PART 1410 – REQUIREMENTS FOR ADULT ALL TERRAIN VEHICLES

Subpart A – General Requirements

Sec.

Subpart B – Requirements for Equipment, Configuration and Performance for Single Rider ATVs.

Subpart C - Requirements for Labeling, Point of Sale Information and Instruction.

Subpart D - Requirements for Tandem ATVs.

AUTHORITY: 15 U.S.C. 2056 - 2058, 2063, 2065 and 2076(e).

§ 1410.1 Purpose, scope, effective date.

(a) *Purpose.* The purpose of the standard is to reduce deaths and injuries associated with adult all terrain vehicles (ATVs) by ensuring that such ATVs meet certain technical requirements and that consumers have sufficient safety information about operating such ATVs.

(b) *Scope and effective date.* All terrain vehicles, as defined in § 1410.2(a) manufactured or imported on or after [180 days after final rule is issued] are subject to the requirements of this standard and 16 CFR Part 1307. ATVs intended for use by an operator less than sixteen (16) years of age are subject to the requirements in 16 CFR 1500.18(a)(20) and 16 CFR part 1515.

§ 1410.2 Definitions.

In addition to the definitions in section 3 of the Consumer Product Safety Act (15 U.S.C. 2052), the following definitions apply for purposes of this Part 1410.

(a) *All terrain vehicle, or ATV,* means a three- or four-wheeled motorized vehicle that travels on low pressure tires, has a seat designed to be straddled by the operator (and a passenger if provision is made for carrying a

passenger), has handlebars for steering, and is intended for off-road use on non-paved surfaces. For purposes of this part, all terrain vehicle, or ATV, means an ATV that is intended for use by an operator 16 years of age or older.

(b) *Footrest* means a structural support for the operator's feet, which can include footpegs and footboards.

(c) *Gearshift control* means a control for selecting among a number of sets of transmission gears.

(d) *Handlebar* means a device used for steering and rider support and as a place to mount hand-operated controls.

(e) *Low pressure tire* means a tire designed for off-road use on ATVs, and having a recommended tire pressure of no more than 69 kPa (10 psi).

(f) *Manual clutch* means a device activated by the operator to disengage the engine from the transmission.

(g) *Manual fuel shutoff control* means a device designed to turn the fuel flow from the fuel tank on and off.

(h) *Manufacturer* means any entity that produces ATVs. For purposes of this Part 1410, an importer is a manufacturer.

(i) *Mechanical suspension* means a system which permits vertical motion of an ATV wheel relative to the chassis and provides spring and damping forces.

(j) *Parking brake* means a brake system which, after actuation, holds one or more brakes continuously in an applied position without further action.

(k) *Passenger handhold* means a device on a tandem ATV to be grasped by the passenger to provide support and help maintain balance while riding as a passenger.

(l) *PIN* means a Product Identification Number assigned in accordance with *Recreation Off-Road Vehicle Product Identification Numbering System*, SAE International Consortium Standard, ICS-1000, issued 2004-9.

(m) *Retailer* means, for purposes of this part 1410, a person to whom an ATV is delivered or sold for purposes of sale or distribution by such person to a consumer.

(n) *Safety alert symbol* means the symbol which indicates a potential personal injury hazard as defined in section 4.10 of ANSI Z535.4-2002, *American National Standard for Product Safety Signs and Labels*.

(o) *Service brake* means the primary brake system used for slowing and stopping a vehicle.

(p) *Spark arrester* means an exhaust system component which limits the size of carbon particles expelled from a tailpipe.

(q) *Tandem all terrain vehicle* means a motorized off-highway vehicle designed to travel on four tires, having a seat designed to be straddled by the operator and handlebar for steering control, and a seating position behind the operator seat designed to be straddled by no more than one passenger.

(r) *Three-wheeled all terrain vehicle* means an all terrain vehicle as defined in paragraph (a) of this section that has three wheels.

(s) *Throttle control* means a control which is located on the handlebar and is used to control engine power.

(t) *VIN* means a Vehicle Identification Number assigned as specified in 49 CFR Part 565 (2005).

(u) *Wheelbase (L)* means the longitudinal distance from the center of the front axle to the center of the rear axle.

(v) *Wheel travel* means the displacement of a reference point on the suspension (such as the wheel axle) from when the suspension is fully extended (no force applied) to when it is fully compressed.

§ 1410.3 Requirements in general.

(a) Each ATV designed for use only by a single rider, shall meet the equipment, configuration and performance requirements specified in subpart B of this part. Each ATV designed for two riders shall meet the equipment, configuration and performance requirements specified in subpart D of this part. All ATVs shall meet the requirements for labeling, point of sale information, instruction manuals, and instructional training specified in subpart C of this part and the recordkeeping and certification requirements specified in subpart E of this part.

(b) Each ATV manufacturer shall comply with the requirements of this part applicable to manufacturers. For purposes of this part, an ATV importer is an ATV manufacturer.

(c) Each ATV retailer shall comply with the requirements of this part applicable to retailers.

(d) In accordance with 16 CFR part 1307, any three-wheeled all terrain vehicle as defined in § 1410.2(r) which is manufactured or imported on or after [180 days after final rule is issued] is a banned hazardous product.

§ 1410.4 Findings.

(a) *General.* In order to issue a consumer product safety standard under the Consumer Product Safety Act, the Commission must make certain findings and include them in the rule. 15 U.S.C. 2058(f)(3). These findings are discussed in this section.

(b) *Degree and nature of the risk of injury.* According to the Commission's 2004 Annual Report on ATVs, the Commission has reports of 6,494 ATV-related deaths that have occurred since 1982. For 2003 alone, an estimated 740 ATV-related deaths were reported to the Commission. The estimated number of ATV-related injuries treated in hospital emergency rooms in 2004 was 136,100, which is an increase of about 8 percent over the 2003 estimate. These incidents occur when the operator of an ATV loses control of the vehicle, collides with another object, or otherwise becomes injured or dies while riding an ATV. Many incidents are related to behavior of the operator (such as riding on paved roads, carrying a passenger, driving at excessive speeds).

(c) *Number of consumer products subject to the rule.* The market has increased substantially since ATVs were first introduced over thirty years ago. In 2005, an estimated 6.9 million ATVs were in use.

(d) *The need of the public for ATVs and the effects of the rule on their utility, cost and availability.* The need of the public for ATVs is both for recreation and for work, particularly on farms and ranches in rural areas. The proposed rule will have minimal effect on the utility, cost and availability of ATVs. The mechanical provisions of the proposed rule are substantially similar to requirements of the voluntary standard with which the major ATV manufacturers comply. Costs should be small because the information provisions of the proposed rule are also currently being followed by the major ATV manufacturers. With the exception of the ban of three-wheeled ATVs, the proposed rule should not affect the availability of ATVs. In fact, a greater variety of youth ATVs may become more available.

(e) *Other means to achieve the objective of the rule while minimizing the impact on competition and manufacturing.* Because most ATV manufacturers are currently complying with the ANSI/SVIA-1-2001 voluntary standard and are providing the information materials the proposed rule requires, the Commission does not believe that the proposed rule will have much effect on competition and manufacturing. It is likely, however, that newer entrants

may need to take action to bring their ATVs into compliance with the proposed rule. This could have the effect of increasing the price for the newer entrants' imported ATVs. In the future, this could reduce the number of new entrants coming into the ATV market.

(f) *Unreasonable risk.* As noted in paragraph (b) above, the Commission has reports of 6,494 ATV-related deaths that have occurred since 1982, and an estimated 740 ATV-related deaths were reported to the Commission for 2003 alone. The proposed rules will establish mechanical standards for ATVs and requirements for the provision of safety information about operating ATVs. Included in this will be a requirement for manufacturers to provide free training. Many ATV manufacturers are currently in compliance with many of the proposed requirements. However, some of the additional requirements (such as requiring the age acknowledgment form and training acknowledgment form) or requirements that are somewhat different from current practice (such as clearer warning statements) may better inform consumers of ATV-related risks who may then be better able to reduce or avoid these risks. Moreover, the mandatory requirements will cover the increasing number of new entrants into the ATV market who are not following

current voluntary standards or other safety practices that the major manufacturers are voluntarily following. This will reduce the risk of injury in the future as more such new entrants may enter the market.

(g) *Public interest.* These rules are in the public interest because they may reduce ATV-related deaths and injuries in the future. Their mandatory nature will mean that all ATV manufacturers will have to comply with the mechanical and information requirements of the rules. The increasing number of new entrants will make it difficult to maintain voluntary agreements with manufacturers. By issuing mandatory requirements, the Commission will have the authority to enforce these requirements rather than relying on voluntary compliance.

(h) *Voluntary standards.* The current voluntary standard, ANSI/SVIA-1-2001, specifies requirements for the mechanical operation of single rider ATVs (both for adult and youth ATVs). Manufacturers will be working to incorporate requirements for tandem ATVs into the voluntary standard. The major manufacturers appear to comply with most provisions of the voluntary standard. The voluntary standard does not contain information requirements for such things as warning labels, owners manuals and training.

Thus, compliance with the voluntary standard alone would not be adequate to eliminate the risk of injury. Many ATV incidents occur because of the way the ATV is used. The Commission cannot issue requirements for how a product should be used (e.g., requiring helmets, prohibiting children from riding adult ATVs). To affect these behaviors the Commission must act through requirements directing manufacturers and retailers to take actions that inform consumers of the risks associated with ATVs and advise consumers how they could reduce these risks.

Although the major manufacturers have agreed to take many of the informational actions proposed in the rules through the Letters of Undertaking ("LOUs") that they have entered into with the Commission, the LOUs are completely voluntary, and a company could decide to change any of the actions it has agreed to at any time.

Although the major manufacturers appear to be complying with the voluntary standard and abiding by their LOUs, a growing portion of the ATV market may not be following the voluntary standard (and is not bound by the LOUs). These new entrants now comprise approximately 10 percent of the market. Given recent trends and the lower

price of the new entrants' products, their share of the market is likely to increase.

Thus, the Commission finds that compliance with the ANSI/SVIA-1-2001 voluntary standard is not likely to eliminate or adequately reduce the risk of injury associated with ATVs, and it is unlikely that there will be compliance with the voluntary standard.

(i) *Relationship of benefits to costs.* Because most manufacturers are currently taking most of the actions that the proposed rules would require, costs from the proposed rules are likely to be small. The initial potential reduction of ATV-related deaths and injuries may also be small. However, mandating the mechanical and information requirements will mean that new entrants to the market, a group that has recently been increasing, will have to comply with the requirements as well. The proposed rule would impose some testing and recordkeeping costs. The staff estimates these to be about $462,000 annually. For many of the provisions, it is difficult to quantify benefits. However, for the training requirement alone, the Commission estimates the proposed provision could result in a net benefit of about $3.3 million annually. Given that in 2004 an estimated 136,000 ATV-related injuries were

treated in hospital emergency rooms, and that an estimated 6,494 ATV-related deaths have occurred since 1982, if the proposed rule affects even a small number of potential deaths and injuries, the benefits would bear a reasonable relationship to the costs.

(j) *Least burdensome requirement.* The proposed rule is likely to impose only a small burden on ATV manufacturers and retailers. The Commission is essentially mandating the current practice that many manufacturers are following. Nevertheless, the proposed rule is likely to reduce the risk of injury associated with ATVs because it will enable the Commission to directly enforce the provisions of the rule and will bring new entrants under federal regulation.

Subpart B – Requirements for Equipment, Configuration and Performance for Single Rider ATVs.

§ 1410.5 Equipment and configuration requirements.

(a) *Service brakes.* All ATVs shall have either independently-operated front and rear brakes, or front and rear brakes that are operated by a single control, or both. These brakes shall meet the requirements of § 1410.7 of this part.

(b) *Parking brake.* All ATVs shall have a parking brake capable of holding the ATV stationary under prescribed conditions. The parking brake shall meet the performance requirements of § 1410.8 of this part.

(c) *Mechanical suspension.* All ATVs shall have mechanical suspension for all wheels. Each wheel shall have a minimum wheel travel of 50 mm (2 inches). Springing and damping properties shall be provided by components other than the tire.

(d) *Engine stop switch.* All ATVs shall have an engine stop switch which is operable by the thumb without removing the hand from the handlebar. The engine stop switch shall not require the operator to hold it in the off position to stop the engine.

(e) *Manual clutch control.* All ATVs equipped with a manual clutch shall have a clutch lever which is operable without removing the hand from the handlebar.

(f) *Throttle control.* All ATVs shall be equipped with a means of controlling engine power through a throttle control. The throttle control shall be operable without removing the hand from the handlebar. The throttle control shall be self-closing to an idle position upon release of the operator's hand from the control.

(g) *Drivetrain controls.* (1) *Manual transmission gearshift control.* All ATVs equipped with a manual transmission gearshift control shall have the control located so that it is operable by the operator's left foot or left hand.

(i) *Operation of a foot gearshift control.* If equipped with a foot gearshift control, an upward motion of the operator's toe shall shift the transmission toward higher (lower numerical gear ratio) gears, and a downward motion toward lower gears. If equipped with a heel-toe (rocker) shifter, an upward motion of the toe or a downward motion of the heel shall shift the transmission toward higher gears and a downward motion of the toe toward lower gears.

(ii) *Operation of a hand gearshift control.* If equipped with a hand gearshift control, moving a control upward or depressing the upper portion of the control shall shift the transmission toward higher (lower numerical gear ratio) gears, and moving the control downward or depressing the lower portion of the control shall shift the transmission toward lower gears.

(iii) *Gear selection.* If three or more gears are provided, it shall not be possible to shift from the highest gear directly to the lowest gear, or vice versa.

(2) *Directional/Range controls.* Controls for selecting forward, neutral, or reverse or for selecting overall transmission ranges, or for selecting the differential drive (2-wheel or 4-wheel) shall have a defined shift pattern viewable by the operator.

(3) *Neutral indicator.* All ATVs with a neutral position shall have either a neutral indicator readily visible to the operator when seated on the ATV or a means to prevent starting of the ATV unless the transmission is in the neutral position. The indicator, if provided, shall be activated whenever the ignition system is on and the transmission is in neutral.

(4) *Reverse indicator.* All ATVs with a reverse position shall have a reverse indicator readily visible to the operator when the operator is seated on the ATV. The indicator shall be activated whenever the engine is running and the transmission is in reverse.

(5) *Electric start interlock.* An interlock shall be provided to prevent the ATV engine from being started by

electric cranking unless the transmission is in neutral or park, or the brake is applied.

(h) All ATVs shall have a means for allowing the presence of the ATV to be visible during daylight hours over an obstacle with a height of six (6) feet located directly adjacent to the ATV.

(i) *Manual fuel shutoff control.* If an ATV is equipped with a manual fuel shutoff control, the device shall be operable as prescribed in 49 CFR § 571.123 (2005), Table 1.

(j) *Handlebars.* The handlebar and its mounting shall present no rigid materials with an edge radius of less than 3.2 mm (0.125 inch) that may be contacted by a probe in the form of a 165 mm (6.5 inch) diameter sphere. The probe shall be introduced to the handlebar mounting area. It shall not be possible to touch any part of any edge that has a radius of less than 3.2 mm (0.125 inch) with any part of the probe. A handlebar crossbar, if provided, shall be equipped to minimize contact injuries.

(k) *Operator foot environment.* All ATVs shall have a structure or other design feature which meets the requirements of paragraphs (k)(1) through (4) of this section.

(1) *Test procedure.* Compliance shall be determined by introduction of a probe, whose end is a rigid flat plane surface 75 mm (3 inches) in diameter, in the prescribed direction to the zones as described in paragraphs (k)(2) and (3) of this section and as shown in Figures 1 and 2, or in the case of a tandem ATV, Figures 5 and 6.

(i) *Inserting probe vertically and downward.* The probe shall be introduced end-first in a vertical and downward direction to the zone described in paragraph (k)(2) of this section and shown by the shaded portion of Figure 1, or in the case of a tandem ATV, the shaded portion of Figure 5. The end of the probe in its entirety shall remain within the limits of the zone. It shall not penetrate the zone sufficiently to touch the ground when applied with a force of 445 N (100 lbf).

(ii) *Inserting probe horizontally and rearward.* The probe shall be introduced end-first in a horizontal and rearward direction to the zone described in paragraph (k)(3) of this section and shown by the shaded portion of Figure 2, or in the case of a tandem ATV, the shaded portion of Figure 6. The end of the probe in its entirety shall remain within the limits of the zone. It shall not

penetrate the zone sufficiently to touch the rear tire when applied with a force of 90 N (20 lbf).

(2) *Boundaries of zone in figure 1.* The zone shown in Figure 1, or in the case of a tandem ATV, Figure 5, is defined as bounded by:

(i) The vertical projection of the rear edge of the footrest.

(ii) The vertical plane (line AA) parallel to the ATV's longitudinal plane of symmetry that passes through the inside edge of the footrest.

(iii) The vertical projection of the intersection of a horizontal plane passing through the top surface of the footrest and the rear fender or other structure.

(iv) The vertical plane passing through point D and tangent to the outer front surface of the rear tire.

(A) For footpegs point D is defined as the intersection of the lateral projection of the rearmost point of the footpeg and the longitudinal projection of the outermost point of the footpeg.

(B) For footboards point D is defined as the intersection of 2 lines. The first is a line perpendicular to the vehicle longitudinal plane of symmetry and one-third of the distance from the front edge of the rear tire to the

rear edge of the front tire. The second is a line parallel to the ATV's longitudinal plane of symmetry and one-half the distance between the inside edge of the footboard and the outside surface of the rear tire.

(3) *Boundaries of zone in Figure 2.* The zone shown in Figure 2 is defined as bounded by:

(i) The horizontal plane passing through the lowest surface of the footrest on which the operator's foot (boot) rests (plane F), or in the case of a tandem ATV, the passenger's foot (boot) rests (Plane G, Figure 6).

(ii) The vertical plane (line AA) parallel to the ATV's longitudinal plane of symmetry that passes through the inside edge of the footrest.

(iii) The horizontal plane 100 mm (4 inches) above plane F, or in the case of a tandem ATV, plane G, Figure 6.

(iv) The vertical plane (line BB) parallel to the ATV's longitudinal plane of symmetry and 50 mm (2 inches) inboard of the outer surface of the rear tire.

(4) *Requirements for ATVs with non-fixed structure.* All ATVs equipped with a non-fixed type (for example, foldable, removable or retractable) structure intended to meet the requirements of this paragraph (k) shall be equipped with one or more of the following:

(i) A warning device (for example, a buzzer or indicator) to indicate that the structure is not in the position needed to comply with the requirements of this paragraph (k).

(ii) A device to prevent the ATV from being operated under its own power if the structure is not in the position needed to comply with the requirements of this paragraph (k).

(iii) A structure that can be folded, retracted, or removed, such that when the structure is folded, retracted, or removed, the ATV cannot be operated using the footrest in the normal manner.

(l) *Lighting equipment.* (i) *Requirement.* All ATVs shall have at least one headlamp projecting a white light to the front of the ATV, at least one tail lamp projecting a red light to the rear, and at least one stop lamp or combination tail/stop lamp. The stop lamp shall be illuminated by the actuation of any service brake control.

(ii) *Specifications.* Headlamps shall conform to Surface Vehicle Recommended Practice, *All Terrain Vehicle Headlamps*, SAE J1623 FEB94; and tail lamps shall conform to Surface Vehicle Standard, *Tail Lamps (Rear Position Lamps) for Use on Motor Vehicles Less than 2032 mm in Overall*

Width, SAE J585 MAR00. Stop lamps shall conform to Surface Vehicle Standard, *Stop Lamps for Use on Motor Vehicles Less than 2032 mm in Overall Width*, SAE J586 MAR00 or Surface Vehicle Recommended Practice, *Snowmobile Stop Lamp*, SAE J278 MAY95.

(m) *Spark arrester.* All ATVs shall have a spark arrester of a type that is qualified according to the United States Department of Agriculture Forest Service Standard for Spark Arresters for Internal Combustion Engines, 5100-1 c, September 1997 or, Surface Vehicle Recommended Practice, *Spark Arrester Test Procedure for Medium Size Engines*, SAE J350 JAN91.

(n) *Tire marking.* All ATV tires shall carry the following markings:

(1) *Inflation pressure.* Both tire sidewalls shall he marked with the operating pressure or the following statement, or an equivalent message: "SEE VEHICLE LABEL OR OWNER'S MANUAL FOR OPERATING PRESSURE." The messages required by this paragraph shall be in capital letters not less than 4 mm (0.156 inch) in height.

(2) *Bead seating pressure.* Both tire sidewalls shall be marked with the following statement, or an equivalent

message: "Do Not Inflate Beyond **psi (**kPa) When Seating Bead."

(3) *Other Markings*. Both tire sidewalls shall have the following information:

(i) The manufacturer's name or brand name.

(ii) On one tire sidewall, the three-digit week and year of manufacture in the form prescribed at 49 CFR § 574.5(d), fourth grouping.

(iii) The size nomenclature of the tire (for example, AT 22x10-9*) as standardized by the Tire and Rim Association, Inc. or the Japan Automobile Tire Manufacturers Association, Inc.

(iv) The word "tubeless" for a tubeless tire.

(v) The phrase "Not For Highway Use" or "Not For Highway Service."

(4) *Letter sizes*. The information required by paragraphs (2) and (3) of this subsection shall be in letters or numerals no less than 2 mm (.078 inch) in height.

