, DC 20207

**Memorandum**

Date: JUL 11 2006

TO : The Commission  
 Todd A. Stevenson, Secretary

THROUGH: Page Faulk, General Counsel *PF*  
 Patricia Semple, Executive Director *PS*

FROM : Jacqueline Elder, Assistant Executive Director for Hazard Identification and Reduction *JE*  
 Elizabeth W. Leland, Economic Analysis, ATV Safety Review Project Manager *EWL*

SUBJECT : CPSC Staff Response Regarding Follow-Up Questions from Commissioner Moore after the June 15, 2006, ATV Safety Review Briefing

**Introduction**

On June 15, 2006, the U.S. Consumer Product Safety Commission (CPSC) staff briefed the Commission on the results of its review of all-terrain vehicle (ATV) safety standards and proposals. After the briefing, Commissioner Thomas Moore sent follow-up questions to the staff. The following is the staff's response to those questions.

**Responses to Questions**

**Death and injury data**

1. *What percentages of ATV deaths and ATV injuries are addressable each year by this proposal and what scenarios would we consider non-addressable (e.g., drunk driving? mechanical failures?)*

**Response**

The staff has not performed an analysis of the percentage of deaths and injuries addressable by the staff's draft proposed rule. Because most of the ATV deaths and injuries that the staff examined were associated with a combination of factors, including one or more instances of warned-against behavior, it would be difficult to ascertain whether an incident would have occurred in the absence of a single factor.

The staff's draft proposed rule was developed to address as many hazard scenarios as possible. The proposed rule includes mechanical requirements to prevent hazard scenarios resulting from mechanical failures of the ATV itself. It includes labeling requirements to address hazard scenarios associated with the operator's failure to follow safety recommendations when using the ATV. An offer-of-training requirement is included to address hazard scenarios where the operator is not familiar with the rider-active aspect of the ATV or with handling the

NOTE: This document has not been reviewed or accepted by the Commission.  
 Initial *JEH* Date 7/11/06

*7/11/06*  
 SEARCHED AT THE CPSC  
 FILED IN THE RECORDS OF CPSC

ATV in variable terrain. A risk disclosure requirement is included to address the hazards associated with allowing children to ride adult ATVs.

*2. In 1985 staff found that the following factors contributed to ATV accidents: carrying passengers; excessive speed; alcohol consumption; riding ATVs on paved roads. Have the factors associated with accidents changed much in the last twenty years?*

**Response**

CPSC Engineering (ES), Human Factors (HF) and Hazard Analysis (EPHA) staff examined incidents from the 2001 Injury Study.<sup>1</sup> EPHA used the results to compare the hazard patterns from 2001 to those from the 1997 Injury Study<sup>2</sup> and found that they were very similar.

Direct comparison of the 1997 and 2001 exposure survey data with 1985 data is difficult because of changes in hazard pattern classification over the years. However, with respect to two factors, namely, hitting an obstacle and driver distraction, direct comparison *is* possible. In 1985, 34 percent of the four-wheel incidents involved hitting an obstacle, versus 40 percent in 1997 and 42 percent in 2001. In 1985, 3.9 percent of the four-wheeled incidents resulted from driver distraction, versus 6 percent in 1997 and 7 percent in 2001. (In 1985, the results were based on only 32 incidents; four-wheeled ATVs were just being introduced into the market.)

*3. Has staff had an opportunity to review recent injury data to identify hazard patterns and determine if they can be correlated to ATV vehicle characteristics? If not, is staff planning on doing this in the future?*

**Response**

CPSC ES and EPHA staff has reviewed 450 cases from the CPSC's 2001 ATV injury study with the intention of identifying correlations between hazard patterns and ATV vehicle characteristics. In a preliminary analysis of the data, staff did not find any obvious correlations, other than higher risks associated with ATVs with larger engine sizes.

*4. On page 5 of the 2004 Annual Report of ATV Deaths and Injuries, Kentucky seems to have had a huge increase in reported deaths. Do we get information on ATV deaths in Kentucky more promptly than from other states, or is there some other explanation for the apparent large increase?*

**Response**

Table 2 of the 2004 annual report is ordered by the number of reported deaths in the complete period. To determine if Kentucky's death reporting in the incomplete period is an anomaly, we need to consider its reporting relative to the reporting of the states listed above it.

---

<sup>1</sup> Mark S. Levenson, Ph.D., *All-Terrain Vehicle 2001 Injury and Exposure Studies*, U.S. Consumer Product Safety Commission, January 2003.

<sup>2</sup> *All-Terrain Vehicle Exposure, Injury, Death, and Risk Studies*, U.S. Consumer Product Safety Commission, April 1998.

(We would expect Kentucky to report more deaths than the states listed below it.) Because of this, we will focus only on Kentucky's reporting relative to the reporting of states above it on the list.