(o) *Tire pressure*. All ATVs shall be provided with a means to verify that the pressures within each tire are within the recommended range(s).

(p) *Security*. All ATVs shall have a means to deter unauthorized use of the ATV.

(q) *Vehicle Identification Number (VIN) or Product Identification Number (PIN)*. Each ATV shall have prominently displayed on the ATV a unique VIN assigned by its manufacturer in accordance with 49 CFR Part 565 (2005) or a unique PIN in accordance with *Recreation Off-Road Vehicle Product Identification Numbering System*, SAE International Consortium Standard, ICS-1000, issued 2004-9. If the ATV has a VIN number, the characters in location 4 and 5 of the number shall be "A" and "T", respectively. The VIN or PIN label shall meet the durability requirements, including exposure conditions for outdoor use, of UL Standard for Safety for Marking and Labeling Systems, Underwriters Laboratories Standard UL 969, fourth edition, October 3, 1995.

§ 1410.6 Maximum speed capability test.

(a) *Test conditions*. Test conditions shall be as follows:

(1) ATV test weight shall be the unloaded ATV weight plus the vehicle load capacity (including test operator and instrumentation), with any added weight secured to the seat or cargo area(s) if so equipped.

(2) Tires shall be inflated to the pressures recommended by the ATV manufacturer for the vehicle's test weight.

(3) The test surface shall be clean, dry, smooth and level concrete, or equivalent.

(b) *Test procedure.* Measure the maximum speed capability of the ATV using a radar gun or equivalent method. The test operator shall accelerate the ATV until maximum speed is reached, and shall maintain maximum speed for at least 30.5 m (100 ft). Speed measurement shall be made when the ATV has reached a stabilized maximum speed. A maximum speed test shall consist of a minimum of two measurement test runs conducted over the same track, one each in opposite directions. If more than two measurement runs are made there shall be an equal number of runs in each direction. The maximum speed capability of the ATV shall be the arithmetic average of the measurements made. A reasonable number of preliminary runs may be made prior to conducting a recorded test.

§ 1410.7 Service brake performance test.

(a) *Test conditions.* Test conditions shall be as follows.

(1) The ATV shall be tested at the appropriate test weight prescribed below.

The ATV test weight shall be the unloaded vehicle weight plus the vehicle load capacity (including test operator and instrumentation) with any added weight secured to the seat or cargo area(s) (if equipped).

(2) Tires shall be inflated to the pressures recommended by the ATV manufacturer for the vehicle test weight.

(3) Engine idle speed and ignition timing shall be set according to the manufacturer's recommendations.

(4) Ambient temperature shall be between 0° C (32° F) and 38° C (100° F).

(5) The test surface shall be clean, dry, smooth and level concrete, or equivalent.

(6) Any removable speed limiting devices shall be removed and any adjustable speed limiting devices shall be adjusted to provide the ATV's maximum speed capability.

(b) *Test procedure.* The test procedure shall be as follows:

(1) Measure the maximum speed capability of the ATV in accordance with § 1410.6. Determine the braking test speed (V). The braking test speed is the speed that is the

multiple of 8 km/h (5 mph), which is 6 km/h (4 mph) to 13 km/h (8 mph) less than the maximum speed capability of the ATV.

(2) Burnish the front and rear brakes by making 200 stops from the braking test speed. Stops shall be made by applying front and rear service brakes simultaneously, and braking decelerations shall be from 1.96 m/s^2 to 4.90 m/s^2 (0.2 g to 0.5 g).

(3) After burnishing, adjust the brakes according to the manufacturer's recommendation.

(4) Make six stops from the braking test speed. Stops shall be made by applying the front and rear service brakes simultaneously, and braking decelerations shall be from 1.96 m/s^2 to 4.90 m/s^2 (0.2 g to 0.5 g).

(5) Make four stops from the braking test speed, applying the front and rear service brakes. Measure the speed immediately before the service brakes are applied. Appropriate markers or instrumentation shall be used which will accurately indicate the point of brake application. Measure the stopping distance (S).

(i) Hand lever brake actuation force shall be not less than 22 N (5 lbf) and not more than 133 N (30 lbf) and

foot pedal brake actuation force shall be not less than 44 N (10 lbf) and not more than 222 N (50 lbf).

(ii) The point of initial application of lever force shall be 25 mm (1.0 in.) from the end of the brake lever. The direction of lever force application shall be perpendicular to the handle grip in the plane in which the brake lever rotates. The point of application of pedal force shall be the center of the foot contact pad of the brake pedal, and the direction of force application shall be perpendicular to the foot contact pad and in the plane in which the brake pedal rotates.

(c) *Performance requirements*.

(1) For ATVs with maximum speed capability of 29 km/h (18 mph) or less, at least one of the four stops required by paragraph (b)(5) of this section shall comply with the relationship:

$S \leq V/5.28$	$S \leq V$
where	*where*
S = brake stopping distance (m) V = braking test speed (km/hr)	S = brake stopping distance (ft) V = braking test speed (mph)

(2) For ATVs with maximum speed capability of greater than 29 km/h (18 mph), at least one of the four stops required by paragraph (b)(5) of this section shall have an average braking deceleration of 5.88 m/s^2 (0.6 g) or greater. Average braking deceleration can be determined according to the following formulae*:

$a = V^2/25.92S$	$a = [(.033) \times V^2]/S$
where a = average deceleration (m/s2) S = brake stopping distance (m) V = braking test speed (km/h)	*where* a = average deceleration (g) S = brake stopping distance (ft) V = braking test speed (mph)

*Direct on-board instrumentation may be used to acquire any measurement data.

§ 1410.8 Parking brake performance test.

(a) *Test conditions*. Test conditions shall be as follows:

(1) ATV test weight shall be the unloaded ATV weight plus weight secured to the seat or cargo area(s) (if equipped), which is equal to the manufacturer's stated vehicle load capacity.

(2) Tires shall be inflated to the pressures recommended by the ATV manufacturer for the vehicle test weight.

(3) The test surface shall be clean, dry, smooth concrete or equivalent, having a 30 percent grade.

(b) *Test procedure*. The test procedure shall be as follows:

(1) Burnish the service brakes according to the procedure specified in § 1410.7(b)(2) if service brakes are used as part of the parking brake.

(2) Adjust the parking brake according to the procedure recommended by the ATV manufacturer.

(3) Position the ATV facing downhill on the test surface, with the longitudinal axis of the ATV in the direction of the grade. Apply the parking brake and place the transmission in neutral and Leave the ATV undisturbed for 5 minutes. Repeat the test with the ATV positioned facing uphill on the test surface.

(c) *Performance requirements*. When tested according to the procedure specified in paragraph (b) of this section, the parking brake shall be capable of holding the ATV stationary on the test surface, to the limit of

traction of the tires on the braked wheels, for 5 minutes in both uphill and downhill directions.

§ 1410.9 Pitch stability requirements.

(a) Test conditions. Test conditions shall be as follows:

(1) The ATV shall be in standard condition, without accessories. The ATV and components shall be assembled and adjusted according to the manufacturer's instructions and specifications.

(2) Tires shall be inflated to the ATV manufacturer's recommended settings for normal operation. If more than one pressure is specified, the highest value shall be used.

(3) All fluids shall be full (oil, coolant, and the like), except that fuel shall be not less than three-fourths full. ATV shall be unladen, with no rider, cargo, or accessories.

(4) Steerable wheels shall be held in the straight ahead position.

(5) Adjustable suspension components shall be set to the values specified at the point of delivery to the dealer.

(6) Suspension components shall be fixed by means of a locking procedure such that they remain in the same

position and displacement as when the unladen ATV is on level ground, and in the conditions specified in paragraphs (a)(1) through (5) of this section.

(b) *Test procedure.* The test procedure shall be as follows:

(1) Calculations based on vehicle metrics:

(i) Measure and record the wheelbase (L). The measurement of this length shall be done with an accuracy of ±5 mm (±0.2 inch) or ±0.5%, whichever is greater.

(ii) Measure and record the front and rear weights, (W_f and W_r, respectively). W_f is the sum of the front tire loads; and W_r is the sum of the rear tire loads with the ATV level and in the condition specified in subsection (a) of this section. The measurements of these weights shall be done with an accuracy of ±0.5 kg (±1.1 lb) or ±0.5%, whichever is greater.

(iii) Using the values obtained in paragraphs (b)(1)(i) and (ii) of this section, compute and record the quantity as follows:

$$L_1 = (W_f/(W_f + W_r)) \times L$$

(iv) Measure and record the vertical height between the rear axle center and the ground (R_r). This measurement shall be done on level ground, with the ATV in the

conditions specified in subsection (a) of this section, with an accuracy of ± 3 mm (±0.1 inch) or ±1.5%, whichever is greater.

(v) Measure and record the balancing angle alpha. The procedure for obtaining this value is as follows: with the ATV on a level surface, the front of the vehicle shall be rotated upward about the rear axle without setting the rear parking brake or using stops of any kind, until the ATV is balanced on the rear tires. The balancing angle alpha through which the ATV is rotated shall be measured and recorded with an accuracy of ±0.5 degrees. If an assembly protruding from the rear of the ATV, such as a carry bar or trailer hitch or hook, interferes with the ground surface, so as to not allow a balance to be reached, the vehicle shall be placed on blocks of sufficient height to eliminate the interference.

(vi) Repeat the measurement in paragraph (b)(1)(v) of this section and determine if the two individual measurements are within 1.0 degree of each other. If they are not, repeat the measurements two more times and compute the average of the four individual measurements, and use that as the value.

(2) *Tilt table procedure.* The ATV shall be placed on a variable slope single-plane tilt table. The steerable wheels shall be straight forward. The ATV shall be positioned on the tilt table with its longitudinal center line perpendicular to the tilt axis of the table and its rear positioned downhill. The table shall be tilted until lift-off of the upper tire(s) occurs. Measure the angle at which lift-off of the upper wheel(s) occurs. Lift-off shall have occurred when a strip of 20-gauge steel [approximately 1 mm (.039 inch) thick], 76 mm (3 inch) minimum width, can be pulled from or moved under the second uphill tire to lift with a force of 9 N (2 lb) or less.

(c) *Performance requirements.* (1) *Computation from vehicle metrics.* Using the values obtained in paragraphs (b)(1)(iii), (b)(1)(iv), and (b)(1)(vi) of this section, compute the pitch stability coefficient as follows:

$$K_p = (L_1 \tan \text{alpha}) / (L_1 + R_r \tan \text{alpha})$$

(2) *Computation from tilt table.* The pitch stability coefficient K_p is the tangent of the tilt table angle.

(3) *Requirement.* The pitch stability coefficient K_p calculated according to paragraph (c)(2) of this section shall be at least 1.0.

Subpart D - Requirements for Labeling, Point of Sale Information and Instruction Manuals.

§ 1410.10 Labeling requirements.

(a) *General warning label.* (1) Each ATV shall have affixed to it a general warning label in English that meets the requirements of this section.

(2) *Content.* The general warning label shall display the safety alert symbol and the word "WARNING" in capital letters. The label shall contain the following, or substantially equivalent, statements. They may be arranged on the label to place the prohibited actions together and the required actions together.

"THIS VEHICLE CAN BE HAZARDOUS TO OPERATE. A collision or rollover can occur quickly, even during routine maneuvers such as turning and driving on hills or over obstacles, if you fail to take proper precautions."

"SEVERE INJURY OR DEATH can result if you do not follow these instructions:"

- "BEFORE YOU OPERATE THIS ATV, READ THE OWNER'S MANUAL AND ALL LABELS."
- "NEVER OPERATE THIS ATV WITHOUT PROPER INSTRUCTION. Beginners should complete a training course."
- "NEVER CARRY A PASSENGER ON THIS ATV. You increase your risk of losing control if you carry a passenger."
- "NEVER OPERATE THIS ATV ON PAVED SURFACES. You increase your risk of losing control if you operate this ATV on pavement.

- "NEVER OPERATE THIS ATV ON PUBLIC ROADS. You can collide with another vehicle if you operate this ATV on a public road."
- "ALWAYS WEAR AN APPROVED MOROTORCYCLE HELMET, eye protection, and protective clothing."
- "NEVER CONSUME ALCOHOL OR DRUGS before or while operating this ATV."
- "NEVER OPERATE THIS ATV AT EXCESSIVE SPEEDS. You increase your risk of lowing control if you operate this ATV at speeds too fast for the terrain, visibility conditions, or your experience."
- "NEVER ATTEMPT WHEELIES, JUMPS, OR OTHER STUNTS."

(3) *Format.* The color scheme, typeface and formatting of the label shall be consistent with ANSI Z535.4 (American National Standard for Product Safety Signs and Labels (2002).

(4) *Location.* This label shall be affixed to the left front fender so it is easily visible in its entirety to the operator when seated on the vehicle in the proper operating position. If this location is not available for a particular ATV, the label shall be affixed to the right front fender so as to be easily read by the operator when seated in the ATV in the proper operating position.

(b) *Age recommendation warning label.* (1) Each ATV shall have affixed an age recommendation warning label in English that meets the requirements of this section.

(2) *Content*. The age recommendation warning label shall display the safety alert symbol and the word "WARNING" in capital letters. The label shall have a circle with a slash through it with the words "under 16" inside the circle. Below the circle, the label shall contain the following, or substantially equivalent, statements:

> "Even youth with ATV experience have immature judgment and should never drive an adult ATV.
>
> Letting children under the age of 16 operate this ATV increases their risk of severe injury or death.
>
> NEVER let children under age 16 operate this ATV."

(3) *Format*. The color scheme, typeface and formatting of the label shall be consistent with ANSI Z535.4 (2002).

(4) *Location*. This label shall be affixed to the fuel tank so it is visible in its entirety to the operator when seated on the vehicle in the proper operating position. If this location is not available for a particular ATV, or, if affixed at this location the label will not meet the durability requirement of paragraph (e) of this section, the label shall be placed on the front fender above the label required by paragraph (a) of this section so that it is visible in its entirety to the operator. If this location is not available for a particular ATV, the label shall be placed on the vehicle body immediately forward of

the seat so it is visible in its entirety to the operator when seated on the vehicle in the proper operating position.

(c) *Passenger warning label.* (1) Each ATV shall have affixed a passenger warning label in English that meets the requirements of this section.

(2) *Content.* The passenger warning label shall display the safety alert symbol and the word "WARNING" in capital letters. The label shall contain the following, or substantially equivalent, statements:

> "Passengers can affect ATV balance and steering. The resulting loss of control can cause SEVERE INJURY or DEATH.
>
> NEVER ride on this ATV as a passenger."

(3) *Format.* The color scheme, typeface and formatting of the label shall be consistent with ANSI Z535.4 (2002).

(4) *Location.* This label shall be affixed either to a flat surface of the vehicle body located to the rear of the seat and toward the center of the vehicle, or to the rear portion of the vehicle seat itself. If neither of these locations is available for a particular vehicle, the label shall be affixed to the left rear fender or the left side of the body so as to be easily seen by a potential passenger.

(d) *Tire pressure and overload warning label(s).*

(1) Each ATV shall have affixed a label or labels in English that meet the requirements of this section warning against improper air pressure in the ATV's tires and against overloading. Manufacturers may affix one warning label addressing both hazards.

(2) *Content.* The label(s) shall contain the safety alert symbol and the signal word "WARNING" in capital letters. Every label warning about improper tire pressure shall contain a statement indicating the recommended tire pressure, either on the label or by reference to the owner's manual and/or the tires. Every label warning against overloading shall contain a statement indicating the maximum weight capacity for the ATV model.

(i) If a manufacturer uses separate tire pressure and overloading labels, the label to warn of tire pressure shall contain the following, or substantially equivalent, statements:

-- "Improper tire pressure can cause loss of control. Loss of control can result in severe injury or death."

(ii) If a manufacturer uses separate tire pressure and overloading labels, the label to warn of overloading

hazards shall contain the following, or substantially equivalent, statements:

-- "Overloading can cause loss of control. Loss of control can result in severe injury or death."

(iii) If a manufacturer uses one label for both tire pressure and overloading warnings, the label shall contain the following, or substantially equivalent, statements:

"Improper tire pressure or overloading can cause loss of control.

Loss of control can result in severe injury or death."

(3) *Format*. The color scheme, typeface and formatting of the label shall be consistent with ANSI Z535.4 (2002).

(4) *Location*. The label(s) shall be affixed to the left rear fender above the axle, facing outward in such a position that it (they) can be read by the operator when mounting the vehicle.

(e) *Label durability requirements*. Each label required or permitted by this section shall meet the standards for durability in UL Standard for Safety for Marking and Labeling Systems, Underwriters Laboratories Standard UL 969, fourth edition, October 3, 1995.

(f) *Discretionary labels.* Hazard labels in addition to those specified in paragraphs (a) through (d) of this section may be affixed to the vehicle provided that:

(1) The discretionary labels are consistent with ANSI Z535.4 (2002); and

(2) Discretionary labels shall be affixed to ATVs in an appropriate location that does not detract from the mandatory labels required in paragraphs (a) through (d) of this section.

§ 1410.11 Hangtag requirements.

(a) Each ATV shall be equipped at the point of sale with a hang tag in English that, at a minimum, contains:

(1) the contents of the general warning label described in § 1410.10(a) of this part;

(2) the statement - "This hang tag is not to be removed before sale" --; and

(3) the statement -"Check with your dealer to find out about state or local laws regarding ATV operation."

(b) Each hang tag shall be attached to the ATV in such a manner as to be conspicuous and removable only with deliberate effort.

(c) Each hang tag shall be at least 4 by 6 inches.

1410.12 Age acknowledgment.

(a) *General*. Prior to the sales transaction, the retailer shall provide the purchaser of each ATV with an age acknowledgement in the form shown in figure 3.

(b) *Signature*. Prior to the sales transaction, the retailer shall require that the purchaser of the ATV sign the age acknowledgement representing that the purchaser has read and understood the age acknowledgement.

(c) *Copies/retention*. The retailer shall provide the purchaser of the ATV and the manufacturer of the ATV with a copy of the signed age acknowledgement. The retailer shall retain the signed original of the age acknowledgement for a minimum of five (5) years after the date of the purchase of the ATV to which it pertains. The manufacturer shall retain the copy of the age acknowledgement for a minimum of five (5) years after the date of the purchase of the ATV to which it pertains.

§ 1410.13 Instructional/Owner's manual.

(a) *General*. (1) Each ATV shall be provided at the point of sale with an instructional/owner's manual that meets the requirements of this section. All ATVs shall be equipped with a means of carrying the manual that protects it from destructive elements while allowing reasonable access.

(2) Each manual shall be written in English and shall be written and designed in a manner reasonably calculated to convey information regarding safe operation and maintenance of the vehicle to persons who read such manual.

(3) Each manual shall be written in plain, simple language so as to be readily comprehended by the average seventh grader, as measured by a standard technique for assessing the readability of written materials.

(4) Information in each manual shall be presented in a meaningful sequence designed to permit readers to understand the information presented and appreciate its significance.

(5) Each manual shall be consistent with other safety messages required by this part, including those contained in warning labels, hang tags, and the safety video.

(6) Each manufacturer shall retain a copy of the manual for each model until five years after the model has ceased to be in production. The manufacturer shall make the manual available to CPSC upon request.

(b) *Contents.* Each manual shall contain--

(1) A statement on the outside front cover that, at a minimum, alerts the reader that the manual contains

important safety information which should be read carefully.

(2) A statement on the outside front cover stating that the ATV is intended for operators 16 years of age or older.

(3) Definitions for "warning" and "caution" that are consistent with, or in any event not weaker than, the definitions for those terms contained in American National Standards Institute (ANSI) standard Z535 - 2002, along with an introductory statement alerting the reader to the significance of the safety alert symbol and the signal words.

(4) A reminder that the safety alert symbol with the word "WARNING" indicates a potential hazard that could result in serious injury or death. This reminder shall be repeated immediately preceding the table of contents, at the beginning and end of the section describing proper operating procedures, on the last page before the outside back cover (or on the inside back cover), and a total of at least five (5) more times, appropriately spaced, within sections containing warnings.

(5) An introductory safety message emphasizing the importance of reading and understanding the manual prior to

operation of the ATV, the importance of and availability of the instructional training required by § 1410.15 of this part, and the importance of the age recommendation for the particular model. This introductory message shall contain, at a minimum, the following statement:

> "Failure to follow the warnings contained in this manual can result in SERIOUS INJURY or DEATH"

(6) An introductory notice stating, at a minimum:

> "This ATV is not intended for children. Children should only ride youth ATVs that are specifically intended for children under 16 years of age."

(7) An introductory safety section which, at a minimum, contains the following safety messages in the form shown:

"AN ATV IS NOT A TOY AND CAN BE HAZARDOUS TO OPERATE. An ATV handles differently from other vehicles including motorcycles and cars. A collision or rollover can occur quickly, even during routine maneuvers such as turning and driving on hills or over obstacles, if you fail to take proper precautions.

SEVERE INJURY OR DEATH can result if you do not follow these instructions:

- Read this manual and all labels carefully and follow the operating procedures described.
- Never operate an ATV without proper instruction. Take a training course. Contact an authorized ATV dealer to find out about the training courses near you.

- Never allow a child under 16 to operate this ATV, which is not intended for operators under 16 years of age.

- Never carry a passenger on this ATV.

- Never operate an ATV on any paved surfaces, including sidewalks, driveways, parking lots and streets.

- Never operate an ATV on any public street, road or highway, even a dirt or gravel one.

- Never operate an ATV without wearing an approved helmet that fits properly. You should also wear eye protection (goggles or face shield), gloves, boots, long-sleeved shirt or jacket, and long pants.

- Never consume alcohol or drugs before or while operating an ATV.

- Never operate at excessive speeds. Always go at a speed that is proper for the terrain, visibility and operating conditions, and your experience.

- Never attempt wheelies, jumps, or other stunts.

- Always inspect your ATV each time you use it to make sure it is in safe operating condition. Always follow the inspection and maintenance procedures and schedules described in this manual.

- Always keep both hands on the handlebars and both feet on the footpegs of the ATV during operation.

- Always go slowly and be extra careful when operating on unfamiliar terrain. Always be alert to changing terrain conditions when operating the ATV.

- Never operate on excessively rough, slippery or loose terrain until you have learned and practiced the skills necessary to control the ATV on such terrain. Always be especially cautious on these kinds of terrain.

- Always follow proper procedures for turning as described in this manual. Practice turning at low speeds before attempting to turn at faster speeds. Do not turn at excessive speed.

- Never operate the ATV on hills too steep for the ATV or for your abilities. Practice on smaller hills before attempting larger hills.

- Always follow proper procedures for climbing hills as described in this manual. Check the terrain carefully before you start up any hill. Never climb hills with excessively slippery or loose surfaces. Shift your weight forward. Never open the throttle suddenly or make sudden gear changes. Never go over the top of any hill at high speed.

- Always follow proper procedures for going down hills and for braking on hills as described in this manual. Check the terrain carefully before you start down any hill. Shift your weight backward. Never go down a hill at high speed. Avoid going down a hill at an angle that would cause the vehicle to lean sharply to one side. Go straight down the hill where possible.

- Always follow proper procedures for crossing the side of a hill as described in this manual. Avoid hills with excessively slippery or loose surfaces. Shift your weight to the uphill side of the ATV. Never attempt to turn the ATV around on any hill until you have mastered the turning technique described in this manual on level ground. Avoid crossing the side of a steep hill if possible.

- Always use proper procedures if you stall or roll backwards when climbing a hill. To avoid stalling, use proper gear and maintain a steady speed when climbing a hill. If you stall or roll backwards, follow the special procedure for braking described in this manual. Dismount on the uphill side or to a side if pointed straight uphill. Turn the ATV around and remount, following the procedure described in this manual.

- Always check for obstacles before operating in a new area. Never attempt to operate over large obstacles, such as large rocks or fallen trees. Always follow proper procedures when operating over obstacles as described in this manual.

- Always be careful when skidding or sliding. Learn to safely control skidding or sliding by practicing at low speeds and on level, smooth terrain. On extremely slippery surfaces, such as ice, go slowly and be very cautious in order to reduce the chance of skidding or sliding out of control.

- Never operate an ATV in fast flowing water or in water deeper than that specified in this manual. Remember that wet brakes may have reduced stopping ability. Test your brakes after leaving water. If necessary, apply them several times to let friction dry the linings.

- Always be sure there are no obstacles or people behind you when you operate in reverse. When it is safe to proceed in reverse, go slowly.

- Always use the size and type tires specified in this manual. Always maintain proper tire pressure as described in this manual.

- Never modify an ATV through improper installation or use of accessories.

- Never exceed the stated load capacity for an ATV. Cargo should be properly distributed and securely attached. Reduce speed and follow instructions in the manual for carrying cargo or pulling a trailer. Allow greater distance for braking.

FOR MORE INFORMATION ABOUT ATV SAFETY, visit the CPSC website at www.cpsc.gov or call the Consumer Product Safety Commission at 1-800-638-2772, or [**Insert contact number for manufacturer**].”

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(8) An appropriate table of contents identifying the major portions of the manual.

(9) Descriptions of the location of warning labels on the ATV and an introductory statement emphasizing the importance of understanding and following the labels and the importance of keeping the labels on the ATV. The introductory statement shall also contain instructions on how to obtain a replacement label in the event any label becomes difficult to read. These instructions shall include a toll-free telephone number that can be called to obtain a replacement label.

(10) A telephone number or email address for the owner of the ATV to contact the manufacturer to report safety issues and/or seek information on the proper, safe operation of the ATV.

(11) A description of pre-operating inspection procedures and a statement emphasizing the importance of these procedures.

(12) A description of proper operating procedures and of potential hazards associated with improper operation of the ATV. The section of each manual devoted to describing proper operating procedures shall include material

addressing in narrative text form and in appropriate detail all of the topics addressed in paragraph (b)(7) of this section. Such narrative text shall identify particular potential hazards associated with the types of operation or behavior in question, the possible consequences of such operation or behavior, and shall describe the manner in which the vehicle should be properly operated to avoid or reduce the risk associated with such hazards. Such narrative text shall include warning statements and corresponding illustrations in conformance with the requirements of this section and § 1410.10 of this part. The language of the narrative sections accompanying each warning shall not contradict any information contained in the warning section and shall be written to draw attention to the warning.

(13) Descriptions of proper maintenance, storage, and transportation procedures.

(14) On the outside back cover, the contents of the general warning label required by § 1410.10(a) of this part.

(c) Where a manual describes a potential hazard that is not addressed in this section, but which nevertheless meets the definition of a potential hazard for which a

"warning" or "caution," as these terms are defined in ANSI Standard Z535.4 - 2002, is appropriate, the discussion of that potential hazard shall be accompanied by a "warning" or "caution" statement which conforms to the requirements of ANSI Standard Z535.4 - 2002 and this section.

§ 1410.14 Safety video.

(a) *General.* The retailer shall provide the purchaser with a safety video at or before the completion of the purchase transaction. The safety video shall be designed to communicate to an audience consisting of prospective purchasers and users, including children between the ages of 9 and 16, and their parents.

(b) *Title.* The title of the safety video shall indicate that the video provides safety information concerning ATV operation.

(c) *Content.* The safety video shall communicate the following:

(1) the contents of the hang tag described in § 1410.11 of this part;

(2) the concept that a person operating an ATV should know his or her limitations and not attempt to perform any maneuver or traverse any terrain if performing the maneuver

or operating on the terrain is beyond that person's capabilities and experience;

(3) the importance of practicing and gradually progressing from basic to more complex maneuvers; and

(4) The importance of keeping alert at all times and the concept that even a brief distraction can lead to loss of control resulting in a severe or fatal accident.

(d) *Dramatization.* All dramatizations designed to communicate any of the concepts set forth in the preceding subsection shall be unambiguous. To avoid ambiguity and ensure clarity, dramatizations shall:

(1) In the case of dramatizations that show an accident occurring, averted, or about to occur, the video shall contain no intervening events that detract from communication of the hazard (for example, the presence of an obstacle on a paved surface when communicating the hazard of operating on a paved surface, or a person running in front of an ATV when communicating the hazard of carrying passengers); and

(2) In the case of dramatizations that show either the conduct, terrain, or maneuvers that a person should avoid, or the conduct that a person should observe, the video shall also unequivocally state the relevant safety message,

either verbally by means of lines spoken by a screen character or narrator, in written form, or both.

(e) *Format.* The safety video shall be made available in at least one commonly used format, e.g., VHS or DVD, and the purchaser shall be given the option at no cost of procuring the safety video in at least one format other than the one originally supplied with the ATV at the time of purchase.

(f) *Retention.* The manufacturer shall retain a copy of the safety video until five years after the model to which applies ceases to be in production. The manufacturer shall make the video available to CPSC upon request.

1410.15 Instructional training.

(a) *General.* The manufacturer shall provide to the purchaser at no charge a training course for the purchaser and each member of the purchaser's immediate family who meets or exceeds the minimum age recommendation for the ATV in question. The training course shall be provided in the form of one certificate valid for the purchaser and each qualifying member of the purchaser's immediate family redeemable at no cost for attendance at a training course meeting the requirements of this section.

(b) *Form of certificate.* Each certificate shall identify the VIN or PIN number for the ATV to which it pertains and shall have no expiration date. In addition the certificate shall include a toll-free telephone number or other readily useable means for the purchaser to contact the training organization to arrange for training.

(c) *Retailer responsibility.* The retailer shall provide the certificate(s) to the purchaser at the time of purchase and shall obtain the purchaser's signature on the training acknowledgment form shown in Figure 4. The retailer shall retain the signed original of the training availability form and shall provide the purchaser and the manufacturer of the ATV with a copy.

(d) *Course content.* The training curriculum shall, at a minimum, address the following:

(1) The risks of ATV-related deaths and injuries (risk awareness).

(2) The role of safety equipment, including identifying suitable equipment, properly using equipment, and understanding why it is used.

(3) Rider responsibilities, including:

(i) why children/youths should not ride adult ATVs;

(ii) why all ATV users should take a hands-on safety training course;

(iii) why one should never ride a youth ATV or non-tandem adult ATV with a passenger or as a passenger;

(iv) why one should never drive an ATV on paved roads;

(v) why one should always wear a helmet and other protective gear while on an ATV; and

(vi) why one should never drive an ATV while under the influence of alcohol or drugs.

(4) identifying displays and controls;

(5) recognizing limitations, including inclines and rider abilities;

(6) evaluating a variety of situations to predict proper course of action, including terrain obstacles and behavior of other riders;

(7) demonstrating successful learning of riding skills, including:

i) starting and stopping;

ii) negotiating turns, including gradual, sharp, and quick turns, weaving, and evasive maneuvers;

iii) stopping in a turn;

iv) emergency braking while straight and while turning.

(v) negotiating full track and partial track obstacles.

(vi) negotiating hills, including ascending, descending, traversing, and emergency situations; and

(vii) combining skills together in a non-predictable manner (i.e. trail ride or free riding period with instructor supervision and critique).

(e) *Course structure.* The course shall include classroom, field, and trail activities.

(f) *Course duration.* The course duration shall be sufficient to cover the topics noted in this section, allow for each student to individually master the riding skills addressed in the course at the level commensurate with the terrain at the location of the course, and allow for written and riding skills tests.

Subpart D - Requirements for Tandem ATVs.

§ 1410.16 Requirements in general

All tandem ATVs shall meet the requirements stated in Subpart B and Subpart C of this standard except as specified differently in this subpart D.

§ 1410.17 Equipment and configuration requirements.

(a) *Passenger environment.* All tandem ATVs shall have a passenger backrest and handhold which meet the following requirements:

(1) *Passenger location and restraint.* The passenger seating area behind the operator area shall be equipped with a generally vertical cushioned passenger backrest at the back of the seating area that shall be capable of withstanding a 900 N (202 lb.) loading force applied horizontally toward the rear at a height above the seating area of at least 162 cm (8 inches), without failure or permanent deformation.

(2) *Passenger handholds.* Two handholds shall be provided and be located on each side of the passenger seating area in a symmetrical manner. These handholds must be able to withstand, without failure or permanent deformation, a vertical force of 1000 N (224 lb.) applied statically to the center of the surface of the handhold. Handholds shall allow the passenger to dismount without interference from the handholds.

(b) *Operator and Passenger foot environment.* All two-person ATVs shall have a foot support structure covered by footboards and distinct foot pegs for the operator and the passenger respectively. The minimum projected horizontal

distance between the foot pegs shall be 230mm (9 inches) as measured on a line parallel to the longitudinal axis of the vehicle. When normally positioned on the foot pegs, the operator and passenger foot print must not overlap as projected on a horizontal plane and the passenger footprint must be contained in the projected footboard area. The operator and passenger foot environment shall meet the requirements in § 1410.5(k)(1) through (3). See Figures 5 and 6.

(c) *Mechanical suspension.* All tandem ATVs shall have mechanical suspension for all wheels in addition to what is provided by the tires. Each wheel shall have a minimum travel of 102 mm (4 inches).

(d) *Lighting equipment.* Tandem ATVs that are wider than 1500 mm shall have at least two headlights and two tail lamps.

§ 1410.18 Pitch stability requirement for tandem ATVs.

(a) *Test Conditions.* Test conditions shall be as follows:

(1) The ATV shall be in standard condition, without accessories. The ATV and components shall be assembled and adjusted according to the manufacturer's instructions and specifications.

(2) Tires shall be inflated to the tandem ATV manufacturer's highest recommended pressure.

(3) All fluids shall be full (oil, coolant, and the like), except that fuel shall be not less than three-fourths full. ATV shall be unladen, with no rider, passenger, cargo, or accessories except as noted per the following conditions.

(4) Steerable wheels shall be held in the straight ahead position.

(5) Adjustable suspension components shall be set to the highest values recommended by the manufacturer.

(6) A weight of 91 kg ± 3 (200 lb ± 7) shall be securely fastened to the passenger seat to simulate a passenger. The center of gravity of the weight shall be 15 cm ± 2 (6 inches ±1) above the passenger supporting surface and 25 cm ± 2 (10 inches ±1) forward of the front surface of the back rest. The back rest shall be adjusted to its most rearward position.

(7) A weight of 91 kg ± 3 (200 lb ± 7) shall be securely fastened to the operation seat to simulate an operator. The center of gravity of the weight shall be 15 cm ± 2 (6 inches ± 1) above the operator supporting surface and

either 30 cm ± 2 (12 inches ± 1) ahead of the passenger center of gravity.

(8) The area under the tires on the table may be covered with ¾" No. 1 diamond shaped steel expanded metal grid (or plate) or similar material to engage tire tread and prevent tire sliding.

(b) *Test Procedure.* The tandem ATV shall be placed on a variable slope single-plane tilt table. The steerable wheels shall be straight forward. The ATV shall be positioned on the tilt table with its longitudinal center line perpendicular to the tilt axis of the table and its rear positioned downhill. The table shall be tilted until lift-off of the upper wheels(s) occurs. Measure the angle at which lift-off of the upper wheel(s) occurs. Lift-off shall have occurred when a strip of 20-gauge steel [approximately 1 mm (.039 inch) thick], 76 mm (3 inch) minimum width, can be pulled from or moved under the second uphill tire to lift with a force of 9 N (2 lb) or less.

(c) *Performance Requirements.* The angle of the tilt table with the tandem ATV positioned as described in 9.2.2 shall reach a minimum of 36 degrees (73% slope) before lift-off occurs.

§ 1410.19 Information requirements for tandem ATVs. Each tandem ATV shall meet the requirements of subpart C of this part, with the following exceptions.

(a) *Labeling.* (i) *General warning label.* The general warning label required by § 1410.10(a) shall omit the statement "NEVER CARRY A PASSENGER. You increase your risk of losing control if you carry a passenger."

(ii) *Passenger warning label.* (A) *Content.* Instead of the warning statement specified in § 1410.10(c), the passenger warning label shall state "NEVER CARRY MORE THAN 1 PASSENGER" in capital letters and shall recommend the following hazard-avoidance behaviors:

- Never carry a passenger less than twelve (12) years old or twelve years old or older who is too small to firmly plant his/her feet on the footrests and to securely grab the handles;
- Never allow a passenger to sit in a location other than the passenger seat;
- Never carry a passenger who is not securely grasping the grip handles at all times.

(B) *Location.* The passenger warning label shall be affixed to the front fender of each tandem ATV so it is adjacent to the general warning label and can be easily

read by the operator when seated on the ATV in the proper operating position.

(b) *Hangtags*. The hangtag stating the contents of the general warning label shall meet the requirements of § 1410.11.

(c) *Instructional/owner's manuals*. Instead of instructing that operators should never carry passengers on ATVs, instructional/owner's manuals shall contain the following, or substantially equivalent statement:

> "NEVER CARRY MORE THAN ONE PASSENGER. This ATV has been designed specifically to carry one passenger."

Subpart E - Certification/testing/recordkeeping

§ 1410.20 Certification.

(a) At the location of the VIN or PIN number, the following statement shall be made: "The manufacturer certifies that this ATV complies with all applicable requirements of 16 C.F.R. Part 1410."

(b) The VIN number or PIN number and the compliance statement shall meet the durability requirements of UL Standard for Safety for Marking and Labeling Systems, Underwriters Laboratories Standard UL 969, fourth edition, October 3, 1995.

§ 1410.21 Testing. Each manufacturer of ATVs subject to this part shall perform or cause to be performed testing sufficient to demonstrate on an objectively reasonable basis that each ATV produced by that manufacturer meets the performance requirements of §§ 1410.5 through 1410.9 of this part for single rider ATVs and §§ 1410.16 through 1410.18 of this part for tandem ATVs.

§ 1410.22 Recordkeeping.

(a) *Manufacturer requirements.* Each manufacturer (the importer is considered a manufacturer for purposes of this part) of ATVs subject to this part shall:

(1) maintain records in English sufficient to demonstrate on an objectively reasonable basis that each ATV produced by that manufacturer complies with the requirements of this part;

(2) retain records required by this part for a period of at least five (5) years after production of the model of ATV to which the records pertain ceases;

(3) maintain records required by this part at a location in the United States; and

(4) make records required by this part available for inspection at the request of a duly authorized

representative of the U.S. Consumer Product Safety Commission.

(b) *Retailer requirements.* Each retailer of ATVs subject to this part shall:

(1) maintain the original of each age acknowledgement required by § 1410.12 of this part and each acknowledgement of training availability required by § 1410.15 of this part for a period of at least five (5) years after the date of purchase of the ATV to which the acknowledgements pertain;

(2) maintain records required by this section at a location in the United Stats; and

(3) make records required by this section available for inspection at the request of a properly authorized representative of the U.S. Consumer Product Safety Commission.