It is not possible to know yet whether the difference in numbers of deaths in Kentucky in the incomplete period is due to the way in which data are reported and gathered or whether it is due to an actual increase in deaths. According to the CPSC Division of Data Systems (EPDS), Kentucky *does* report deaths more promptly than most of the states listed above it in Table 2 of the annual report (California, Pennsylvania, Texas, and New York). However, there are other sources for death data besides death certificates. While death certificates are the primary source, other sources include, primarily, news clips, a number of medical examiner reports, and a few reports from varying sources. Because of this, factors influencing collection of all the sources can influence the overall rate of ATV data collection by state.

In addition to Kentucky reporting deaths promptly, death certificate data indicate that there has also been a slightly higher increase in deaths per year in Kentucky than in at least one of the states above it, namely, Tennessee (Schroeder, T., personal communication, June 22, 2006). With respect to death certificates, CPSC purchases the certificates from the states by ICD-10 code (a full explanation of this is contained in Appendix B, "Methodology" of the 2004 annual report). The ICD-10 code that includes ATVs is V86; this code also includes snowmobiles, go-carts, golf carts, trail bikes, and dune buggies; these other products are excluded when data are analyzed for the annual report. The V86 code for Kentucky shows the increase mentioned above.

In general, many factors influence the inclusion of death data in the annual report, including but not limited to how fast data is processed in the CPSC Epidemiology Division of Data Systems, what the cutoff date for inclusion in the annual report is, whether the majority of a state's death reports come from death certificates or news clips, and whether ATV issues have experienced high media exposure in the state in the incomplete period. Because of these factors, using the incomplete data period (in this case, 2002-2004) does not lend itself to making accurate comparisons among the states. Thus, the apparent large increase in Kentucky's reported deaths may be due to an actual increase in deaths or to any of the reporting factors noted above.

*5. What is the breakdown, by State, of deaths of children driving ATVs for the last three years for which complete data is available?*

**Response**

While available data do not include a breakdown of drivers only, we can provide a breakdown of all deaths of children by state for the last three years of complete data (1999-2001). This breakdown is presented in Table 1 on the next page.

**Youth ATVs**

*1. In the Report of the CPSC All-Terrain Vehicle (ATV) Task Force: Regulatory Options for All-Terrain Vehicles of 1986, the Human Factors staff found that:*

*“Children below the age of six years are physically too small and insufficiently coordinated to operate even the smallest ATVs safely. Between the ages of 6 and 11 years, while physically capable of handling the small (50 & 60cc engine displacement) ATV models, children still lack the cognitive and perceptual abilities to do so safely. Their motor abilities at this age range still tend to be erratic and slower than desirable.” The Task Force then went on to state “... the findings are clear that most children under 12 should not be on child-size ATVs due to lack of maturity. Therefore, a ban of ATVs intended for use by children under 12 years of age should be considered if the industry will not withdraw them from the market voluntarily.”*

*On page 360 of the current briefing package, staff states that the “majority of child developmental information presented to the Commission in 1986 remains reasonably consistent with current research on the topic.” What has changed in the understanding of child development since that time to now make it acceptable for children under 12 to drive child-size ATVs?*

*and*

*2. Also on page 360, the briefing package states: “The Consent Decrees did not recognize ATVs under 70cc, but CPSC has generally accepted those under 70cc as intended for children ages 6 to 11 years of age.” Accepting that the ATVs with smaller-sized engines are intended for children under twelve is not the same as approving of their use by these children, which contradicted the staff’s earlier recommendation. Did the Commission make a conscious decision to disavow the staff recommendation or did Commission inaction allow these under 70cc ATVs to gain a foothold in the market?*

### **Response**

ESHF staff acknowledges and generally agrees with the research contained in the 1986 Task Force report. However, in the original report *Task Order 2: Developmental Characteristics and the Use of All Terrain Vehicles* (Benel and Mavor, 9/11/1986), there are contradictions within the recommendation sections. For example, while the contractor concludes that children under the age of 12 should not operate ATVs, Table 5 in the recommendation section suggests the use of 50cc ATVs for ages 6 through 10, 70cc ATVs for ages 9 through 12, and 85 to 125cc ATVs for ages 12-15. Thus, the Task Order 2 report is unclear as to whether children under 12 should be allowed to ride ATVs.

While CPSC staff does not know the source of the above contradiction, sometime after the 1986 report was written youth models were produced for the use of children younger than 12 years old (staff can find no information to determine if a “Commission decision” or “Commission inaction” played a role). The 1988 consent decrees included provisions that required distributors, among other things, to “represent affirmatively that ATVs with engine sizes between 70 and 90cc should be used by those age 12 and older and that ATVs with engine sizes larger than 90cc should be used only by those age 16 years and older.” A voluntary standard that includes definitions for youth ATVs intended for children under 12 was subsequently developed with CPSC staff participation. These activities suggest that the staff’s draft proposal, allowing the use of youth ATVs, is not inconsistent with earlier actions.