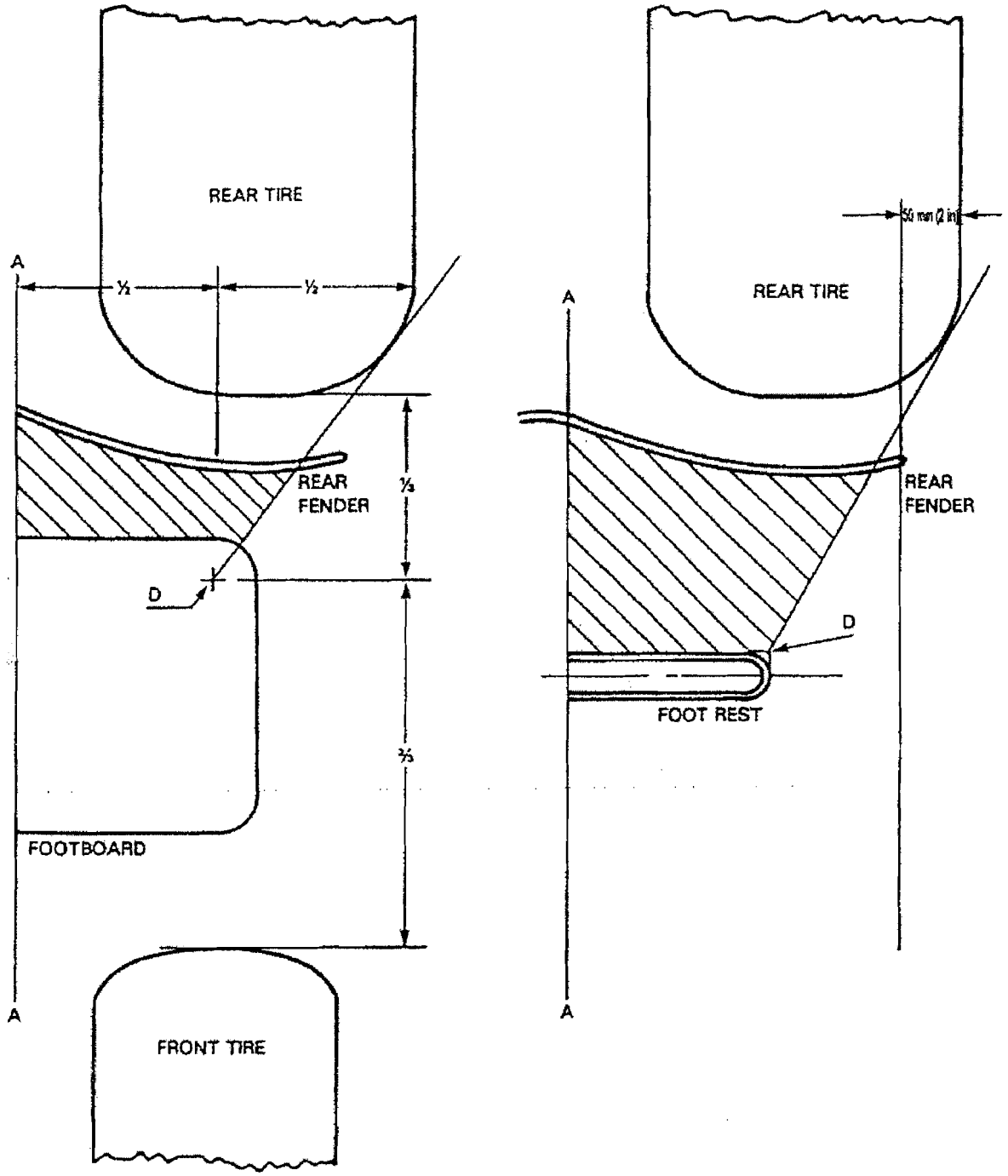

Figure 1
Operator Foot Environment - Plan View

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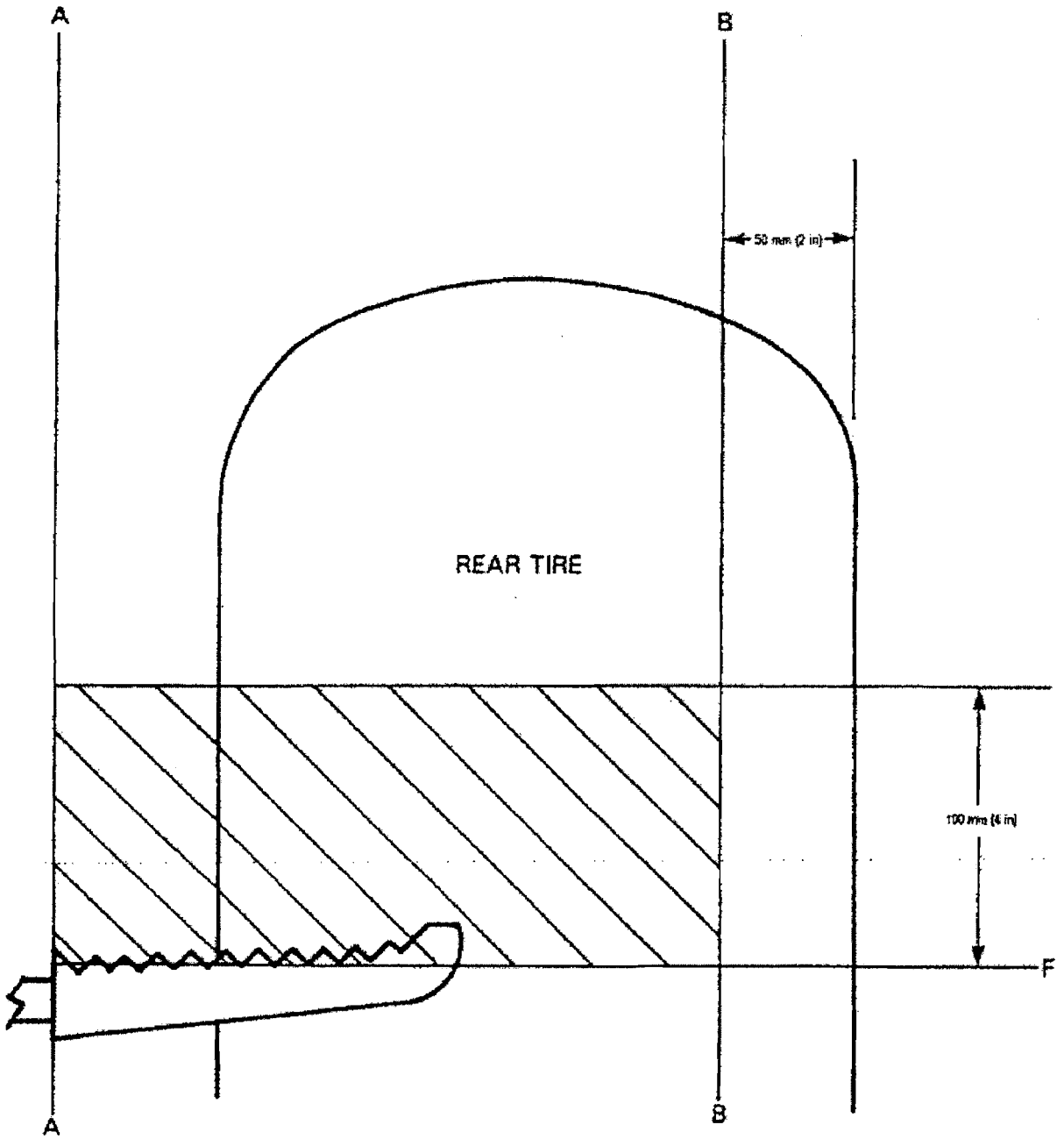

Figure 2
Operator Foot Environment - Front View

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The ATV you are considering is for adult drivers ONLY.

Adult ATVs can reach highway speeds and are inappropriate for anyone under 16. Even children with ATV-driving experience have immature judgment and should never drive an adult ATV.

Compared to an adult, a child younger than 16 who drives an adult ATV is more than **[to be added]** times as likely to die or to be injured.

In **each** year since 2001:

- More than [**to be added**] children younger than 16 died while riding an ATV.
- More than [**to be added**] children younger than 16 were treated in emergency rooms for ATV-related injuries.

Most of these deaths and injuries involved a child riding an adult ATV. Youth ATVs are available and are designed specifically for drivers under 16.

I have read the information above and understand that the ATV I am about to buy is for adults only. I also understand that youth ATVs are available for children under 16.

Purchaser Signature Date (mm/dd/yyyy)

Full name (please print)

TO BE COMPLETED BY DEALER

This form must be kept on file for 5 years and may be periodically reviewed by officials of the U.S. Consumer Product Safety Commission to ensure that ATV purchasers have been given this information.

Vehicle VIN/PIN

Figure 3
Age Acknowledgment Form

(DRAFT OF 5/30/06)

ATV Training

ATVs are complex motor vehicles requiring skill to drive, and new ATV drivers[1] have the highest risk of injury. ATVs don't handle as you might expect - they don't behave like a dirt bike, motorcycle, or car.

The best way to become familiar with your ATV and learn about its special handling is to take an ATV training class.

FREE ATV training is available for you and your household when you purchase an ATV.

You wouldn't drive a car without having someone show you how to handle it. Come to a training class and learn how to drive your ATV!

I have read the information above and have been given a certificate that is good for one free training course for me and each member of my immediate household whom the ATV is age-appropriate.

Purchaser Signature Date (mm/dd/yyyy)

Full name (please print)

TO BE COMPLETED BY DEALER

This form must be kept on file for 5 years and may be periodically reviewed by officials of the U.S. Consumer Product Safety Commission to ensure that ATV purchasers have been given this information.

Vehicle VIN/PIN

Figure 4
Training Acknowledgement Form

[1] Those with less than one year of experience compared to those with multiple years of experience.

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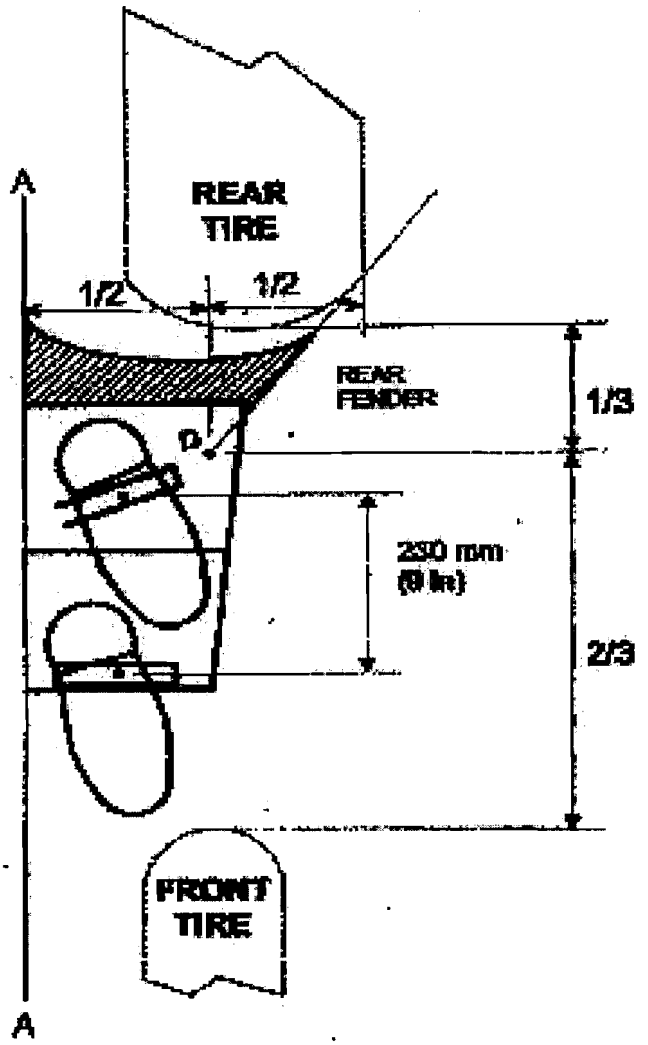

Figure 5
Operator and Passenger Foot Environment
Plan View

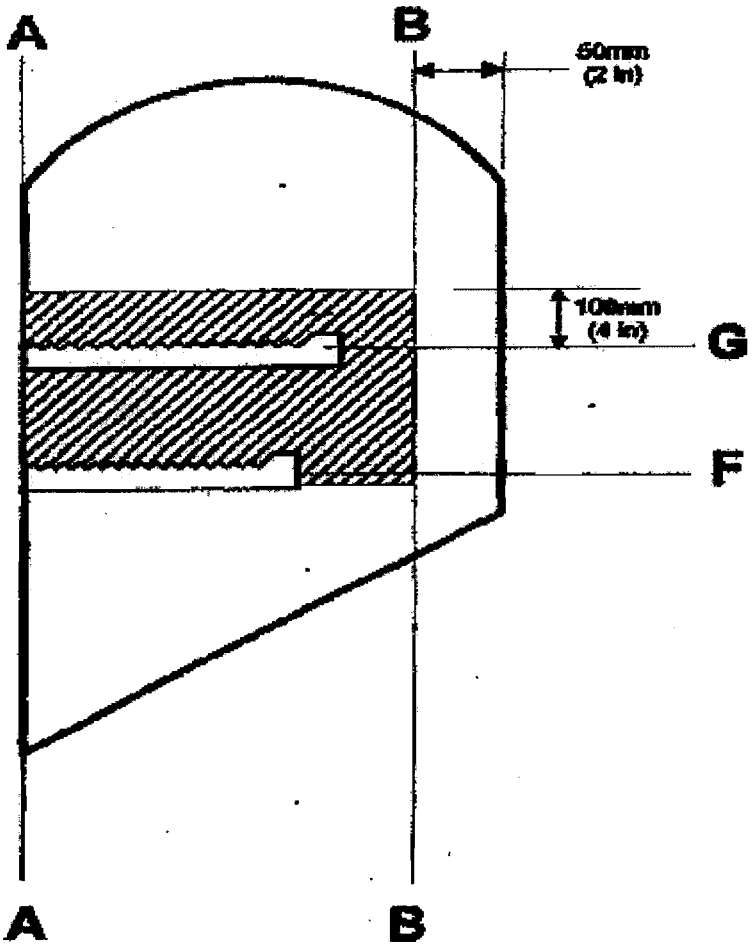

Figure 6
Operator and Passenger Foot Environment
Front View

PART 1515 – REQUIREMENTS FOR YOUTH ALL TERRAIN VEHICLES

Subpart A – General Requirements

Sec.

Subpart B – Requirements for Equipment, Configuration and Performance.

Subpart C - Requirements for Labeling, Point of Sale Information and Instruction.

Subpart D - Certification/testing/recordkeeping

Figures

AUTHORITY: 15 U.S.C. 1261, 1262, and 1269.

§ 1515.1 Purpose, scope, effective date.

(a) *Purpose*. The purpose of the standard is to reduce deaths and injuries associated with youth all terrain vehicles (ATVs) by ensuring that all youth ATVs meet certain technical requirements and that consumers have sufficient safety information about operating youth ATVs.

(b) *Scope and effective date*. Youth all terrain vehicles, as defined in § 1515.2(a), manufactured or imported on or after [date 180 days from issuance of final rule] are subject to the requirements of this standard and 16 CFR 1500.18(a)(20).

§ 1515.2 Definitions.

In addition to the definitions in section 2 of the Federal Hazardous Substances Act (15 U.S.C. 1261), the following definitions apply for purposes of this Part 1515.

(a) *Youth all terrain vehicle, or youth ATV,* means a three- or four-wheeled motorized vehicle intended for use by an operator less than sixteen (16) years of age, that travels on low pressure tires, has a seat designed to be straddled by the operator, has handlebars for steering, and is intended for off-road use on non-paved surfaces.

(b) *Junior ATV* means a youth ATV intended for use by an operator of at least 6 years of age.

(c) *Pre-teen ATV* means a youth ATV intended for use by an operator of at least 9 years of age.

(d) *Teen ATV* means a youth ATV intended for use by an operator of at least 12 years of age.

(e) *Footrest* means a structural support for the operator's foot, can include footpegs and footboards.

(f) *Handlebar* means a device used for steering and rider support and as a place to mount hand-operated controls.

(g) *Low pressure tire* means a tire designed for off-road use on ATVs, and having a recommended tire pressure of no more than 69 kPa (10 psi).

(h) *Manual fuel shutoff control* means a device designed to turn the fuel flow from the fuel tank on and off.

(i) *Manufacturer* means any entity that produces youth ATVs. For purposes of this Part 1515, an importer is a manufacturer.

(j) *Mechanical suspension* means a system which permits vertical motion of an ATV wheel relative to the chassis and provides spring and damping forces.

(k) *Parking brake* means a brake system which, after actuation, holds one or more brakes continuously in an applied position without further action.

(l) *PIN* means the Product Identification Number assigned in accordance with *Recreation Off-Road Vehicle Product Identification Numbering System*, SAE International Consortium Standard, ICS-1000, issued 2004-9.

(m) *Retailer* means, for purposes of this part, a person to whom an ATV is delivered or sold for purposes of sale or distribution by such person to a consumer.

(n) *Safety alert symbol* means the symbol which indicates a potential personal injury hazard as defined in section 4.10 of ANSI Z535.4-2002, *American National Standard for Product Safety Signs and Labels*.

(o) *Service brake* means the primary brake system used for slowing and stopping a vehicle.

(p) *Spark arrester* means an exhaust system component which limits the size of carbon particles expelled from a tailpipe.

(q) *Speed limiting device* means a device intended to limit the maximum speed of a vehicle.

(r) *Three-wheeled youth all terrain vehicle* means a youth all terrain vehicle as defined in paragraph (a) of this section that has three wheels.

(s) *Throttle control* means a control which is located on the handlebar and is used to control engine power.

(t) *VIN* means a Vehicle Identification Number assigned as specified in 49 CFR Part 565 (2005).

(u) *Wheelbase (L)* means the longitudinal distance between the center of the front axle and the center of the rear axle.

(v) *Wheel travel* means the displacement of a reference point on the suspension (such as the wheel axle) from when the suspension is fully extended (no force applied) to when it is fully compressed.

§ 1515.3 Requirements in General.

(a) Each youth ATV shall be designed for use only by a single rider, shall meet the equipment, configuration and performance requirements specified in subpart B of this part, and shall meet the requirements for labeling, point

of sale information, instruction manuals, and instructional training specified in subpart C of this part.

(b) Each youth ATV manufacturer shall comply with the requirements of this part applicable to manufacturers. For purposes of this part, an ATV importer is an ATV manufacturer.

(c) Each youth ATV retailer shall comply with the requirements of this part applicable to such retailers.

Subpart B – Requirements for Equipment, Configuration and Performance

§ 1515.4 Equipment and configuration requirements.

(a) *Service brakes.* All youth ATVs shall have either independently-operated front and rear brakes, or front and rear brakes that are operated by a single control, or both. These brakes shall meet the requirements of § 1515.7 of this part.

(1) *Independently-operated front brakes.* Independently-operated front brakes shall be operated by a lever located on the right side of the handlebar and shall be operable without removing the hand from the handlebar.

(2) *Independently-operated rear brakes.* Independently-operated rear brakes shall be operated by either a pedal which is located near the right footrest and operable by the right foot or by a lever located on the

left side of the handlebar and operable without removing the hand from the handlebar or by both.

(3) *Simultaneously operated front and rear brakes.* Simultaneously operated front and rear brakes shall be operated by either a pedal which is located near the right footrest and operable by the right foot or by a lever located on the left side of the handlebar and operable without removing the hand from the handlebar or by both.

(b) *Parking brake.* All youth ATVs shall have a parking brake capable of holding the youth ATV stationary under prescribed conditions. The parking brake or parking mechanism shall meet the performance requirements of § 1515.8 of this part.

(c) *Mechanical suspension.* All youth ATVs shall have mechanical suspension for all wheels. Each wheel shall have a minimum wheel travel of 50 mm (2 inches). Springing and damping properties shall be provided by components other than the tire.

(d) *Engine stop switch.* All youth ATVs shall have an engine stop switch which is mounted on the left handlebar and is operable by the thumb without removing the hand from the handlebar.

(1) *Operation.* The engine stop switch shall not require the operator to hold it in the off position to stop the engine.

(2) *Color of device.* The switch-operating device shall be orange.

(e) *Throttle control.* All youth ATVs shall be equipped with a means of controlling engine power through a throttle control. The throttle control shall be located on the right side of the handlebar and shall be operable without removing the hand from the handlebar. The throttle control shall be self-closing to an idle position upon release of the operator's hand from the control.

(f) *Automatic Transmission.* All youth ATVs shall be equipped with a transmission that effects graduated gear ratios, in proper relation to speed and torque, without the active participation of the operator. It shall not be necessary for the operator to engage a clutch or choose a gear in order for the vehicle's engine to maintain its optimum speed.

(g) *Drivetrain controls.* (1) *Directional/range controls.* Controls for selecting forward, neutral, or reverse or for selecting overall transmission ranges, or for selecting the differential drive (2-wheel or 4-wheel) shall have a defined shift pattern marked for the operator.

(2) *Neutral indicator.* All youth ATVs with a neutral position shall have either a neutral indicator readily visible to the operator when seated on the ATV or a means to prevent starting of the ATV unless the transmission is in the neutral position. The indicator, if provided, shall be activated whenever the ignition system is on and the transmission is in neutral.

(3) *Reverse indicator.* All youth ATVs with a reverse position shall have a reverse indicator readily visible to the operator when the operator is seated on the ATV. The indicator shall be activated whenever the engine is running and the transmission is in reverse.

(4) *Electric start interlock.* An interlock shall be provided to prevent the youth ATV engine from being started by electric cranking unless the transmission is disengaged or the brake is applied.

(h) *Flag pole bracket.* All youth ATVs shall have a flag pole bracket at the rear of the ATV that provides a rigid mounting location for a flag pole having a 13 mm (0.5 inch) diameter mounting shaft.

(i) *Manual fuel shutoff control.* If a youth ATV is equipped with a manual fuel shutoff control, the device shall be operable as prescribed in 49 CFR § 571.123 (2005), Table 1.

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(j) *Handlebars.* The handlebar and its mounting shall present no rigid materials with an edge radius of less than 3.2 mm (0.125 inch) that may be contacted by a probe in the form of a 165 mm (6.5 inch) diameter sphere. The probe shall be introduced to the handlebar mounting area. It shall not be possible to touch any part of any edge that has a radius of less than 3.2 mm (0.125 inch) with any part of the probe. A handlebar crossbar, if provided, shall be padded.

(k) *Operator foot environment.* All youth ATVs shall have a structure or other design feature which meets the requirements of paragraphs (k)(1) through (4) of this section.

(1) *Test procedure.* Compliance shall be determined by introduction of a probe, whose end is a rigid flat plane surface 75 mm (3 inches) in diameter, in the prescribed direction to the zones as described in paragraphs (k)(2) and (3) of this section and as shown in Figures 1 and 2.

(i) *Inserting probe vertically and downward.* The probe shall be introduced end-first in a vertical and downward direction to the zone described in paragraph (k)(2) of this section and shown by the shaded portion of Figure 1. The end of the probe in its entirety shall remain within the limits of the zone. It shall not penetrate the

zone sufficiently to touch the ground when applied with a force of 445 N (100 lbf).

(ii) *Inserting probe horizontally and rearward.* The probe shall be introduced end-first in a horizontal and rearward direction to the zone described in paragraph (k)(3) of this section and shown by the shaded portion of Figure 2. The end of the probe in its entirety shall remain within the limits of the zone. It shall not penetrate the zone sufficiently to touch the rear tire when applied with a force of 90 N (20 lbf).

(2) *Boundaries of zone in Figure 1.* The zone shown in Figure 1 is defined as bounded by:

(i) The vertical projection of the rear edge of the footrest.

(ii) The vertical plane (line AA) parallel to the youth ATV's longitudinal plane of symmetry that passes through the inside edge of the footrest.

(iii) The vertical projection of the intersection of a horizontal plane passing through the top surface of the footrest and the rear fender or other structure.

(iv) The vertical plane passing through point D and tangent to the outer front surface of the rear tire.

(A) For footpegs point D is defined as the intersection of the lateral projection of the rearmost

point of the footpeg and the longitudinal projection of the outermost point of the footpeg.

(B) For footboards point D is defined as the intersection of 2 lines. The first is a line perpendicular to the vehicle longitudinal plane of symmetry and one-third of the distance from the front edge of the rear tire to the rear edge of the front tire. The second is a line parallel to the youth ATV's longitudinal plane of symmetry and one-half the distance between the inside edge of the footboard and the outside surface of the rear tire.

(3) *Boundaries of zone in Figure 2.* The zone shown in Figure 2 is defined as bounded by:

(i) The horizontal plane passing through the lowest surface of the footrest on which the operator's foot (boot) rests (plane F).

(ii) The vertical plane (line AA) parallel to the ATV's longitudinal plane of symmetry that passes through the inside edge of the footrest.

(iii) The horizontal plane 100 mm (4 inches) above plane F.

(iv) The vertical plane (line BB) parallel to the ATV's longitudinal plane of symmetry and 50 mm (2 inches) inboard of the outer surface of the rear tire.

(4) *Requirements for ATVs with non-fixed structure.* All youth ATVs equipped with a non-fixed type (for example, foldable, removable or retractable) structure intended to meet the requirements of this paragraph (k) shall be equipped with one or more of the following:

(i) A warning device (for example, a buzzer or indicator) to indicate that the structure is not in the position needed to comply with the requirements of this paragraph (k).

(ii) A device to prevent the ATV from being operated under its own power if the structure is not in the position needed to comply with the requirements of this paragraph (k).

(iii) A structure that can be folded, retracted, or removed, such that when the structure is folded, retracted, or removed, the ATV cannot be operated using the footrest in the normal manner.

(l) *Lighting Equipment.* (1) *Required equipment.* All youth ATVs shall have at least one stop lamp. The stop lamp shall be illuminated by the actuation of any service brake control. Stop lamps shall conform to Surface Vehicle Standard, Stop Lamps for Use on *Motor Vehicles Less than 2032 mm in Overall Width,* SAE J586 MAR00 or Surface Vehicle Recommended Practice, *Snowmobile Stop Lamp,* SAE J278 MAY95.

(2) *Prohibitions on certain lighting.* No youth ATV may be equipped with a projecting headlamp or forward-facing day-time running lights.

(m) *Spark Arrester.* All youth ATVs shall have a spark arrester of a type that is qualified according to the United States Department of Agriculture Forest Service Standard for Spark Arresters for Internal Combustion Engines, 5100-1 c, September 1997 or Surface Vehicle Recommended Practice, *Spark Arrester Test Procedure for Medium Size Engines*, SAE J350 JAN91.

(n) *Tire marking.* All youth ATV tires shall carry the following markings:

(1) *Inflation pressure.* Both tire sidewalls shall he marked with the operating pressure or the following statement, or an equivalent message: "SEE VEHICLE LABEL OR OWNER'S MANUAL FOR OPERATING PRESSURE." The messages required by this paragraph shall be in capital letters not less than 4 mm (0.156 inch) in height.

(2) *Bead seating pressure.* Both tire sidewalls shall be marked with the following statement, or an equivalent message: "Do Not Inflate Beyond **psi (**kPa) When Seating Bead."

(3) *Other markings.* Both tire sidewalls shall have the following information:

(i) The manufacturer's name or brand name.

(ii) On one tire sidewall, the three-digit week and year of manufacture in the form prescribed at 49 CFR § 574.5(d), fourth grouping.

(iii) The size nomenclature of the tire (for example, AT 22x10-9*) as standardized by the Tire and Rim Association, Inc. or the Japan Automobile Tire Manufacturers Association, Inc.

(iv) The word "tubeless" for a tubeless tire.

(v) The phrase "Not For Highway Use" or "Not For Highway Service."

(4) *Letter sizes.* The information required by paragraphs (n)(2) and (3) of this section shall be in letters or numerals no less than 2 mm (.078 inch) in height.

(o) *Tire pressure gauge.* All youth ATVs shall be provided with a tire pressure gauge appropriate for the recommended operating tire pressure. All youth ATVS shall have a means of carrying the tire pressure gauge.

(p) *Security.* All youth ATVs shall have a means to deter unauthorized use.

(q) *Vehicle Identification Number (VIN) or Product Identification Number (PIN).* Each youth ATV shall have prominently displayed on the ATV a unique VIN assigned by

its manufacturer in accordance with 49 CFR Part 565 (2005) or a unique PIN in accordance with *Recreation Off-Road Vehicle Product Identification Numbering System*, SAE International Consortium Standard, ICS-1000, issued 2004-9. If the ATV has a VIN number, the characters in location 4 and 5 of the number shall be "A" and "T", respectively. The VIN or PIN label shall meet the durability requirements of Underwriters Laboratories Standard UL 969, fourth edition, October 3, 1995.

(r) *Speed limiting devices.* All Pre-teen and Teen ATVs shall be equipped with a means of limiting throttle travel or other means of limiting the maximum speed attainable by the ATV to less than the ATV's maximum speed capability as determined using the test procedure of § 1515.5 of this part. The speed limiting device may be adjustable or removable or both, but shall have a means to prevent adjustment or removal without the simultaneous use of at least two different tools.

§ 1515.5 Maximum speed capability test.

(a) *Test Conditions.* Test conditions shall be as follows:

(1) ATV test weight shall be the unloaded ATV weight plus the vehicle load capacity (including test operator and

instrumentation), with any added weight secured to the seat or cargo area(s) if so equipped.

(2) Tires shall be inflated to the pressures recommended by the ATV manufacturer for the vehicle's test weight.

(3) The test surface shall be clean, dry, smooth and level concrete, or equivalent.

(b) *Test procedure.* Measure the maximum speed capability of the ATV using a radar gun or equivalent method. The test operator shall accelerate the ATV until maximum speed is reached, and shall maintain maximum speed for at least 30.5 m (100 ft). Speed measurement shall be made when the ATV has reached a stabilized maximum speed. A maximum speed test shall consist of a minimum of two measurement test runs conducted over the same track, one each in opposite directions. If more than two measurement runs are made there shall be an equal number of runs in each direction. The maximum speed capability of the ATV shall be the arithmetic average of the measurements made. A reasonable number of preliminary runs may be made prior to conducting a recorded test.

§ 1515.6 Maximum speed capability requirements.

(a) *Performance requirement for Junior ATV.* When tested in accordance with the procedures of § 1515.5 of

this part with any removable speed limiting device removed and with any adjustable speed limiting device adjusted to provide the ATV's maximum speed capability, the maximum speed capability of a Junior ATV shall not exceed 10 mph.

(b) *Performance requirements for Pre-teen youth ATV.*

(1) When tested in accordance with the procedures of § 1515.5 of this part with any removable speed limiting device removed and with any adjustable speed limiting device adjusted to provide the ATV's maximum speed capability, the maximum speed capability of a Pre-teen youth ATV shall not exceed 15 mph.

(2) When tested in accordance with the procedures of § 1515.5 of this part with the speed limiting device required by § 1515.4(r) of this part adjusted accordingly, the Pre-teen youth ATV shall accelerate to a maximum speed that does not exceed 10 mph.

(c) *Performance requirements for Teen ATV.*

(1) When tested in accordance with the procedures of § 1515.5 of this part with any removable speed limiting device removed and with any adjustable speed limiting device adjusted to provide the ATV's maximum speed capability, the maximum speed capability of a Teen ATV shall not exceed 30 mph.

(2) When tested in accordance with the procedures of § 1515.5 of this part with the speed limiting device required by § 1515.4(r) of this part adjusted accordingly, Teen ATV shall accelerate to a maximum speed that does not exceed 15 mph.

(d) *Maximum speed requirements on delivery to consumer.* (1) Each Pre-teen ATV shall be delivered to the purchaser with the speed limiting device required by § 1515.4(r) of this part adjusted so that the maximum speed of the ATV does not exceed 10 mph when tested in accordance with § 1515.5 of this part.

(2) Each Teen ATV shall be delivered to the purchaser with the speed limiting device required by § 1515.4(r) of this part adjusted so that the maximum speed of the ATV does not exceed 15 mph when tested in accordance with § 1515.5 of this part.

§ 1515.7 Service brake performance test.

(a) *Test conditions.* Test conditions shall be as follows.

(1) The ATV test weight shall be the unloaded vehicle weight plus the vehicle load capacity (including test operator and instrumentation) with any add weight secured to the seat or cargo area(s), if equipped.

(2) Tires shall be inflated to the pressures recommended by the ATV manufacturer for the vehicle test weight.

(3) Engine idle speed and ignition timing shall be set according to the manufacturer's recommendations.

(4) Ambient temperature shall be between 0° C (32° F) and 38° C (100° F).

(5) The test surface shall be clean, dry, smooth and level concrete, or equivalent.

(6) Any removable speed limiting devices shall be removed and any adjustable speed limiting devices shall be adjusted to provide the ATV's maximum speed capability.

(b) *Test procedure.* The test procedure shall be as follows:

(1) Measure the maximum speed capability of the ATV in accordance with § 1515.5. Determine the braking test speed (V). The braking test speed is the speed that is the multiple of 8 km/h (5 mph), which is 6 km/h (4 mph) to 13 km/h (8 mph) less than the maximum speed capability of the ATV.

(2) Burnish the front and rear brakes by making 200 stops from the braking test speed. Stops shall be made by applying front and rear service brakes simultaneously, and

braking decelerations shall be from 1.96 m/s^2 to 4.90 m/s^2 (0.2 g to 0.5 g).

(3) After burnishing, adjust the brakes according to the manufacturer's recommendation.

(4) Make six stops from the braking test speed. Stops shall be made by applying the front and rear service brakes simultaneously, and braking decelerations shall be from 1.96 m/s^2 to 4.90 m/s^2 (0.2 g to 0.5 g).

(5) Make four stops from the braking test speed, applying the front and rear service brakes. Measure the speed immediately before the service brakes are applied. Appropriate markers or instrumentation shall be used which will accurately indicate the point of brake application. Measure the stopping distance (S).

(i) Hand lever brake actuation force shall be not less than 22 N (5 lbf) and not more than 133 N (30 lbf) and foot pedal brake actuation force shall be not less than 44 N (10 lbf) and not more than 222 N (50 lbf).

(ii) The point of initial application of lever force shall be 25 mm (1.0 in.) from the end of the brake lever. The direction of lever force application shall be perpendicular to the handle grip in the plane in which the brake lever rotates. The point of application of pedal force shall be the center of the foot contact pad of the

brake pedal, and the direction of force application shall be perpendicular to the foot contact pad and in the plane in which the brake pedal rotates.

(c) *Performance requirements.*

(1) *Junior and Pre-teen ATVs.* For each Junior and each Pre-teen ATV, at least one of the four stops required by paragraph (b)(5) of this section shall comply with the relationship:

$S \leq V/5.28$	$S \leq V$
where	*where*
S = brake stopping distance (m) V = braking test speed (km/h)	S = brake stopping distance (ft) V = braking test speed (mph)

(2} Teen *ATVs.* For each Teen ATV, At least one of the four stops required by paragraph (b)(5) of this section shall have an average braking deceleration of 5.88 m/s^2 (0.6 g) or greater.

Average braking deceleration can be determined according to the following formulae*:

$a = V^2/25.92S$	$a = [(.033) \times V^2]/S$
where	*where*
a = average deceleration	a = average deceleration (g)

(m/s2) S = brake stopping distance (m) V = braking test speed (km/h)	S = brake stopping distance (ft) V = braking test speed (mph)

*Direct on-board instrumentation may be used to acquire any measurement data.

§ 1515.8 Parking brake performance test.

(a) *Test conditions*. Test conditions shall be as follows:

(1) ATV test weight shall be the unloaded ATV weight plus weight secured to the seat or cargo area(s) (if equipped), which is equal to the manufacturer's stated vehicle load capacity.

(2) Tires shall be inflated to the pressures recommended by the ATV manufacturer for the vehicle test weight.

(3) The test surface shall be clean, dry, smooth concrete or equivalent, having a 30 percent grade.

(b) *Test Procedure*. The test procedure shall be as follows:

(1) Burnish the service brakes according to the procedure specified in section 1515.7(b)(2) if service brakes are used as part of the parking brake.

(2) Adjust the parking brake according to the procedure recommended by the ATV manufacturer.

(3) Position the ATV facing downhill on the test surface, with the longitudinal axis of the ATV in the direction of the grade. Apply the parking brake and place the transmission in neutral. Leave the ATV undisturbed for 5 minutes. Repeat the test with the ATV positioned facing uphill on the test surface.

(c) *Performance requirements.* When tested according to the procedure specified in paragraph (b) of this section, the parking brake shall be capable of holding the ATV stationary on the test surface, to the limit of traction of the tires on the braked wheels, for 5 minutes in both uphill and downhill directions.

§ 1515.9 Pitch stability requirements.

(a) *Test conditions.* Test conditions shall be as follows:

(1) The ATV shall be in standard condition, without accessories. The ATV and components shall be assembled and adjusted according to the manufacturer's instructions and specifications.

(2) Tires shall be inflated to the ATV manufacturer's recommended settings for normal operation. If more than one pressure is specified, the highest value shall be used.

(3) All fluids shall be full (oil, coolant, and the like), except that fuel shall be not less than three-fourths full. ATV shall be unladen, with no rider, cargo, or accessories.

(4) Steerable wheels shall be held in the straight ahead position.

(5) Adjustable suspension components shall be set to the values specified at the point of delivery to the dealer.

(6) Suspension components shall be fixed by means of a locking procedure such that they remain in the same position and displacement as when the unladen ATV is on level ground, and in the conditions specified in paragraphs (a)(1) through (5) of this section.

(b) *Test procedure.* The test procedure shall be as follows:

(1) Calculations based on vehicle metrics:

(i) Measure and record the wheelbase (L). The measurement of this length shall be done with an accuracy of ±5 mm (±0.2 inch) or ±0.5%, whichever is greater.

(ii) Measure and record the front and rear weights, (W_f and W_r, respectively). W_f is the sum of the front tire loads; and W_r is the sum of the rear tire loads with the ATV level and in the condition specified in subsection (a) of

this section. The measurements of these weights shall be done with an accuracy of ±0.5 kg (±1.1 lb) or ±0.5%, whichever is greater.

(iii) Using the values obtained in paragraphs (b)(1)(i) and (ii) of this section, compute and record the quantity as follows:

$$L_1 = ((W_f/(W_f + W_r)) \times L$$

(iv) Measure and record the vertical height between the rear axle center and the ground (R_r). This measurement shall be done on level ground, with the ATV in the conditions specified in subsection (a) of this section, with an accuracy of ± 3 mm (±0.1 inch) or ±1.5%, whichever is greater.

(v) Measure and record the balancing angle alpha. The procedure for obtaining this value is as follows: with the ATV on a level surface, the front of the vehicle shall be rotated upward about the rear axle without setting the rear parking brake or using stops of any kind, until the ATV is balanced on the rear tires. The balancing angle alpha through which the ATV is rotated shall be measured and recorded with an accuracy of ±0.5 degrees. If an assembly protruding from the rear of the ATV, such as a carry bar or trailer hitch or hook, interferes with the ground surface, so as to not allow a balance to be reached, the vehicle

shall be placed on blocks of sufficient height to eliminate the interference.

(vi) Repeat the measurement in paragraph (b)(1)(v) of this section and determine if the two individual measurements are within 1.0 degree of each other. If they are not, repeat the measurements two more times and compute the average of the four individual measurements, and use that as the value.

(2) *Tilt table procedure.* The ATV shall be placed on a variable slope single-plane tilt table. The steerable wheels shall be straight forward. The ATV shall be positioned on the tilt table with its longitudinal center line perpendicular to the tilt axis of the table and its rear positioned downhill. The table shall be tilted until lift-off of the upper wheels(s) occurs. Measure the angle at which lift-off of the upper wheel(s) occurs. Lift-off shall have occurred when a strip of 20-gauge steel [approximately 1 mm (.039 inch) thick], 76 mm (3 inch) minimum width, can be pulled from or moved under the second uphill tire to lift with a force of 9 N (2 lb) or less.

(c) *Performance requirements.*

(1) *Computation from vehicle metrics.* Using the values obtained in paragraphs (b)(1)(iii), (b)(1)(iv), and

(b)(1)(vi) of this section, compute the pitch stability coefficient as follows:

$$K_p = (L_1 \tan \text{alpha}) / (L_1 + R_r \tan \text{alpha})$$

(2) *Computation from tilt table.* The pitch stability coefficient K_p is the tangent of the tilt table angle.

(3) *Requirement.* The pitch stability coefficient K_p calculated according to paragraph (c)(1) or (c)(2) of this section shall be at least 1.0.

Subpart C - Requirements for Labeling, Point of Sale Information and Instruction Manuals.

§ 1515.10 Labeling requirements.

(a) *General warning label.* (1) Each youth ATV shall have affixed to it a general warning label in English that meets the requirements of this section.

(2) *Content.* The general warning label shall display the safety alert symbol and the word "WARNING" in capital letters. The label shall contain the following, or substantially equivalent, statements. They may be arranged on the label to place the prohibited actions together and the required actions together.

"THIS VEHICLE CAN BE HAZARDOUS TO OPERATE. A collision or rollover can occur quickly, even during routine maneuvers such as turning and driving on hills or over obstacles, if you fail to take proper precautions."

"SEVERE INJURY OR DEATH can result if you do not follow these instructions:"

- "BEFORE YOU OPERATE THIS ATV, READ THE OWNER'S MANUAL AND ALL LABELS."
- "NEVER OPERATE THIS ATV WITHOUT PROPER INSTRUCTION. Beginners should complete a training course."
- "NEVER CARRY A PASSENGER. You increase your risk of losing control if you carry a passenger."
- "NEVER OPERATE THIS ATV ON PAVED SURFACES. You increase your risk of losing control if you operate this ATV on pavement.
- "NEVER OPERATE THIS ATV ON PUBLIC ROADS. You can collide with another vehicle if you operate this ATV on a public road."
- "ALWAYS WEAR AN APPROVED MOROTORCYCLE HELMET, eye protection, and protective clothing."
- "NEVER CONSUME ALCOHOL OR DRUGS before or while operating this ATV."
- "NEVER OPERATE THIS ATV AT EXCESSIVE SPEEDS. You increase your risk of losing control if you operate this ATV at speeds too fast for the terrain, visibility conditions, or your experience."
- "NEVER ATTEMPT WHEELIES, JUMPS, OR OTHER STUNTS."

(3) *Format.* The color scheme, typeface and formatting of the label shall be consistent with ANSI Z535.4 (American National Standard for Product Safety Signs and Labels) (2002).

(4) *Location.* This label shall be affixed to the left front fender so it is easily visible in its entirety to the operator when seated on the vehicle in the proper operating

position. If this location is not available for a particular ATV, the label shall be affixed to the right front fender so as to be easily read by the operator when seated in the ATV in the proper operating position.

(b) *Age recommendation warning label.* (1) Each youth ATV shall have affixed an age recommendation warning label in English that meets the requirements of this section.

(2) *Content.* (i) *Label for Junior ATV.* The age recommendation warning label for a Junior ATV shall display the safety alert symbol and the word "WARNING" in capital letters. The label shall contain a circle with a slash through it and the wording "UNDER 6" inside the circle. Below the circle, the label shall contain the following, or substantially equivalent, statements:

> "Operation of this ATV by children under the age of 6 increases the risk of severe injury or death.
>
> Adult supervision required for children under age 16.
>
> NEVER let children under age 6 operate this ATV."

(ii) *Label for Pre-teen ATV.* The age recommendation warning label for a Pre-teen ATV shall display the safety alert symbol and the word "WARNING" in capital letters. The label shall contain a circle with a slash through it and the wording "UNDER 9" inside the circle. Below the circle,

the label shall contain the following, or substantially equivalent, statements:

> "Operation of this ATV by children under the age of 9 increases the risk of severe injury or death.
>
> Adult supervision required for children under age 16.
>
> NEVER let children under age 9 operate this ATV."

(iii) *Label for Teen ATV.* The label age recommendation warning label for a Teen ATV shall display the safety alert symbol and the word "WARNING" in capital letters. The label shall contain a circle with a slash through it and the wording "UNDER 12" inside the circle. Below the circle, the label shall contain the following, or substantially equivalent, statements:

> "Operation of this ATV by children under the age of 12 increases the risk of severe injury or death.
>
> Adult supervision required for children under age 16.
>
> NEVER let children under age 12 operate this ATV."

(3) *Format.* The color scheme, typeface and formatting of the age recommendation label shall be consistent with ANSI Z535.4 (2002).

(4) *Location.* This label shall be affixed to the fuel tank so it is visible in its entirety to the operator when seated on the vehicle in the proper operating position. If this location is not available for a particular ATV, or, if

affixed at this location the label will not meet the durability requirement of paragraph (f) of this section, the label shall be placed on the front fender above the label required by paragraph (a) of this section so that it is visible in its entirety to the operator. If this location is not available for a particular ATV, the label shall be placed on the vehicle body immediately forward of the seat so it is visible in its entirety to the operator when seated on the vehicle in the proper operating position.

(c) *Passenger warning label.* (1) Each youth ATV shall have affixed a passenger warning label in English that meets the requirements of this section.

(2) *Content.* The passenger warning label shall display the safety alert symbol and the word "WARNING" in capital letters. The label shall contain the following, or substantially equivalent, statements:

> "Passengers can affect ATV balance and steering. The resulting loss of control can cause SEVERE INJURY or DEATH.
>
> NEVER ride as a passenger."

(3) *Format.* The color scheme, typeface and formatting of the label shall be consistent with ANSI Z535.4 (2002).

(4) *Location.* This label shall be affixed either to a flat surface of the vehicle body located to the rear of the

seat and toward the center of the vehicle, or to the rear portion of the vehicle seat itself. If neither of these locations is available for a particular vehicle, the label shall be affixed to the left rear fender or the left side of the body so as to be easily seen by a potential passenger.

(d) *Tire pressure and overload warning label(s).*

(1) Each youth ATV shall have affixed a label or labels in English that meet the requirements of this section warning against improper air pressure in the ATV's tires and against overloading. Manufacturers may affix one warning label addressing both hazards.