Additionally, the staff recognized that parents are going to let their children ride ATVs. The 2001 Injury Study found that 7.2 million children under 16 are riding ATVs of some size. In its draft proposed rule, staff focused on ensuring that these children ride as safely as possible: that they not ride adult ATVs and that children's models be designed with added safety features. Using child development research, the basics of which have remained relatively consistent, as well as updated information available in the 2002 age determination guidelines, the CPSC staff included in the draft proposed rule for youth ATVs requirements for speed limiters and automatic transmissions. ESHF staff has recommended that ATVs should be designed to anthropometrically fit children in the age group for which the ATV is intended. These limits and recommendations would allow parents who decide their child is ready to learn ATV skills to select an ATV that is appropriate for the child's size and capability.

*3. What steps would staff like to take in-house, to further the development of transitional youth ATVs that accomplish the twin goals of removing most children from adult-size ATVs and of reducing the deaths and injuries to children on youth models?*

**Response**

To further the development of transitional youth ATVs (or ATVs that are appropriate for the developmental and physical capabilities of children of various ages), the CPSC staff would like to encourage ATV designers to develop size options for ATVs for children within the various age groups. Children do not come in one size and youth ATVs should not come in one size per age category; just as you do not take a child to the store to purchase "age 8" clothing, there should be size options within the age groups.

The staff would like to continue working through the voluntary standards process to assist ATV designers with the steps needed to accomplish these goals. To begin this process, ESHF staff has requested a software package that will allow staff to create a model of a child of a given age and anthropometric dimension. One use for this software is to create a model that can then be placed on a computer-aided design (CAD) model of an ATV to evaluate overall fit, control reach, field of vision, and other important details. This software will allow for evaluation of the "rider envelope" fit factors that were described in the 2005 ESHF petition memo. A request for this software (which also can be used for products other than ATVs) is included in the 2006 mid-year budget request; the cost of the software is approximately \$2,775.

*4. Many cars have factory-installed computer chips that limit their speed below the car's capabilities. Could such technology be used in youth ATVs?*

**Response**

CPSC staff is not familiar enough with the technology used in the automotive industry to comment on the ability to apply such technology on ATVs.

However, CPSC staff is aware of one technological device that limits the ATV speed without reducing the needed engine speed (RPM) for climbing steep hills. While most current

speed limiting devices use a set screw to limit the travel of the throttle, which is controlled by the thumb, this device limits the ATV ground speed and engine RPM by using a microprocessor to manipulate the ignition spark timing at the ignition control module. The company believes that their patented speed limiting device could be used on adult and youth ATVs at a cost to ATV manufacturers of approximately \$50 per ATV. [See Petition Comment CP 02-4/HOP 02-1 #65 ]

*5. Would the staff proposal with regard to the speed limiting device change the way youth ATV speed limiting devices are currently made?*

**Response**

The staff has not tested ATVs to determine market conformance to the voluntary standard requirement for a speed limiter. However, in past tests conducted on a limited number of youth ATVs, CSPC staff found that some ATVs employed speed limiting devices that do not work. When the throttle travel was limited to meet the speed restriction requirement, the engine did not produce enough power to move the vehicle. If current ATVs with throttle control speed limiters exhibit similar problems, the manufacturers would have to make changes in order to meet a mandatory speed limiting requirement. The manufacturers could change the speed limiting technology from a limit on the throttle travel to a microprocessor system such as that described above. Manufacturers could also retain the throttle limit technology and change the gearing of the transmission or horsepower of the engine.

*6. Has staff determined whether excess speed played a role in any of the deaths or injuries to children driving the current youth ATV models?*

**Response**

With respect to deaths, the limited coding of information from investigations is not sufficient to determine the role of excessive speed. With respect to injuries, the 2001 Injury Study cases examined by EPHA and ES staff found that roughly 11 percent of all injuries occurred while racing or performing stunts; however, further review of the available data would be required to know if we can determine the proportion of those injuries that occurred on youth ATVs. (Levenson, M.S., personal communication, January 12, 2006).

*7. Is it possible to have a light on a youth ATV that, while on the front of the vehicle, shines downward, illuminating only a foot or two in front of the ATV that would allow the ATV to move at a slow speed but be capable of avoiding obstacles in the event a child found himself in the dark inadvertently?*

**Response**

It is possible to have a downward ground-facing light on the front of an ATV. However, ESHF staff believes that such a light would not provide sufficient lighting to allow enough time for perception (e.g., of an obstacle), reaction, and response.

When driving any vehicle, drivers should be scanning their path and allowing for at least two to three seconds to perceive any stimulus or obstacle ahead of the vehicle. Regardless of the speed of the ATV, ground-facing lights would not illuminate an obstacle which is ahead of the vehicle and requires time for the driver to perceive it.

Also, even when illuminating the ground, there still will be obstacles that may not be seen by the driver, such as branches or low overhangs. The insufficiency of ground-facing lighting is made even more acute because of the off-road nature of ATV riding and the remote locations that are accessible to ATVs.

*8. Assuming the requisite findings could be made, do we have the legal authority to require ATV manufacturers to provide free helmets with their youth ATVs?*

**Response:**

The Office of General Counsel will provide a response to this question in a memorandum to be sent to the Commission under separate cover.

*9. Has staff given any thought to what types of tests might be needed to determine the appropriate weight of youth ATVs as they relate to the size and/or weight of child drivers in particular age categories?*

**Response:**

Staff believes that it would be difficult to arrive at an exact specification for weight of rider vis-à-vis weight of ATV or to determine acceptable weight ranges. The testing and modeling needed to investigate the interaction between the weight of an ATV and the weight of a rider would be difficult and would require significant resources for things such as tilt table testing, measuring dynamic variables, and/or modeling three-dimensional rider ATV interaction.

The task is made especially complex because there are multiple factors that interact and can be at odds with one another. For example, while an ATV must be sufficiently heavy to reduce the effect a large youth would have on raising the entire system's center of gravity, which can negatively affect stability, a heavier ATV is more difficult for young children to control and might pose a greater hazard to the child if the ATV were to roll over onto the child. Also, for example, a heavy ATV with a speed limiter may mitigate some hazards that would be present if a child were to drive the same-weight ATV with no speed limiter.

In addition, the weight of an object does not necessarily indicate the severity of injury resulting from blunt trauma from the object. The rate at which the object load is transferred to the body, the area and location where the applied load of the ATV is applied to the body, the orientation of the body upon impact, the forces generated between the two surfaces during the impact, and the length of time after impact that the applied static load of the ATV is sustained on an entrapped child's body, all enter into the determination of an appropriate-weight youth ATV.

## **Vehicle Performance**

*1. Has staff done a review of the original ATV Task Force efforts?*

### **Response**

The staff has reviewed the original ATV Task Force efforts. This review was done as a part of the evaluation of the CFA petition<sup>3</sup> and as a part of the past year's ATV Safety Review project.

*2. That earlier Task Force found that 59% of four-wheel ATV accidents initiated with the ATV tipping or overturning. Do we have more recent statistics with regard to this incident scenario?*

### **Response**

In the briefing package for the 2002 CFA petition, EPHA staff found that, of the child fatalities studied from 1999 and 2000, overturning was the precipitating event in 40 percent of the cases. (Overturning here is defined as overturning in the sideways, forward or backward directions.) However, overturning also occurred in other cases where it was not necessarily determined to be the precipitating event. Of all 184 child fatalities in the analysis, 122 (66 percent) involved an ATV overturning. (Ingle, R.L., "Analysis of ATV-Related Fatality Data for CPSC Petition CP 02-4/HP 02-1," Tab F, memorandum to Elizabeth Leland, dated December 2, 2003, in the briefing package for Petition No. CP-02-4/HP-02-1.)

For the current briefing package, EPHA and ES staff examined cases from the 2001 injury study and found that 45 percent of the injuries (to all ages) occurred in incidents in which the ATV overturned. (Levenson, M.S., personal communication, January 12, 2006).

*3. In the 1986 Task Force Report, staff stated "Larger engine sizes are positively associated with accidents. In general, the performance capabilities of an ATV concerning, for example, acceleration, speed and hill climbing, become greater as engine size increases. Thus a larger engine may present a broader operating environment. Analysis by EP staff indicates that the highest risk of injury or death occurs with ... engine displacements of 200cc or larger, for four-wheeled ATVs." Does staff still agree with this assessment?*

### **Response**

For the sake of clarity, it must be noted that the meaning of "large" ATV in 1986 is not the same as it is today. Until recently, a 400cc engine was considered quite large. In recent years, however, engine sizes have increased up to 700cc on both sport and utility type ATVs. An ATV with a 200cc engine, once considered large, is now considered relatively small and a 400cc engine is now considered mid-range.

The 2001 exposure and injury studies explored the risk of injury by engine size and gave the following distribution:

---

<sup>3</sup> U.S. Consumer Product Safety Commission staff, Briefing Package, Petition No. CP-02-4/HP-02-1, *Request to Ban All-Terrain Vehicles Sold for Use by Children under 16 Years Old*, February 2005.

**Table 2: U.S. ATV Risk Estimates by Engine Size, 2001**

	Engine Size (in cc)				
	≤ 90	91 to 199	200 to 299	300 to 399	≥ 400
Risk of injury per thousand ATVs in use	12.2	13.8	23.5	18.3	22.0

As can be seen in the table, the highest risk is for engine sizes 200 to 299, but those categories with engines of more than 200 cc all have risks of injury greater than all the categories with engines of less than 200 cc. (Levenson, M.S., *All-Terrain Vehicle 2001 Injury and Exposure Studies*, U.S. Consumer Product Safety Commission, January 2003). Moreover, all CPSC staff multivariate risk analyses, including those based on recent ATV injury and exposure surveys, have found that the risk of injury increases with the engine size of ATVs.