(2) *Content.* The label(s) shall contain the safety alert symbol and the signal word "WARNING" in capital letters. Every label warning about improper tire pressure shall contain a statement indicating the recommended tire pressure, either on the label or by reference to the owner's manual and/or the tires. Every label warning against overloading shall contain a statement indicating the maximum weight capacity for the ATV model.

(i) If a manufacturer uses separate tire pressure and overloading labels, the label to warn of tire pressure shall contain the following, or substantially equivalent, statements:

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-- "Improper tire pressure can cause loss of control. Loss of control can result in severe injury or death."

(ii) If a manufacturer uses separate tire pressure and overloading labels, the label to warn of overloading hazards shall contain the following, or substantially equivalent, statements:

-- "Overloading can cause loss of control. Loss of control can result in severe injury or death."

(iii) If a manufacturer uses one label for both tire pressure and overloading warnings, the label shall contain the following, or substantially equivalent, statements:

"Improper tire pressure or overloading can cause loss of control.

Loss of control can result in severe injury or death."

(3) *Format.* The color scheme, typeface and formatting of the label shall be consistent with ANSI Z535.4 (2002).

(4) *Location.* The label(s) shall be affixed to the left rear fender above the axle, facing outward in such a position that it (they) can be read by the operator when mounting the vehicle.

(e) *Label durability requirements.* Each label required or permitted by this section shall meet the standards for durability of Underwriters Laboratories Standard UL 969, fourth edition, October 3, 1995.

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(f) *Discretionary labels.* Labels in addition to those specified in paragraphs (a) through (d) of this section may be affixed to the vehicle provided that:

(1) The discretionary labels are consistent with ANSI Z535.4 (2002); and

(2) Discretionary labels shall be affixed to ATVs in an appropriate location that does not detract from the mandatory labels required in paragraphs (a) through (d) of this section.

§ 1515.11 Hangtag requirements.

(a) Each youth ATV shall be equipped at the point of sale with a hang tag that, at a minimum, contains in English:

(1) the contents of the general warning label described in § 1515.10(a);

(2) the statement-- "Even though a child is of the recommended age to operate a particular size ATV, not all children have the strength, skills, or judgment needed to operate an ATV safely, and parents should, therefore, supervise their child's operation of the ATV at all times"--;

(3) the statement - "This hang tag is not to be removed before sale" --; and

(4) the statement -"Check with your dealer to find out about state or local laws regarding ATV operation."

(b) Each hang tag shall be attached to the ATV in such a manner as to be conspicuous and removable only with deliberate effort.

(c) Each hang tag shall be at least 4 by 6 inches.

1515.12 Age acknowledgment.

(a) *General*. The retailer shall provide the purchaser of each youth ATV with an age acknowledgement in the form shown in figure 3.

(b) *Signature*. Prior to the sales transaction, the retailer shall require that the purchaser of the ATV sign the age acknowledgement representing that the purchaser has read and understood the age acknowledgement.

(c) *Copies/retention*. The retailer shall provide the purchaser of the ATV and the manufacturer of the ATV with a copy of the signed age acknowledgement. The retailer shall retain the signed original of the age acknowledgement for a minimum of five (5) years after the date of the purchase of the ATV to which it pertains. The manufacturer shall retain the copy of the age acknowledgement for a minimum of five (5) years after the date of the purchase of the ATV to which it pertains.

1515.13 Instructional/Owner's manual.

(a) *General.* (1) All youth ATVs shall be delivered to the purchaser with an instructional/owner's manual that meets the requirements of this section. All youth ATVs shall be equipped with a means of carrying the manual that protects it from destructive elements while allowing reasonable access.

(2) Each manual shall be in English and shall be written and designed in a manner reasonably calculated to convey information regarding safe operation and maintenance of the vehicle by persons who read such manual.

(3) Each manual shall be written in plain, simple language so as to be readily comprehended by the average seventh grader, as measured by a standard technique for assessing the readability of written materials.

(4) Information in each manual shall be presented in a meaningful sequence designed to permit readers to understand the information presented and appreciate its significance.

(5) Each manual shall be consistent with other safety messages required by this part, including those contained in warning labels, hang tags, and the safety video.

(6) Each manufacturer shall retain a copy of the manual for each model until five years after the model has

ceased to be in production. The manufacturer shall make the manual available to CPSC upon request.

(b) *Contents.* Each manual shall contain--

(1) A statement on the outside front cover that, at a minimum, alerts the reader that the manual contains important safety information which should be read carefully.

(2) A statement on the outside front cover stating the age recommendation for the particular ATV model in question.

(3) Definitions for "warning" and "caution" that are consistent with, or in any event not weaker than, the definitions for those terms contained in American National Standards Institute (ANSI) standard Z535 - 2002 along with an introductory statement alerting the reader to the significance of the safety alert symbol and the signal words.

(4) A reminder that the safety alert symbol with the word "WARNING" indicates a potential hazard that could result in serious injury or death. This reminder shall be repeated immediately preceding the table of contents, at the beginning and end of the section describing proper operating procedures, on the last page before the outside back cover (or on the inside back cover), and a total of at

least five (5) more times, appropriately spaced, within sections containing warnings.

(5) An introductory safety message emphasizing the importance of reading and understanding the manual prior to operation of the ATV, the importance of and availability of the instructional training required by § 1515.15 of this part, and the importance of the age recommendation for the particular model. This introductory message shall contain, at a minimum, the following statement:

> "Failure to follow the warnings contained in this manual can result in SERIOUS INJURY or DEATH"

(6) An introductory notice to parents emphasizing that an ATV is not a "toy," the importance of children completing the instructional training required by § 1515.15 of this part, and the importance of children understanding and following the instructions and warnings contained in the manual. This introductory statement shall also contain, at a minimum, the following statement:

> "Children differ in skills, physical abilities, and judgment. Some children may not be able to operate an ATV safely. Parents should supervise their children's use of the ATV at all times."

(7) An introductory safety section which, at a minimum, contains the following safety messages in the form shown:

"AN ATV IS NOT A TOY AND CAN BE HAZARDOUS TO OPERATE. An ATV handles differently from other vehicles including motorcycles and cars. A collision or rollover can occur quickly, even during routine maneuvers such as turning and driving on hills or over obstacles, if you fail to take proper precautions.

SEVERE INJURY OR DEATH can result if you do not follow these instructions:

- Read this manual and all labels carefully and follow the operating procedures described.
- Never operate an ATV without proper instruction. Take a training course. Contact an authorized ATV dealer to find out about the training courses near you.
- Always follow the age recommendations for this ATV.
- Never allow a child under 16 to operate an ATV without adult supervision, and never allow continued use of an ATV by a child if he or she does not have the abilities to operate it safely.
- Never carry a passenger on an ATV, unless it is a two-person ATV.
- Never operate an ATV on any paved surfaces, including sidewalks, driveways, parking lots and streets.
- Never operate an ATV on any public street, road or highway, even a dirt or gravel one.
- Never operate an ATV without wearing an approved helmet that fits properly. You should also wear eye protection (goggles or face shield), gloves, boots, long-sleeved shirt or jacket, and long pants.
- Never consume alcohol or drugs before or while operating an ATV.
- Never operate at excessive speeds. Always go at a speed that is proper for the terrain, visibility and operating conditions, and your experience.

- Never attempt wheelies, jumps, or other stunts.

- Always inspect your ATV each time you use it to make sure it is in safe operating condition. Always follow the inspection and maintenance procedures and schedules described in this manual.

- Always keep both hands on the handlebars and both feet on the footpegs of the ATV during operation.

- Always go slowly and be extra careful when operating on unfamiliar terrain. Always be alert to changing terrain conditions when operating the ATV.

- Never operate on excessively rough, slippery or loose terrain until you have learned and practiced the skills necessary to control the ATV on such terrain. Always be especially cautious on these kinds of terrain.

- Always follow proper procedures for turning as described in this manual. Practice turning at low speeds before attempting to turn at faster speeds. Do not turn at excessive speed.

- Never operate the ATV on hills too steep for the ATV or for your abilities. Practice on smaller hills before attempting larger hills.

- Always follow proper procedures for climbing hills as described in this manual. Check the terrain carefully before you start up any hill. Never climb hills with excessively slippery or loose surfaces. Shift your weight forward. Never open the throttle suddenly or make sudden gear changes. Never go over the top of any hill at high speed.

- Always follow proper procedures for going down hills and for braking on hills as described in this manual. Check the terrain carefully before you start down any hill. Shift your weight backward. Never go down a hill at high speed. Avoid going down a hill at an angle that would cause the vehicle to lean sharply to one side. Go straight down the hill where possible.

- Always follow proper procedures for crossing the side of a hill as described in this manual. Avoid hills with excessively slippery or loose surfaces. Shift your weight to the uphill side of the ATV. Never attempt to turn the ATV around on any hill until you have mastered the turning technique described in this manual on level ground. Avoid crossing the side of a steep hill if possible.

- Always use proper procedures if you stall or roll backwards when climbing a hill. To avoid stalling, use proper gear and maintain a steady speed when climbing a hill. If you stall or roll backwards, follow the special procedure for braking described in this manual. Dismount on the uphill side or to a side if pointed straight uphill. Turn the ATV around and remount, following the procedure described in this manual.

- Always check for obstacles before operating in a new area. Never attempt to operate over large obstacles, such as large rocks or fallen trees. Always follow proper procedures when operating over obstacles as described in this manual.

- Always be careful when skidding or sliding. Learn to safely control skidding or sliding by practicing at low speeds and on level, smooth terrain. On extremely slippery surfaces, such as ice, go slowly and be very cautious in order to reduce the chance of skidding or sliding out of control.

- Never operate an ATV in fast flowing water or in water deeper than that specified in this manual. Remember that wet brakes may have reduced stopping ability. Test your brakes after leaving water. If necessary, apply them several times to let friction dry the linings.

- Always be sure there are no obstacles or people behind you when you operate in reverse. When it is safe to proceed in reverse, go slowly.

- Always use the size and type tires specified in this manual. Always maintain proper tire pressure as described in this manual.

- Never modify an ATV through improper installation or use of accessories.

- Never exceed the stated load capacity for an ATV. Cargo should be properly distributed and securely attached. Reduce speed and follow instructions in the manual for carrying cargo or pulling a trailer. Allow greater distance for braking.

FOR MORE INFORMATION ABOUT ATV SAFETY, visit the CPSC website at www.cpsc.gov or call the Consumer Product Safety Commission at 1-800-638-2772, or [**insert contact number for manufacturer**]."

(8) An appropriate table of contents identifying the major portions of the manual.

(9) Descriptions of the location of warning labels on the ATV and an introductory statement emphasizing the importance of understanding and following the labels and the importance of keeping the labels on the ATV. The introductory statement shall also contain instructions on how to obtain a replacement label in the event any label becomes difficult to read. These instructions shall include a toll-free telephone number that can be called to obtain a replacement label.

(10) A toll-free telephone number, or other no cost means, for the owner of the ATV to contact the manufacturer to report safety issues and/or seek information on the proper, safe operation of the ATV.

(11) A description of pre-operating inspection procedures and a statement emphasizing the importance of these procedures.

(12) A description of proper operating procedures and of potential hazards associated with improper operation of the ATV. The section of each manual devoted to describing proper operating procedures shall include material addressing in narrative text form and in appropriate detail all of the topics addressed in paragraph (b)(7) of this section. Such narrative text shall identify particular potential hazards associated with the types of operation or behavior in question, the possible consequences of such operation or behavior, and shall describe the manner in which the vehicle should be properly operated to avoid or reduce the risk associated with such hazards. Such narrative text shall include warning statements and corresponding illustrations in conformance with the requirements of this section. The language of the narrative sections accompanying each warning shall not contradict any information contained in the warning section and shall be written to draw attention to the warning.

(13) Descriptions of proper maintenance, storage, and transportation procedures.

(14) On the outside back cover, the contents of the general warning label required by § 1515.10(a) of this part.

§ 1515.13 Safety video.

(a) *General.* The retailer shall provide the purchaser with a safety video at or before the completion of the purchase transaction. The safety video shall be designed to communicate to an audience consisting of prospective purchasers and users, including children between the ages of 9 and 16, and their parents.

(b) *Title.* The title of the safety video shall indicate that the video provides safety information concerning ATV operation.

(c) *Content.* The safety video shall communicate the following:

(1) the contents of the hang tag described in § 1515.11 of this part;

(2) the concept that a person operating an ATV should know his or her limitations and not attempt to perform any maneuver or traverse any terrain if performing the maneuver or operating on the terrain is beyond that person's capabilities and experience;

(3) the importance of practicing and gradually progressing from basic to more complex maneuvers; and

(4) The importance of keeping alert at all times and the concept that even a brief distraction can lead to loss of control resulting in a severe or fatal accident.

(d) *Dramatization.* All dramatizations designed to communicate any of the concepts set forth in the preceding subsection shall be unambiguous. To avoid ambiguity and ensure clarity, dramatizations shall:

(1) In the case of dramatizations that show an accident occurring, averted, or about to occur, the video shall contain no intervening events that detract from communication of the hazard (for example, the presence of an obstacle on a paved surface when communicating the hazard of operating on a paved surface, or a person running in front of an ATV when communicating the hazard of carrying passengers on a youth ATV or a single rider adult ATV); and

(2) in the case of dramatizations that show either the conduct, terrain, or maneuvers that a person should avoid, or the conduct that a person should observe, the video shall also unequivocally state the relevant safety message, either verbally by means of lines spoken by a screen character or narrator, in written form, or both.

(e) *Format.* The safety video shall be made available in at least one commonly used format, e.g., VHS or DVD, and

the purchaser shall be given the option at no cost of procuring the safety video in at least one format other than the one originally supplied with the ATV at the time of purchase.

(f) *Retention*. The manufacturer shall retain a copy of the safety video until five years after the model to which applies ceases to be in production. The manufacturer shall make the video available to CPSC upon request.

1515.15 Instructional training.

(a) *General*. The manufacturer shall provide to the purchaser at no charge a training course for the purchaser and each member of the purchaser's immediate family who meets or exceeds the minimum age recommendation for the ATV in question. The training course shall be provided in the form of one certificate valid for the purchaser and each qualifying member of the purchaser's immediate family redeemable at no cost for attendance at a training course meeting the requirements of this section.

(b) *Form of certificate*. Each certificate shall identify the VIN or PIN number and category of ATV (i.e. Junior, Pre-teen, or Teen) to which it pertains and shall have no expiration date. In addition the certificate shall include a toll-free telephone number or other readily

useable means for the purchaser to contact the training organization to arrange for training.

(c) *Retailer responsibility.* The retailer shall provide the certificate to the purchaser at the time of purchase and shall obtain the purchaser's signature on the training availability form shown in Figure 4. The retailer shall retain the signed original of the training availability form and shall provide the purchaser and the manufacturer of the ATV with a copy.

(d) *Course content.* The training curriculum shall, at a minimum, address the following:

(1) The risks of ATV-related deaths and injuries (risk awareness).

(2) The role of safety equipment, including identifying suitable equipment, properly using equipment, and understanding why it is used.

(3) Rider responsibilities, including:

(i) why children/youths should not ride adult ATVs;

(ii) why all ATV users should take a hands-on safety training course;

(iii) why one should never ride a youth ATV or non-tandem adult ATV with a passenger or as a passenger;

(iv) why one should never drive an ATV on paved roads;

(v) why one should always wear a helmet and other protective gear while on an ATV; and

(vi) why one should never drive an ATV while under the influence of alcohol or drugs.

(4) identifying displays and controls;

(5) recognizing limitations, including inclines and rider abilities;

(6) evaluating a variety of situations to predict proper course of action, including terrain obstacles and behavior of other riders;

(7) demonstrating successful learning of riding skills, including:

i) starting and stopping;

ii) negotiating turns, including gradual, sharp, and quick turns, weaving, and evasive maneuvers;

iii) Stopping in a turn;

iv) Emergency braking while straight and while turning.

(v) negotiating full track and partial track obstacles.

(vi) negotiating hills, including ascending, descending, traversing, and emergency situations; and

(vii) combining skills together in a non-predictable manner (i.e. trail ride or free riding period with instructor supervision and critique).

(e) *Course structure.* The course shall include classroom, field, and trail activities.

(f) *Course duration.* The course duration shall be sufficient to cover the topics noted in this section and allow for each student to individually master the riding skills addressed in the course at the level commensurate with the terrain at the location of the course, and allow for written and riding skills tests.

Subpart D - Certification/testing/recordkeeping

§ 1515.16 Certification.

(a) At the location of the VIN or PIN number, the following statement shall be made: "The manufacturer certifies that this ATV complies with all applicable requirements of 16 C.F.R. Part 1515."

(b) The VIN or PIN number and compliance statement shall meet the durability requirements of Underwriters Laboratories Standard UL 969, fourth edition, October 3, 1995.

§ 1515.17 Testing. Each manufacturer of ATVs subject to this part shall perform or cause to be performed testing sufficient to demonstrate on an objectively reasonable

basis that each ATV produced by that manufacturer meets the performance requirements of §§ 1515.4 through 1515.9 of this part.

§ 1515.18 Recordkeeping.

(a) *Manufacturer requirements.* Each manufacturer (the importer is considered a manufacturer for purposes of this part) of ATVs subject to this part shall:

(1) maintain records in English sufficient to demonstrate that each ATV produced by that manufacturer complies with the requirements of this part;

(2) unless otherwise specified, retain records required by this part for a period of at least five (5) years after production of the model of ATV to which the records pertain ceases;

(3) maintain records required by this part at a location in the United States; and

(4) make records required by this part available for inspection at the request of a duly authorized representative of the U.S. Consumer Product Safety Commission.

(b) *Retailer Requirements.* Each retailer of ATVs subject to this part shall:

(1) maintain the original of each age acknowledgement required by § 1515.12 of this part and each acknowledgement

of training availability required by § 1515.15 of this part for a period of at least five (5) years after the date of purchase of the ATV to which the acknowledgements pertain;

(2) maintain records required by this section at a location in the United States; and

(3) make records required by this section available for inspection at the request of a properly authorized representative of the U.S. Consumer Product Safety Commission.