*4. In 1985, our engineering staff found two characteristics that were resulting in an increase in injuries: that ATVs were prone to overturn on an uphill or downhill grade or when hitting a rut and difficulty in control on attempts to turn quickly. Even though we have eliminated most of the three-wheel ATVs, these problems still seem to be prevalent in ATV accidents, particularly those involving children. Has staff identified hazard patterns addressable by engineering design? What plans does staff have and what resources and testing apparatus will be required to determine what vehicle characteristics seem to contribute the most to the current increasing accident trend?*

**Response**

ATV control and stability characteristics appear to be the only engineering design improvements that can affect hazard patterns associated with ATVs. While 4-wheeled ATVs are more stable than 3-wheeled ATVs, the control and stability issues inherent in a rider-active system with a solid rear axle are still present and continue to be major factors associated with ATV-related deaths and injuries involving 4-wheeled vehicles.

CPSC staff believes that the exploration of a lateral stability requirement is an exceedingly complex task (due to the ATV rider-active feature and variable terrain, neither of which is experienced with an on-road 4-wheeled vehicle where rider action is not a factor and the vehicle operates on an engineered surface). The effort would require extensive test and evaluation with cooperation among CPSC, industry, and other private sector entities. While initial steps to become familiar with the current generation of ATVs can be accomplished with relative ease and modest resource commitments, further efforts would need to include static and dynamic vehicle tests and a comparative analysis of vehicle performance. These efforts could result in the development of a meaningful test method and pass/fail criteria for lateral stability.

*5. What plans does staff have to test ATVs that are currently on the market to see if they comply with the voluntary standard?*

**Response**

Initially, staff plans to undertake a limited test program, using funds provided at mid-year.

6. *Do all ATVs have ignition keys? If not, has any thought been given to making this a requirement?*

**Response**

No, some ATVs may have combination security systems that deter unauthorized access to the ATV. The current voluntary standard allows either a “key-operated or equivalent system” to deter unauthorized persons from using the vehicle. The staff did not consider limiting the means of deterring unauthorized access to the use of a key, but, as stated in the draft proposed rule, would require that “All ATVs shall have a means to deter unauthorized use of the ATV.”

7. *The CFA comments make interesting points about recent recalls of ATVs, particularly that they could be used to focus on certain mechanical areas that might deserve further attention from our engineers. Has staff given this proposal any consideration?*

**Response**

A CPSC staff review of the recalls noted in the comment from the Consumer Federation of America (CFA) indicates that these particular recalls were virtually all manufacturing or quality control issues at the component level. They do not suggest the need for changes in the design of these components.

8. *Several commenters noted that the use of the term “all-terrain” for these vehicles is a misnomer; that they cannot be operated on all types of terrain and that they are actually dangerous to operate on certain types of terrain. Could the use of the name ‘all-terrain’ give some drivers the impression that they can go anywhere on these vehicles, thus adding to their foreseeable misuse?*

**Response**

The name “all-terrain vehicle” may be a factor contributing to possible incorrect assumptions about where ATVs can be driven. “All-terrain” implies exactly that: the vehicle is appropriate for all types of terrain. This is not true, as the ATV is not designed for riding on smooth pavement, on extremely steep hills, and across extremely bumpy terrain. Additionally, the ATV cannot cross every obstacle the driver encounters, especially at high speeds. Yet, some consumers may assume the vehicle can conquer any terrain it encounters. This perception of a true “go anywhere” vehicle may lead both adults and children to drive their ATVs on terrain that is not appropriate.

9. *None of the technical analysis provided by Dynamic Research, Inc. is addressed in the package. Has staff had an opportunity to study this paper and come to any conclusion about its usefulness or the biases it may contain?*

**Response**

CPSC staff reviewed the technical analysis provided by Dynamic Research, Inc. (DRI) in response to questions 3, 4, 5, 6, and 13 of the October 2005 Advance Notice of Proposed Rulemaking (ANPR). The analysis was a comprehensive review of past studies conducted on ATVs and included useful information on current activities, such as tilt table measurements of various ATVs recently made for the U.S. Bureau of Land Management. CPSC staff considers the DRI paper a useful reference on past and current activities related to vehicle dynamics and the tests/evaluation methods associated with the analysis of vehicle dynamics [particularly those tests conducted by the National Highway Traffic Safety Administration (NHTSA)].

CPSC staff has not had the resources to become familiar with vehicle testing and to discuss potential test methods with NHTSA and other experts in vehicle analysis. Therefore, CPSC staff is unable to comment on opinions regarding feasibility of stability performance requirements discussed by DRI in their technical analysis.