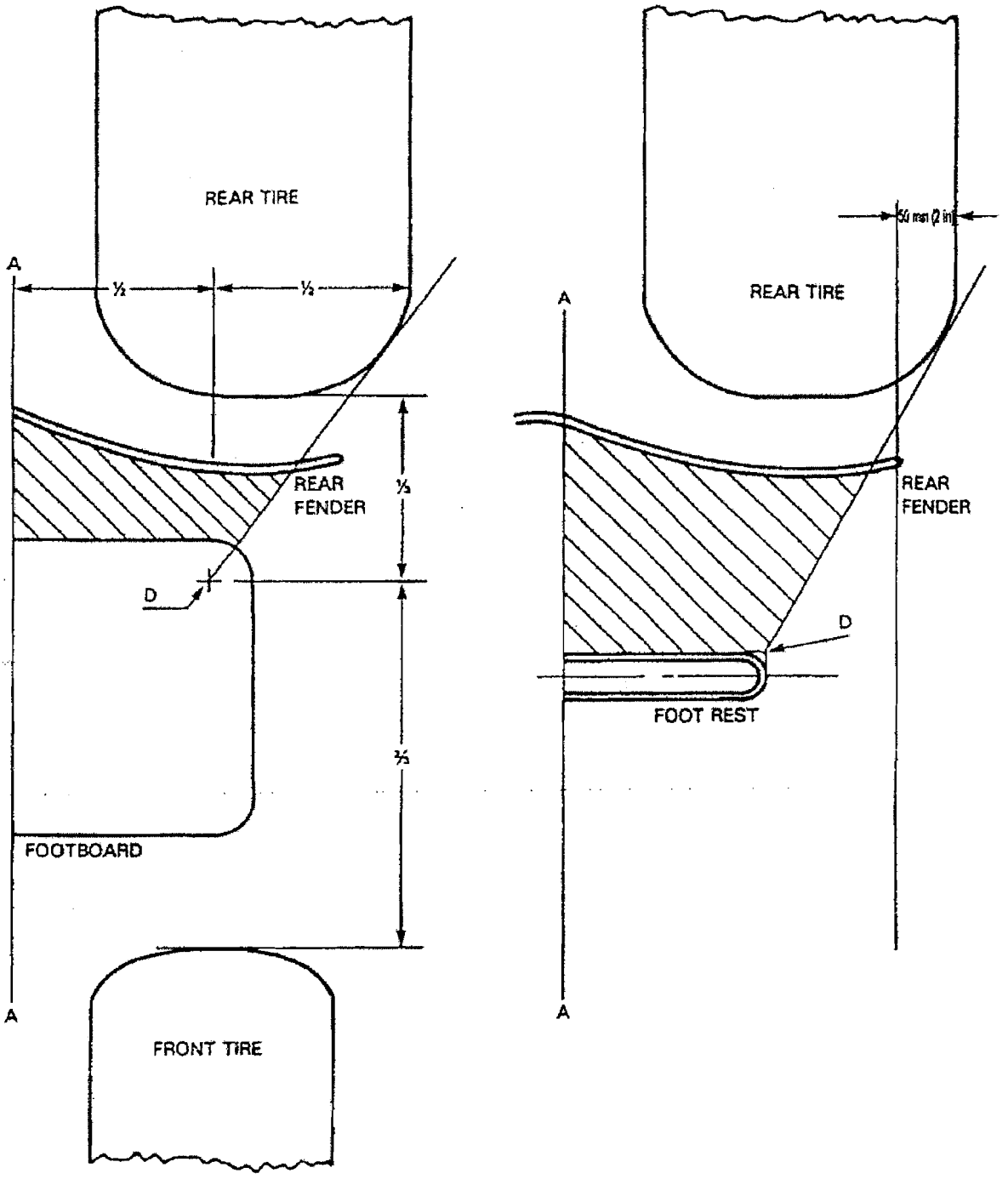

Figure 1
Operator Foot Environment - Plan View

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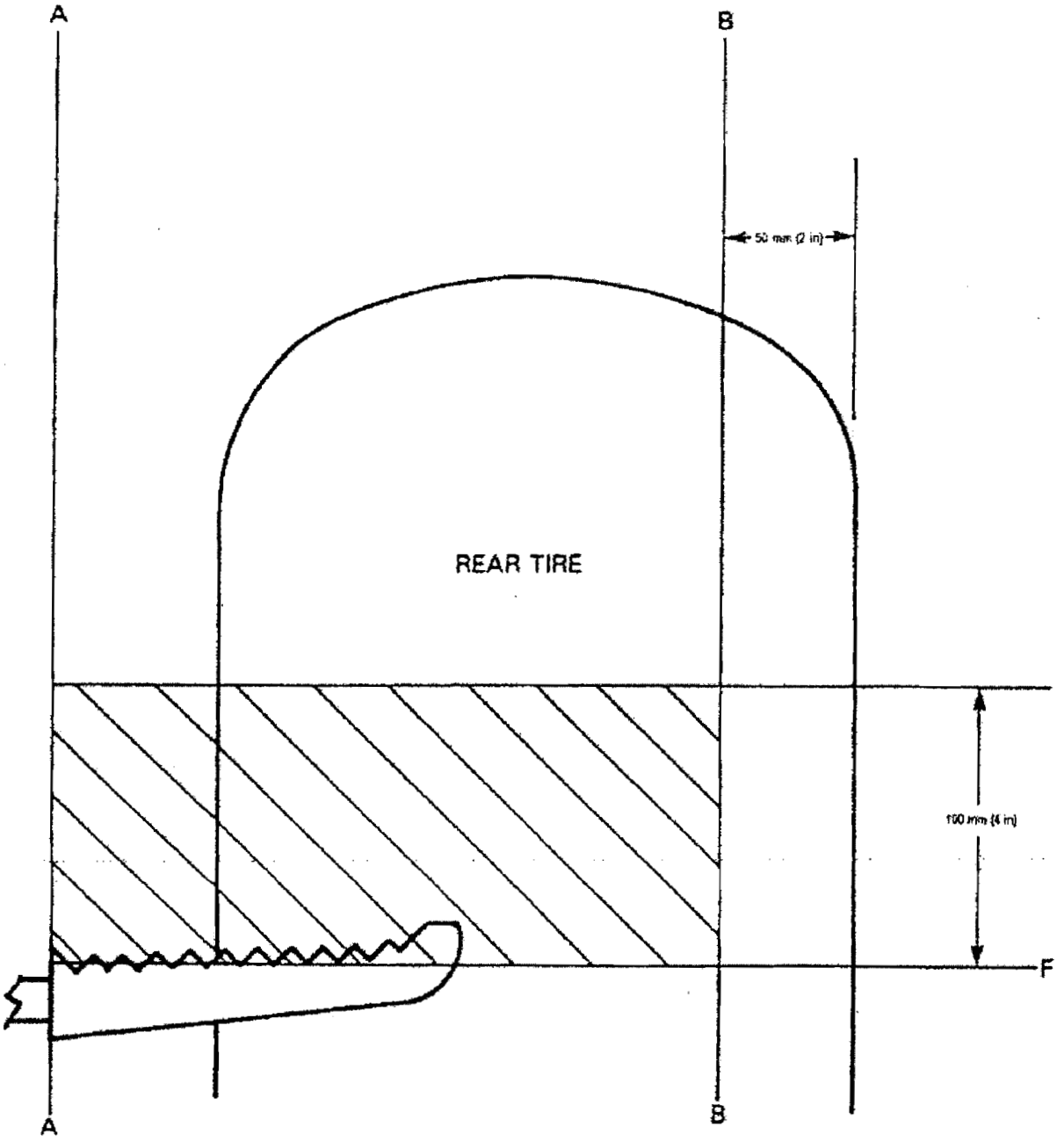

Figure 2
Operator Foot Environment - Front View

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The ATV you are considering is for youth drivers

Not all children develop at the same rate. Kids and teens have immature judgment, tend to take risks, disregard consequences, and bow to peer pressure – even if they have been riding ATVs for a long time.

1. Select an ATV for your child or teen that fits him or her both physically and mentally.

2. Use the speed limiter to allow the child or teen to develop skills at a controlled pace.

3. **ALWAYS** supervise your child or teen.

ATV models and their intended ages

ATV Model	Age (years)	Speed Range
Junior	6+	10 mph or less
Pre-teen	9+	10-15 mph
Teen	12+	15-30 mph
Adult	16+	Not restricted

I have read the information above and
understand that the ATV I am about to buy is a

junior / pre-teen / teen model
(circle one)

intended for children ages _____ and older.

I also understand that other ATVs are available for children of different ages.

_____

Purchaser Signature Date (mm/dd/yyyy)

_____

Full name (please print)

TO BE COMPLETED BY DEALER

This form must be kept on file for 5 years and may be periodically reviewed by officials of the U.S. Consumer Product Safety Commission to ensure that ATV purchasers have been given this information.

_____

Vehicle VIN/PIN

FIGURE 3 Age Acknowledgment form

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(DRAFT OF 5/30/06)

ATV Training

ATVs are complex motor vehicles requiring skill to drive, and new ATV drivers[1] have the highest risk of injury. ATVs don't handle as you might expect - they don't behave like a dirt bike, motorcycle, or car.

The best way to become familiar with your ATV and learn about its special handling is to take an ATV training class.

FREE ATV training is available for you and your household when you purchase an ATV.

You wouldn't drive a car without having someone show you how to handle it. Come to a training class and learn how to drive your ATV!

I have read the information above and have been given a certificate that is good for one free training course for me and each member of my immediate household whom the ATV is age-appropriate.

_____

Purchaser Signature Date (mm/dd/yyyy)

_____

Full name (please print)

TO BE COMPLETED BY DEALER

This form must be kept on file for 5 years and may be periodically reviewed by officials of the U.S. Consumer Product Safety Commission to ensure that ATV purchasers have been given this information.

_____

Vehicle VIN/PIN

[1] Those with less than one year of experience compared to those with multiple years of experience.

Figure 4 Training Acknowledgment form 350

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UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
WASHINGTON, DC 20207

Memorandum

Date: May 23, 2006

TO : Elizabeth Leland, Project Manager, ATV Safety Review Team

THROUGH: Hugh M. McLaurin, Associate Executive Director, Directorate for Engineering Sciences
Mark Kumagai, Director, Division of Mechanical Engineering

FROM : Caroleene Paul, Division of Mechanical Engineering

SUBJECT : Draft Proposed Requirements for All-Terrain Vehicles (ATVs)

Introduction

This memo summarizes the requirements and rationale in the current voluntary standard for ATVs, ANSI/SVIA 1-2001 *The American National Standard for Four Wheel All-Terrain Vehicles -- Equipment, Configuration, and Performance Requirements*. This memo also outlines the portions of the standard that Engineering Sciences (ES) staff believes should be incorporated in a mandatory rule, and additional future work recommended by ES staff.

Voluntary Standards

Four-Wheel ATVs

The ANSI voluntary standard for all-terrain vehicles (ATVs), ANSI/SVIA-1 *The American National Standard for Four Wheel All-Terrain Vehicles -- Equipment, Configuration, and Performance Requirements*, was first published in 1990. The standard was developed by members of the Specialty Vehicle Institute of America (SVIA) and Polaris Industries in fulfillment of one of the requirements of the Final Consent Decrees settled in United States v. American Honda Motor Co., et al. and United States v. Polaris Industries, L. P. In 2001, ANSI/SVIA-1 was revised to include requirements for electromagnetic compatibility and sound level limits.

In January 2004, the International 2-Up ATV Manufacturers Association (I2AMA) filed procedures with the American National Standards Institute (ANSI) for the organization, development, and operation of I2AMA standards. A draft standard for tandem, 2-Up ATVs was developed and distributed for review in May 2004. The draft standard underwent two revisions, and the last version provided to ES staff for comment was in March 2005. The draft standard was similar to ANSI/SVIA-1-2001 with the exception of passenger and weight requirement differences due to the vehicle's design for two people and the inclusion of a lateral stability requirement. In addition, the tandem draft standard included provisions on labeling, operator training information, and owner's/operator's manual content. Additional draft changes have been provided by letter from the SVIA of May 19, 2006.

In September 2005, SVIA initiated a process to review/revise ANSI/SVIA-1 in accordance with ANSI's 5 year periodic maintenance process. A Technical Advisory Panel (TAP), with technical representatives from each member manufacturer, has held monthly meetings in support of the review effort. In January 2006, SVIA informed CPSC staff that I2AMA has agreed to suspend its efforts to develop a tandem ATV voluntary standard and will instead collaborate with SVIA to include tandem ATVs in the current voluntary standard for ATVs.

Three-Wheel ATVs

A voluntary standard for 3-wheel ATVs was never developed. The risk of injury on a 3-wheel ATV is approximately 3.1 times that of a 4-wheel ATV (Rodgers and Adler, 2001). In addition, 3-wheel ATVs are less stable than 4-wheel ATVs, and require far more active rider input to steer properly (Deppa, 1986). While there are many technical factors that make a 4-wheel ATV more dynamically stable than a 3-wheel ATV, one of the largest factors is the fourth wheel. Given the inherent difference in vehicle configuration, ES staff does not believe it is feasible to develop a performance standard for 3-wheel ATVs that would improve that vehicle's stability performance to that of a 4-wheel vehicle.

Review of the Current Voluntary Standard ANSI/SVIA-1-2001

Scope/Definition

The voluntary standard has requirements for equipment, configuration, and performance of four wheel ATVs. An ATV is defined as a vehicle designed to travel on four low pressure tires, having a seat designed to be straddled by the operator, having handlebars for steering control, and intended for use by a single operator. The standard subdivides ATVs into four categories:

1) Category G (General Use) -- for general recreational and utility use
2) Category S (Sport) -- for recreational use by experienced operators
3) Category U (Utility) -- intended primarily for utility use
4) Category Y (Youth) -- intended for operators under age 16
   (a) Y-6 ATV -- for children age 6 and older
   (b) Y-12 ATV -- for children age 12 and older

Although the standard does not use engine size to define any category of ATV, the Final Consent Decrees differentiated between adult and youth ATVs by engine sizes greater than 90cc (adult-size ATV) and engine sizes 90cc or less (youth-size ATV). At the time the Final Consent Decrees were settled, ATV engine sizes typically ranged from 90cc to 250cc, and an engine size of 400cc was considered extreme. In the current market, an ATV with an engine size of 400cc is considered mid-range, and high performance ATVs typically have engine sizes of 600cc or higher.

General ATV Requirements

The configuration requirements in ANSI/SVIA-1-2001 cover service and parking brakes, mechanical suspension, clutch and gearshift controls, engine and fuel cutoff devices, throttle controls, lighting, tires, operator foot environment, electromagnetic compatibility, and sound level limits. Vehicle performance requirements are specified for service and parking brake

operation, pitch stability and, for youth ATVs, requirements for maximum speed capability and for speed limiting devices.

The general configuration requirements are intended to standardize location, color scheme, and method of operation of the main controls of an ATV. The basic control configuration was adopted from common practices for standard off-road motorcycles and/or snowmobiles (the two vehicles that are most similar to ATVs). Standard control configuration, gear indicators, and an electric start interlock are all intended to ensure consistency across vehicles so that the operator is familiar with the controls of an ATV regardless of vehicle manufacturer.

Youth ATV Requirements

Other than a description of the age range for which a youth ATV is intended (children age 6 and older for Y-6 and children age 12 and older for Y-12), the only requirements that distinguish a youth ATV from an adult ATV are speed limiting capabilities, maximum speed capabilities, and brake stopping distance.

The following table summarizes the requirements for each category ATV:

Category	Age range (years)	Speed Limit Capability	Maximum Unrestricted Speed	Brake Stopping Distance (feet)
Y-6	6 and older	10 mph	15 mph	less than or equal to value based on braking test speed
Y-12	12 and older	15 mph	30 mph	constant multiplied by square of braking test speed
G, S, and U	16 and older	none required	none required	constant multiplied by square of braking test speed

Section 6.1 Speed Limiting Devices

All Category Y ATVs must have a means of limiting the speed of the ATV, and the speed limiting device must require the simultaneous use of two different tools for adjustment or removal. Current youth ATVs meet this requirement by limiting the throttle lever travel with a set screw and lock nut.

Section 7 Service Brake Performance

Adult ATVs and Category Y-12 ATVs must exhibit at least one stop that demonstrates an average braking deceleration of 0.6g or greater. Category Y-6 ATVs must exhibit at least one stopping distance that is equivalent to a value based on the braking test speed.

Items/Sections Not Included in Voluntary Standard

The following items were covered by the Consent Decrees and remain in voluntary effect with companies that have made agreements through Voluntary Action Plans (also known as Letters of Undertaking or LOUs) with the Commission:

- Age Recommendations
- Warning Labels
- Safety Information In Owner's Manuals
- Hangtags
- Safety Alerts
- Safety Videos
- Advertising and Promotional Materials
- Training

Adequacy of Current Voluntary Standard ANSI/SVIA-1-2001

ES staff believes the provisions of the voluntary standard should be considered as the minimum requirements that reflect manufacturing practices by the companies that currently represent the majority of the U.S. ATV market. Prior to the development of the voluntary standard, some ATVs were still manufactured with 3 wheels, without mechanical suspension, and without front and rear brakes. Since then, adherence to the requirements in the voluntary standard has resulted in uniform production of 4-wheel ATVs with standardized gearing and controls, mechanical suspension, consistent brake performance and configurations, and restricted speed limits for youth ATVs. Adherence to the Consent Decrees and LOUs has resulted in consistent warning labels and widespread opportunity for ATV purchasers to take an accredited training course.

Recently, companies with no formal agreements with the CPSC have increased their sales of ATVs to the U.S. market. Some of these vehicles do not appear to meet current voluntary standard requirements on headlamp restrictions for youth ATVs, and overall it is not known whether new entry vehicles conform to all requirements in the voluntary standard. These vehicles also do not meet the labeling and training requirements in the LOUs. Evidence of non-conformance of new entry vehicles to the requirements in the voluntary standard and the LOUs supports adoption of that standard as well as elements of the LOUs into a mandatory rule.

ES staff proposes the following requirements for a minimum or baseline safety standard. ATVs that meet these requirements should perform similarly to ATVs that meet the current ANSI voluntary standard and the requirements of the LOUs. The requirements in the staff's draft proposed rule reflect components from the current voluntary standard for single-person ATVs and the draft standard for tandem ATVs (including additional draft information provided by letter from the SVIA of May 19, 2006), as well as new requirements developed by ES staff.

Summary of Staff's Draft Proposed Requirements

Scope

The draft proposed requirements apply to both single-person (which includes youth and adult categories) and tandem ATVs. Tandem ATVs are designed to carry one passenger, and it is necessary to make this distinction.

Definitions

A single-person ATV is defined as any motorized off-highway vehicle designed to travel on four low pressure tires, having a seat designed to be straddled by the operator and handlebars for steering, and intended for use by a single operator and no passenger.

A tandem ATV is defined as an ATV having a seat designed to be straddled by the operator and handlebar for steering, and a seating position behind the operator seat designed to be straddled by no more than one passenger, who is at least 12 years of age.

A youth ATV is defined as a single-person ATV intended for use by children under 16 years of age. There are three categories of youth ATVs:

1. Junior ATV – youth ATV intended for use by an operator at least 6 years of age
2. Pre-Teen ATV – youth ATV intended for use by an operator at least 9 years of age
3. Teen ATV – youth ATV intended for use by an operator at least 12 years of age

Vehicle Equipment and Configuration

Draft proposed requirements for vehicle service brakes, parking brakes, and suspension ensure minimum vehicle capabilities that allow the user to control the vehicle. Where applicable the performance requirements allow for differing test conditions for tandem ATVs and youth ATVs.

Draft proposed configuration requirements for vehicle controls, indicators, and gearing ensure the standardized instrumentation and safety features of current ATVs. It is important that the location and method of operation of safety related controls, such as brake controls and engine stop switch, be standardized to reduce operator confusion. The specified requirements are consistent with current ATV practice which is based on the National Highway Traffic Safety Administration requirements for motorcycle control location and operation requirements [49 CFR§571.123 (2005)].

Draft proposed requirements for tire pressure information and indicators, owner's/operator's manuals, and vehicle identification numbers (VINs) ensure minimum provision of information to enable operators to safely maintain the vehicle.

Operator Foot Environment

Draft proposed performance requirements for operator foot environment ensure adequate vehicle configuration that reduces the possibility of inadvertent contact between the operator's (and on tandem ATVs, passenger's) foot and the ground or the vehicle's rear wheels. Operator foot contact with the ground or the vehicle's rear wheels has been an identified hazard pattern among ATV related injuries.

Differing zones are defined for ATVs equipped with footpegs (designed to support the operator's foot with a relatively narrow bar), and footboards (designed to support the operator's foot with a platform-type structure). Similar zones are defined for tandem ATVs.

Lighting Equipment

Draft proposed lighting requirements mandate headlamps, tail lamps, and stop lamps on all adult ATVs. References for headlamp, tail lamp and stop lamp conformance have been adopted from the voluntary standard. Nighttime riding can be expected with adult ATVs and requirements for industry standard headlamps ensure minimum illumination for nighttime operation of the vehicle.

Draft proposed lighting requirements specifically prohibit projecting headlamps or forward facing daytime running lights (DRLs) on youth ATVs. This requirement is intended to discourage nighttime use of youth ATVs. In addition, adult supervision of youth riders is necessary and would be difficult in nighttime conditions. It is recognized that DRLs can provide conspicuity and their use is not prohibited except in situations where they could be misconstrued as a headlamp. Stop lamps provide conspicuity during braking and are required on youth ATVs.

Maximum Speed Capability Measurement

Draft proposed procedures are outlined for the measurement of a loaded vehicle's maximum speed. The vehicle load is dependent on the vehicle type (youth, adult single-person, or tandem). The maximum speed is used to determine the brake test speed for most vehicles, and is used to determine compliance with youth ATV speed restrictions.

Service and Parking Brake Performance

Draft proposed requirements for service and parking brakes are adopted from the current voluntary standard. The requirements specify a braking deceleration of $5.88 m/s^2$ (0.6g) or greater for service brakes and brake holding power up to a 30 percent grade for parking brakes.

These draft proposed requirements establish minimum brake performance to ensure that brake systems are adequate for stopping the vehicle and holding the vehicle on an incline. The specified requirements are consistent with current voluntary standard requirements which are patterned after those in the Federal Motor Vehicle Safety Standard No. 122 *Motorcycle Brake Systems* [49 CFR§571.122 (2005)].

The draft proposed requirements deviate from the current voluntary standard requirements in terms of the vehicle test weight used to perform service brake tests. The current voluntary standard specifies the test weight as the unloaded vehicle weight plus 91 kg (200 lb) if the vehicle load capacity is specified as 91 kg (200 lb) or more. The draft proposed requirements specify the test weight as the unloaded vehicle weight plus the vehicle load capacity, no matter the specified load capacity. This will ensure that larger vehicles with larger load capacities do not have a less stringent brake requirement (by using a comparatively lower test weight during brake tests).

Given the braking technology available on the current market of ATVs, ES staff does not anticipate problems with conformance to the draft proposed brake performance requirements.

Pitch Stability

The draft proposed requirements are based on the current voluntary standard for single-person ATVs and the draft standard for tandem ATVs. As such, the pitch stability for single-person ATVs is based on the longitudinal tilt angle of a vehicle *without* an operator while the pitch stability for tandem ATVs is based on the tilt angle of a vehicle *with* an operator and passenger (simulated loads).

A vehicle's longitudinal tilt angle can be calculated by measuring the vehicle's front and rear weights and balancing angle (angle at which vehicle is balanced on its rear wheels) or it can be

measured on a tilt table. The current voluntary standard for single-person ATVs requires calculation of a vehicle's longitudinal pitch angle which must be 45 degrees or higher to meet the pitch stability requirement. The draft proposed requirements adopt this test procedure and minimum tilt angle for single-person ATVs, and add a tilt table option to address larger ATVs whose weights could make it unsafe to follow the voluntary standard procedures for measuring and calculating the pitch stability.

The draft proposed requirements for tandem ATVs adopt the tilt table method and minimum tilt angle specified in the draft standard for tandem ATVs. A tandem ATV with simulated operator and passenger weights must reach a minimum of 36 degrees in the longitudinal direction on a tilt table before lift-off of both uppermost tires occurs. Lift-off of a tire occurs when a strip of 20-gauge steel can be pulled from underneath the tire with a force of 9 N (2 lbf) or less.