*10. Have the operational characteristics of various ATVs been analyzed to compare the steering, pitch stability, lateral stability, braking and other handling features among the ATVs currently on the market? Is such a comparative analysis planned?*

**Response**

CPSC staff has not had the resources to perform the necessary tests and evaluations to develop a comparative analysis of the current market of ATVs for steering, pitch stability, lateral stability, braking, and other handling features. No comparative analysis is currently planned.

*11. The current ATV voluntary standard has no lateral stability test. Is this something that staff feels should be considered? How often are lateral tipovers involved in ATV accidents?*

**Response**

CPSC staff believes that the exploration of a lateral stability requirement should be considered. As noted above, this would be an exceedingly complex task (due to the ATV rider-active feature and variable terrain, neither of which is experienced with an on-road four-wheeled vehicle where rider action is not a factor and the vehicle operates on an engineered surface). The effort would require extensive testing and evaluation with the cooperation of the CPSC, industry, and other private sector entities. While initial steps to become familiar with the current generation of ATVs can be accomplished with relative ease and modest resource commitments, further efforts would need to include static and dynamic vehicle tests and a comparative analysis of vehicle performance. These efforts could result in the development of a meaningful test method and pass/fail criteria for lateral stability.

Lateral tipovers are frequently involved in ATV incidents. Based on the 2001 ATV injury studies, and after excluding injuries associated with racing or performing stunts, roughly 45% of the incidents involved tipover, with one-half of these being in the lateral direction.

## **Training**

*1. What does it currently cost an ATV manufacturer to join SVIA and to participate in their training program? Are there any membership restrictions? Would new entrants be able to join and participate on the same basis as the original manufacturers?*

## **Response**

The fee to join the SVIA is \$10,000, payable at the time of application. Annual dues for each company are based upon the company's retail sales, as a percentage of SVIA member sales. Companies are billed separately for the number of people who are trained through the SVIA.

Membership is open to any company that has been in business at least two years, has good business ethics, and has an interest in the common welfare of the specialty vehicle industry. A potential member must be a reliable firm that is regularly engaged in the business of manufacturing, importing, or selling specialty vehicles. The SVIA has invited all identified new foreign entrants to join the association. There are no classes of membership; all members have access to the same level of services of the association, including training.

Non-members can participate in the SVIA training program, but must themselves be responsible for reimbursing trainees, i.e., no reimbursement is done through SVIA. While members have access to all safety publications and materials at cost, non-members must pay a fee for those materials.

*2. A number of commenters noted the difficulty of getting SVIA training, because of the distance to a training facility, not getting responses from the training facility to training inquiries, etc. How would we expect the new entrants, who sell through the internet or through other less traditional outlets to provide training for their buyers if they did not or could not participate in the SVIA training?*

*and*

*3. The cost/benefit analysis in the briefing package assumes that the newer foreign (usually smaller) entrants are either going to be able to participate in the SVIA training program at the same cost as the original foreign entrants, or that they can form another association and, over time, build their own national network of training facilities at the same per trainee cost. On what are these assumptions based?*

## **Response**

The cost-benefit analysis did not make any explicit assumptions regarding whether new entrants would participate in the SVIA training program, form their own association, or provide the training through some other method. The cost to new entrants of providing the training would depend upon how they opt to provide the training. It can be expected that the new entrants will attempt to provide the training in the least costly manner that is available to them. Depending on the circumstances of the individual firms, this could mean joining the SVIA training network, providing training individually at their dealerships, forming a training network independent of the SVIA, or some other method.

The estimate of the cost of the training requirement used in the cost-benefit analysis assumed that the cost of providing ATV safety training consists mostly of the compensation paid to the instructors and the rental of the land used for the training (which need not be dedicated to ATV training and can be a large yard or a portion of a farm). Other costs, such as overhead and training materials, were assumed to account for a relatively small proportion of the costs. Because the training offered by SVIA meets the requirements of the draft proposed rule, the cost of the SVIA training was used as the basis for our training cost estimates.

*4. What do we know about the ability of children, particularly those under twelve, to retain knowledge and adapt their recreational behavior accordingly, on the basis of a half-day training course such as the one the SVIA provides?*

### **Response**

Children learn best when they use all of their senses during the learning process and when the learning environment is age-appropriate. ESHF staff is not aware if SVIA makes any modifications, other than maximum course size, when children under 12 are present. However, other programs available are tailored for children; for example, the 4-H program and some state specific programs. The retention of this information will likely depend on not only the quality of presentation, but also the opportunities to continue to practice and be reminded of the information they learned. Research shows that children retain skills best when they practice under varying conditions and when they are given specific feedback without overwhelming them with too much feedback (Haywood, 1993 pp. 286-287).

Additionally, children learn sports skills best when they acquire declarative (factual) knowledge first, followed by procedural knowledge (how to do something and the rules to do it) (Haywood, 1993 pp. 295). The youngest children will be enthusiastic about learning, but may have some difficulty learning and retaining all the information presented in a training course. Beginning around age 8 or 9, children are developing awareness of safety rules and can follow these rules fairly consistently (Therrell et al., 2002). They may, however, be tempted to disobey the rules when they are outside of adult supervision. Children will display obedience at different rates and with different levels of consistency, depending on the circumstances. Impulsivity and susceptibility to peer pressure is high during adolescence. Most people, adults and children alike, will occasionally break known rules, both impulsively and purposefully, even though they will later admit that they were taking a risk.

With respect to ATV training and children, ESHF staff is aware of several studies that explore the issue. According to the Evaluation Summary Report 1990-2003 of the 4-H ATV safety program, pre- and post-program survey data indicate that youths who participate in the program may increase their safe riding behaviors. Self-reported safe behaviors among youth who attended the 4-H ATV training include increases in wearing protective equipment (including helmets) and decreases in passenger carrying and operation on paved roads. For example, the report concludes that the 4-H program increased the number of participants who “always” wear a helmet from 18.8% to 32.1% (4-H, 2004). There are, however, several possible confounding factors, the largest being self-report bias by youth who, because of the training, may be biased to answer the way they had been taught. The time lapse between the training and post-program

survey is not clear from the report, therefore it is unclear if these behaviors were truly changed for the long-term. The best indication of the training's effectiveness would be a decrease in incidents and injuries among youth trained by 4-H versus a control group that was not trained. Field observations of youth riding to enumerate actual helmet use and other safe behaviors versus self-report use would also add to the credibility of the program's effectiveness.

Another study, which focused on Indiana youth (Tormoehlen and Sheldon, 1996), found that approximately 1% of youth (age 10 to 19) learned to ride with certified ATV instructors and that there was a correlation between adult instruction and helmet use, significantly increasing regular helmet usage from 36.9% of those taught by a peer to 44.2% of those taught by an adult. This study was also a self-report survey with possible self-report bias. Although these studies indicate learning of material, they do not address the effectiveness of ATV training in reducing injuries. Also, since the effectiveness of other motor vehicle training programs is questionable (e.g. Billheimer, 1998, Christie, 2001), generalizing about the effectiveness of ATV training could be misleading in the absence of formal studies.

*4-H (2004). 4-H Community ATV Safety Program, Changing Behaviors Saving Lives, Evaluation Summary Report 1990-2003. Chevy Chase, MD: National 4-H Council*

*Billheimer, J.W. (August 1996). California Motorcyclist Safety Program, Program Effectiveness: Accident Evaluation; California Highway Patrol; Systan, Inc., Los Altos, CA.*

*Christie, R. (2001) The effectiveness of driver training as a road safety measure: a review of the literature. Victoria, Australia: Royal Automobile Club of Victoria.*

*Haywood, K.M. (1993). Life Span Motor Development. Champaign, IL: Human Kinetics publishers*

*Tormoehlen, RL and Sheldon, EJ (1996). ATV Use, Safety Practices, and Injuries Among Indiana Youth. Journal of Safety Research; 27(3): 147-155.*

*Therrell, J. A., Brown, P. S., Sutterby, J. A., & Thornton, C. D. (2002). Age determination guidelines: Relating children's ages to toy characteristics and play behavior (T. P. Smith, Ed.). Washington, DC: U.S. Consumer Product Safety Commission.*

*5. In the briefing package, staff notes that ATVs require repeated practice to drive proficiently and that formal training may act as a surrogate for experience. Given that the SVIA course only lasts about five hours and that a participant is actually driving the ATV for only a part of that time, how likely is it that that course provides anything more than a couple of hours of experience?*

### **Response**

While it is true that a day-long training course will not provide more than a couple hours of actual hands-on experience, the nature of the training course structures that experience in a manner that exposes new riders to a wide variety of situations that may be encountered in riding situations. Trainees are led through these situations in a controlled manner and instructed on the proper way to negotiate the situation. In this way, the few hours of experience through a training course is superior to self-learning through experience.

*6. Do we have data to show that children who have taken ATV training courses are less likely to be involved in accidents?*

**Response**

We do not have enough data on children who have taken formal training to relate children's training to their involvement in injury incidents.

*7. Why does Wisconsin not accept the SVIA training as valid for meeting its youth ATV training requirements?*

**Response**

CPSC staff does not know why Wisconsin does not accept the SVIA training as valid for meeting its youth requirements. According to the SVIA, it is because Wisconsin requires that ATV training take place over two days, that a state Department of Natural Resources officer be present, and that the ATV rider receive a certificate from the state. Some instructors in Wisconsin use the SVIA RiderCourse™ training as a part of the state training course.

*8. The Progressive Farmer makes some impressive claims about the ability of the ATV program at their Farm Safety Day Camps to instill certain safety techniques in children. Can we validate these claims and would doing so, and comparing their program to SVIA's, be fruitful?*

**Response**

ESHF has reviewed the information submitted as public comment by the Progressive Agriculture Foundation. The materials provided include a cover letter, an opinion statement, lesson plans, and an instruction video for staff. The lesson plans and accompanying video imply that the ATV activities are geared toward encouraging safe behavior (e.g., the importance of wearing a helmet and safety gear), but not actually teaching riding skills.

Although the opinion statement reports a 62% increase in helmet usage after participating in training, there is no detail as to how many students were surveyed, the age of students in the study, or other information relevant for a scientific evaluation of the validity. ESHF staff is not aware of any peer-reviewed, published report containing their data. It is therefore impossible to verify their claims. Staff does, however, believe that the lesson plans provided appear to be tailored for and appealing to children and does not doubt that children will learn something from these activities.

Currently, we cannot compare this program to the SVIA program for several reasons. First, the Progressive Farmer program is a set of learning activities that teach safe behaviors, but not riding skills, while the SVIA program is primarily focused on teaching riding skills. Secondly, ESHF staff is not aware of any data that quantifies learning of safe behaviors at the SVIA training. If the Commission wished to evaluate this training program and compare it to SVIA, ESHF staff would suggest a broader approach evaluating many training programs. There is, however, a wide variety of state, industry, non-profit, and other programs, and the resources needed to systematically evaluate all these training programs would be extensive.

9. *A number of states, such as Idaho, Michigan, Minnesota, Wisconsin, etc., seem to have fairly specific training requirements for youth ATV riders. Have we seen any decrease in youth injuries or fatalities in those states since this training was initiated?*

**Response**

Trends in injuries by state cannot be analyzed with CPSC NEISS data. CPSC staff has not analyzed trends in deaths because of differences in state training requirements.

10. *Could we require that ATVs only be sold to first time ATV purchasers who have completed an ATV safety course and present proof of successful completion?*

**Response**

The Office of General Counsel will provide a response to this question in a memorandum to be sent to the Commission under separate cover.

11. *Would the free training proposal spell the doom of the incentive payments that certain ATV manufacturers have been offering for training? Do we know how well those incentive payments have worked? Do more people get training on the brands that offer incentives than on other brands?*

**Response**

The Office of Compliance will provide a response to this question in a memorandum to be sent to the Commission under separate cover.

12. *How can we reach the substantial resale market of used ATVs in terms of training first-time purchasers?*

**Response**

The staff believes that the resale market can be reached primarily through information and education.

13. *The lag time from the purchase of an ATV to available formal training for the average purchaser can be as long as seven and a half weeks or more (see p.427 of briefing package). What are the Commission's options with respect to requiring that formal training is made available in a more expedient time frame?*

**Response**

The Office of General Counsel will provide a response to this question in a memorandum to be sent to the Commission under separate cover.

### **Age guidelines**

*1. Under the current proposal, would Compliance staff still monitor dealers to see what they SAY to prospective customers or would we rely solely on the fact that a dealer has a signed form as evidence of their conformance with the age guidelines?*

### **Response**

The Office of Compliance will provide a response to this question in a memorandum to be sent to the Commission under separate cover.

*2. Do we have any authority to deal with ATV rental companies, to ensure that they rent only the appropriate size ATV to their customers?*

### **Response**

The Office of General Counsel will provide a response to this question in a memorandum to be sent to the Commission under separate cover.

### **Helmets**

*Given the different type of accident scenario that motorcycle helmets are designed to protect against should the Commission give consideration to promulgating an ATV helmet standard?*

### **Response**

The Commission could issue a standard for ATV helmets if it found that such a standard were necessary to reduce an unreasonable risk of injury and it could make the other findings necessary for a consumer product safety rule.

CPSC, as well as the ATV Safety Institute, recommends that ATV riders use motorcycle and other motorized sports helmets that are certified by the U.S. Department of Transportation (DOT) and/or The Snell Memorial Foundation (Snell). The "Federal Motor Vehicle Safety Standard 218, Motorcycle Helmets (FMVSS 218)" is commonly known as the DOT standard. The Snell M205 "Standard for Protective Headgear for use with Motorcycles and Other Motorized Vehicles" is the most current Snell helmet standard for motorcycles and other motorized sports. The staff has no evidence or reason to believe that the current helmets that are recommended for ATVs pose a hazard to consumers.

### **Tandem or 2-up ATVs**

*In the joint comments of Bombardier, Arctic Cat and Polaris (comment 123), they state that "In cooperation with the CPSC, the above companies have undertaken significant efforts to promote the safe and responsible use of 2 Up-ATVs." What involvement has staff had with these manufacturers with regard to the 2-up ATVs?*

### **Response**

CPSC staff has provided comments to Bombardier, Arctic Cat, and Polaris when each company approached staff regarding development of their respective tandem vehicles. CPSC

staff also commented on several versions of a draft voluntary standard for tandem ATVs that was developed by the International 2-Up ATV Manufacturers Association (I2AMA), of which the aforementioned companies were members.