The draft proposed pitch stability requirements deviate from the voluntary standard for single-person ATVs and draft standard for tandem ATVs in terms of the test conditions of the vehicle. The current voluntary standard specifies that the vehicle tires be inflated to the ATV manufacturer's lowest recommended pressure. The draft proposed requirements specify that the tires be inflated to the ATV manufacturer's highest recommended pressure. This will ensure that the vehicle configuration with the highest expected center of gravity will be tested.

Youth ATVs

The draft proposed requirements for ATVs intended for children under 16 years of age include the following:

- maximum unrestricted speed of 10 mph for vehicles intended for children 6 and older, 15 mph or less for vehicles intended for children 9 and older, and 30 mph or less for vehicles intended for children 12 and older
- a device to limit the speed to 10 mph or less for vehicles intended for children 9 and older and 15 mph or less for vehicles intended for children 12 and older
- requirement that the simultaneous use of at least two different tools be required to adjust or remove the speed limiting device
- delivery of youth ATVs to the purchaser with the speed limiting device adjusted to limit maximum speed to the lowest setting specified for each category of youth ATV
- transmission that maintains optimum speed in relation to torque without the active participation of the operator, such as engaging a clutch or choosing gears
- prohibition against projecting headlamps or forward facing DRLs to discourage nighttime use of ATVs by youths
- mandatory stop lamps for increased conspicuity during braking

Category	Age range (years)	Speed Limit Capability	Maximum Unrestricted Speed	Brake Stopping Distance (feet)
Junior	6 and older	NA	10 mph	less than or equal to value based on braking test speed
Pre-Teen	9 and older	10 mph	15 mph	less than or equal to value based on braking test speed
Teen	12 and older	15 mph	30 mph	constant multiplied by square of braking test speed

These requirements specifically do not restrict engine displacement for youth ATVs. As such, the requirements allow for ATVs of various sizes as long as they meet the speed, speed limiting, and transmission specifications. This allows for the development of age/size appropriate vehicles that address anthropometric incompatibility with oversized youths on current sized youth ATVs (Johnson 2006). Such a vehicle could also serve as a training/transition vehicle for inexperienced adults.

Tandem ATVs

The draft proposed requirements for tandem ATVs are based on the March 2005 draft standard developed by I2AMA and additional information provided by letter from the SVIA of May 19, 2006. The provisions specific to a vehicle designed to carry a passenger include:

- foot environment that protects rider and passenger feet from contact with the ground or rear wheel of the vehicle
- passenger environment requirements specifying backrest and hand holds for passenger safety
- speed tests conducted with additional passenger weight
- service brake tests conducted with additional passenger weight
- parking brake tests conducted with additional passenger weight
- pitch stability requirements based on vehicle with operator and passenger weight

Areas for Improvement to Standards for All-Terrain Vehicles

Based on the 1997 and 2001 ATV injury studies and follow-up analysis by ES staff, vehicle stability continues to be a major factor in ATV-related deaths and injuries (Kyle and Adler 1998, Levenson 2003). An ATV is designed to be straddled by the rider, and rider weight shift is required when executing turns and navigating steep inclines. This dependence on active rider input makes it difficult to assess vehicle performance based solely on the vehicle's characteristics. Nevertheless, a desirable approach for designers would be to decrease the requirement for weight shift as an input and at the same time lessen the sensitivity of the vehicle to external inputs. By reducing the complexity of demands on the operator, this approach could provide an incremental margin of safety to the majority of ATV users.

The current voluntary standard has a vehicle pitch stability requirement but does not have a lateral stability requirement. The challenge of establishing some type of standard to rate dynamic vehicle stability and specify minimum performance requirements is far from simple. A comprehensive effort would be required to develop comparative information on the broad market of ATVs, to correlate vehicle performance characteristics to design characteristics, and to define test procedures with meaningful pass/fail criteria that are consistent and repeatable. A major effort by both the Commission and the industry was made during the development of the voluntary standard, and the publication of the first voluntary standard was a testament to that cooperative achievement. Nevertheless, while great efforts were made to address the very complicated issue of vehicle stability, time constraints mandated by the Consent Decrees necessitated compromises on those requirements.

ES staff believe the voluntary standards process can provide a forum for alliances between private sector entities and government agencies to address vehicle stability issues, with an end

goal of developing meaningful test criteria. Current dynamic vehicle analysis technology is more advanced than it was at the time of the Consent Decrees, and coordinated government and private sector efforts could foster consensus test development while sharing the major cost burdens. ES staff believes the most effective way to support work to address any ATV issue is through close, ongoing, interaction with the appropriate voluntary standards committees.

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UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
WASHINGTON, DC 20207

Memorandum

Date: May 23, 2006

TO : Elizabeth Leland, Project Manager ATV Team

THROUGH : Hugh McLaurin, Associate Executive Director
Directorate for Engineering Sciences
Robert B. Ochsman, Director
Division of Human Factors

FROM : Hope E. Johnson, Engineering Psychologist
Division of Human Factors
Directorate for Engineering Sciences

SUBJECT : ATV Age Guidelines

Introduction

It has long been the position of Consumer Product Safety Commission (CPSC) staff that children under the age of 16 do not possess the developmental skills to safely ride adult all-terrain vehicles (ATVs), which can weigh up to 850 pounds and reach speeds of upwards of 60 miles per hour (mph). Recent CPSC staff studies have shown that many children are riding adult ATVs, and that the injury rates are climbing (Levenson, 2003). The majority of child developmental information presented to the Commission in 1986[1] remains reasonably consistent with current research on the topic. Public comments on Petition CP-02-4/HP-02-1 in 2003 and the October 2005 ANPR suggest that one reason youth ride adult ATVs is the lack of properly fitting youth ATVs. This memorandum addresses the issues involved in determining appropriate ATV performance characteristics for various ages of youth riders and suggests three categories for youth ATV models based on cognitive and physical developmental characteristics.

Age guidelines in use today

CPSC

The CPSC age/size guidelines were established by the Consent Decrees and have continued under the Letters of Undertaking with seven major ATV distributors. These state that the companies will "represent affirmatively ... that ATVs with engine sizes of 70 cubic centimeter displacement ('cc') up to and including 90 cc should be used only by those ages 12 and older," (*U.S...*, 1988a, p. 6; *U.S...*, 1988b, p. 7). 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.

ANSI

The American National Standards Institute Inc. (ANSI) voluntary standard for ATVs requires that Y-6 ATVs (intended for ages 6-11) have devices to limit the speed to at least 10 mph and allow upward adjustment to a maximum unrestricted speed of 15 mph. Y-12 ATVs (intended for

[1] Benel and Mavor (1986) and Trickett and Benel (1986)

ages 12-16) have similar requirements to limit speed to at least 15 mph and allow upward adjustment to a maximum unrestricted speed of 30 mph.

Table 1. Summary of current ATV models by age

Current ATV models and their intended ages	
ATV Model	**Age (years)**
Y-6 model (under 70cc engine)	6-11
Y-12 model (70-90cc engine)	12-15
G, S, U models (greater than 90cc engine)	16+

States

Most states have little, if any, guidance on age appropriate ATVs, although several states (Virginia, North Carolina, New Jersey, and Kentucky) specifically limit youth under 16 to ATVs 90cc and under. Minnesota will issue a youth safety certificate valid to operate any ATV, but only if the youth properly "fits" the ATV. The remaining states either have no or very vague age guidelines.

Issues with 90cc

The Consent Decrees established the current measure of youth ATVs used by the CPSC today; that is, that ATVs with engines sized greater than 90cc should be used by adults only, and those with smaller engines are intended for youth. The original intention with limiting engine size may have been a method to limit the speed and power of youth ATVs, but Human Factors (ESHF) staff does not believe that the method is appropriate today for several reasons:

- The 90cc policy is design restrictive.
- Engine size has been used as a surrogate for speed, but it does not necessarily restrict ATV size, nor does it necessarily regulate maximum unrestricted speed.
- Staff cannot make assumptions (e.g., speed, power, weight, or size) about all ATVs of a certain engine size based solely on the engine displacement values.
- The current voluntary standard for ATVs categorizes youth ATVs by speed limiting characteristics, not engine size.

Therefore, ESHF staff feels that engine size is not the appropriate way for youth ATVs to be categorized. The remainder of this memorandum will detail ESHF proposals for categorizing youth ATVs.

Behavioral factors in youth applicable to ATV driving

There has been a movement over the past decade for states to implement graduated licensing programs for teenage automobile drivers (Highway Loss Data Institute, 2005). The behavioral factors cited for this change are inexperience, immaturity, risk-taking behaviors, impulsiveness, and peer pressure (NHTSA, 1998). Of these, only inexperience may not apply to some teen ATV drivers, as it is possible to have many years of ATV driving experience by the teen years. Behavioral characteristics such as impulsiveness, immature judgment, high risk-taking propensity, disregard for consequences, and susceptibility to peer pressure are present in most teens, no matter their experience level, and often persist until the late-teens to early twenties. Research affirms that these behavioral characteristics may be due to both social development and the physical maturation process of the brain (Giedd, 2002, NIMH, 2001, Restak, 2001). These behavioral characteristics are commonly dominant in adolescents and are difficult to modify

through training, supervision, or warnings. It is not that adolescents are unintelligent or unable to learn to operate an ATV, but in general, these developmental factors suggest that it is beneficial to limit a teen's access to high-speed motorized vehicles.

Age groupings

Background

Based on developmental characteristics, children are typically grouped as:

- age 5 through 7 or 8,
- age 8 or 9 through 11 or 12,
- age 12 through 15,
- and age 16 and up.

Since not all children develop at the same rate, there is some variability around the end points. Some children's cognitive skills develop earlier than others, and while one 12-year-old may appear to be as mentally mature and capable as an average 15-year-old, another 12-year-old may not yet be mentally ready to learn ATV skills. As is true with children's products, age is not necessarily the primary indication of the suitability of a toy; rather the child's development, measured by developmental milestones, is a far better indicator of appropriateness. Age, however, is a measure that is readily understood, available, and enforceable. Therefore, CPSC staff believes age groups based on the average abilities of children are the most appropriate groupings.

Deaths and injuries with current ATV groupings

Currently, youth ATVs are grouped into one of two categories: Y-6 (speeds from 10 to 15 mph and under 70cc engines) and Y-12 (speeds from 15 to 30 mph and 70- 90cc engines). The available analyses of injury and death data (Ingle, 2005, Ingle, 2004, Levenson, 2003, and Levenson, 2004) imply that the risk of injury to youth is smaller on youth ATVs than on adult ATVs, but these analyses do not distinguish between the two categories of youth ATVs (Y-6 vs Y-12 or under 70cc vs. 70-90cc). Therefore, ESHF staff cannot evaluate the appropriateness of these age categories from an injury risk perspective.

Alternative ATV groupings

CPSC Staff's *Age Determination Guidelines* (Therrell, et. al., 2002) state that children age 6 through 8 years can operate slow-moving motorized vehicles, and that children age 9 through 12 years can operate motorized vehicles with gear shifting up to 10 miles per hour. The guidelines state a clear demarcation with the teenage years: "faster [than 10 mph] moving motorized [vehicles] are generally not appropriate even for 12-year-olds because of the difficulty associated with both balancing and steering the vehicle while moving," (Therrell, et. al., 2002, p. 170). Since ATVs require significant balance and control, it seems most appropriate to have an age division around the late pre-teen/early teenage years. Based on youth attributes described in the *Age Determination Guidelines*, suggested youth ATV categories would be Y-6 ("slow-moving," no gear shifting), Y-9 (speeds 5-15 mph, gear shifting acceptable) and Y-13 (since the *Age Determination Guidelines* stop at age 12, no specifications can be made based on them). Additionally, the *Age Determination Guidelines* mention that 9- to 12-year-olds are generally "aware of traffic laws, but they are very likely to engage in high-risk behaviors like riding in traffic and stunt riding" (Therrell, et. al., 2002, p. 170).

Research detailed by ESHF staff during the consideration of petition CP-02-4/HP-02-1 suggests the age groupings should follow the lines of cognitive development outlined by Piaget: under 4

(sensorimotor), 5-7 (preoperational), 8-11 (concrete operational), and 12-15 (formal operations). These ATV categories would be: under 4 (no driving), age 5-7 (rudimentary driver), age 8-11 (developing driver), and age 12-15 (adept driver).[2]

Appropriate age groupings should also account for changes in physical size. Like cognitive skills, growth rates vary from child to child and will also vary by gender. For males, the rate of increase in height increases around age 8 and again around age 12 before slowly leveling off between 15 and 17, and the rate of increase for weight increases around age 11 and age 16.[3] For females, the rate of increase in height changes around age 8 and again around age 10½ before slowly leveling off between 13 and 16, and the rate of increase for weight increased around age 9 and begins tapering off around age 14.[4] This suggests groupings with breaks roughly at around ages 8 to 9 and 11 to 13, acknowledging that growth will be rapid between ages 11 and 16 for both males and females.

What ATV attributes should be used to determine appropriateness for youth?
Based on physical and cognitive development, there are four main factors that should be used in the categorization of a youth ATV: speed, weight, frame size, and transmission type.

Speed: ESHF staff recommends developing speed limits using the groupings set forth in the *Age Determination Guidelines*. This would suggest three categories of youth ATVs: "slow-moving," limited to 10 mph, and some unspecified speed faster than 10 mph.

- "Slow moving" - Since the *Age Determination Guidelines* do not define "slow-moving," to facilitate supervision, ESHF staff suggests this be a speed at which parents would be able to walk or jog. Weyand et al (2000) measured top running speed in 33 subjects and recorded speeds between 13.8 and 24.5 mph; additionally, they found a "comfortable jogging speed" was typically 5.5 mph. It would be reasonable to set the maximum speed for the slowest youth ATV between the jogging speed and slowest running speed – yielding about 9 to 10 mph.
- "Faster than 10 mph" – The *Age Determination Guidelines* do not extend beyond age 12. One can assume it is reasonable that older, more experienced teens may be able to handle speeds higher than 10 to 15 mph. ESHF staff has found no scientific research to support either raising or lowering the current 30 mph speed limit for teens.

Weight: The weight of the ATV has several roles in the suitability of an ATV for a youth; however, because there are competing factors involved,[5] the information needed to set an optimum weight for a youth ATV requires significant testing, modeling, and optimization. ESHF staff cannot suggest an appropriate ATV weight at this juncture.

Frame Size: Fitting the frame anthropometrically to the user is one of the most important factors for youth ATVs. If the frame is too small, the youth will be discouraged from riding the ATV both physically and socially. If the frame is too large, the youth will be unable to reach all

[2] For full discussion, see Tab H - "Developmental Characteristics as related to All-Terrain Vehicles and Petition CP-02-4/HP-02-1" in petition briefing package for CP-02-4/HP-02-1, February, 2005.
[3] From November, 2000 Centers for Disease Control (CDC) Growth Charts
[4] ibid.
[5] For example, a heavy ATV may be more stable, but a lighter ATV might lessen impact risk. Without further research, the relationship between these factors remains unquantifiable.

controls while actively riding. Because the rider and ATV make up a three-dimensional system,[6] it is virtually impossible to dictate specific dimensions based on individual, static anthropometric measures. There are, however, numerous anthropometric modeling software products that use computer-aided design (CAD) drawings to model the three-dimensional interaction between the user and the product. The use of these or similar products during the design phase of an ATV model would be beneficial to designate the appropriate physical size person to fit the ATV. Additionally, it may be possible to ensure a reasonable fit through a performance test in the voluntary standard. One possible set of performance fit tests is detailed in Appendix A.

Transmission type: Based on the *Age Determination Guidelines*, ESHF staff believes that manual transmission ATVs are inappropriate for children under 9 years of age. Due to the high cognitive load required to operate complex motorized vehicles,[7] ESHF staff believes it best to allow children to master driving skills before learning to coordinate gear shifting with the many other skills involved when riding. Therefore, ESHF staff recommends against manual transmissions for *all* types of youth ATVs.

Conclusion and recommendations

Since different children do not mature at the same rate, CPSC staff guidelines typically use age as a reasonable surrogate for developmental milestones. Development suggests three categories for youth ATVs that correspond roughly to grade school, middle school, and junior high/high school age children. The exact ages are debatable; however, research consensus suggests a break between ages 8 and 9, with a second break somewhere between about age 11 and 13. Since CPSC staff worked closely with the ANSI committee to develop the speed limits in the current standard, and there is little scientific research to support changing the speed for older children, ESHF staff feels that following the current voluntary standard is appropriate for children over age 9. If properly implemented mechanically and controlled by parents, these speed restrictions allow children to develop skills over time yet limit the maximum speed to that which youth are capable of handling. Table 2 summarizes ESHF suggested ATV models and the appropriate ages.

Table 2. Summary of ESHF suggested models

Suggested ATV models and intended ages		
ATV Model	**Age (years)**	**Speed Range**
Junior	6+	10 mph or less
Pre-teen	9+	10*-15 mph
Teen	12+	15*-30 mph
Adult	16+	Not restricted
		* with speed limiter

Additionally, ESHF staff believes that it is important for a child to ride an ATV that properly fits him or her anthropometrically and suggests prospective purchasers should be provided with information regarding proper fit and selection of an appropriate ATV along with risks of riding an inappropriate ATV. Appendix B is one example showing how this information could be provided in a format that could be given to prospective purchasers, used on a website, or used as a poster in an information and education campaign.

[6] For full discussion, see Tab H - "Developmental Characteristics as related to All-Terrain Vehicles and Petition CP-02-4/HP-02-1" in petition briefing package for CP-02-4/HP-02-1, February, 2005.

[7] For a full discussion of the skills required for driving ATVs, see Tab M – Johnson (2006) "ATV Training,"

To ensure that all purchasers of youth ATVs have been informed about the different youth model ATVs, a proposed disclosure form for all purchasers of youth ATVs is shown in Appendix C. Requiring potential purchasers to read and sign the subject statement could reduce the incidence of consumers purchasing an inappropriate youth ATV. This disclosure should occur before potential purchasers are presented with any forms associated with the actual purchase of the youth ATV.

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Appendix A

Suggested Fit Performance Tests

- Using either a 50th percentile or 95th percentile stature and weight mannequin[8] or suitable surrogate[9] for the intended age range, the ATV should:
  - Meet speed and braking requirements ungoverned
  - Meet speed and braking requirements with the governor engaged
  - With the mannequin seated:
    - The mannequin should be situated in the middle of the seat with an equal amount of seat space in front and behind.
    - The mannequin should have both feet flat on the foot boards or pegs.
    - The mannequin should have a knee bend angle between 90 and 170 degrees.
    - The top of the mannequin's knee should not protrude above a horizontal plane extending from the hip joint.
    - Nothing along the front part of the leg should touch the fender or flashing.
    - With the mannequin's hands attached to the grip, the handlebars should be free to move through their full range of motion without obstruction by any body part.
  - With the mannequin standing on the foot boards of pegs and arms at the side:
    - The handlebars should be at grip height or above.
    - The distance between the seat and the crotch should be between 3 and 6 inches.

Suggested Mannequin Sizes[10]		
ATV Model	**50th percentile height & weight**	**95th percentile height & weight**
Junior (age 6-8+)	Age 7: 48'' 55 lbs	Age 8½ : 56'' 85 lbs
Pre-teen (age 9-11+)	Age 10: 55'' 80 lbs	Age 11½: 63'' 125 lbs
Teen (age 12-15+)	Age 13½: 63'' 120 lbs	Age 15½: 72'' 180 lbs

[8] To reduce the likelihood of children moving to an inappropriate age-graded ATV simply because they are physically bigger, ESHF recommends *against* developing ATVs for 5th percentile children at the lower end of the age group. A system similar to the one given would still allow larger, younger children to find an appropriate ATV by selecting one intended for the upper end of the age range, for example, a 95th percentile 6-year-old is close to the height of a 50th percentile 8-year-old.

[9] It would be acceptable to use a person of the appropriate height (+/- 0.5 inch) and weight (+/- 5.0 lbs) as a surrogate

[10] From November, 2000 CDC Growth Charts, rounded to nearest whole inch (height) or 5 pounds (weight).

Appendix B

Suggested information for *prospective* purchasers of youth ATVs

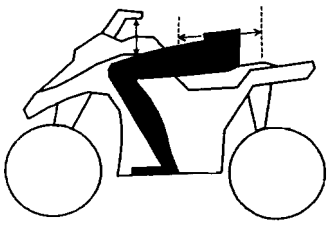
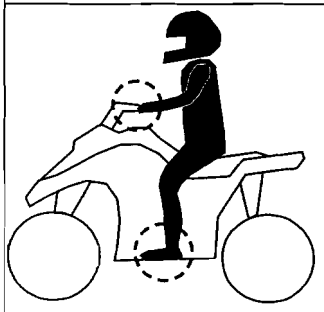
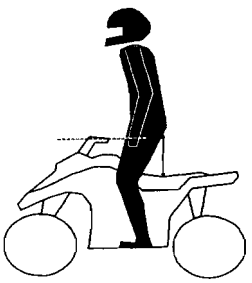
Selecting an ATV for your child or teen

Not all children develop at the same rate. Kids and teens have immature judgment, tend to take risks, disregard consequences, and bow to peer pressure – even if they have been riding ATVs for a long time.

1. Select an ATV for your child or teen that fits him or her both physically and mentally.
2. Use the speed limiter to allow the child or teen to develop skills at a controlled pace.
3. **ALWAYS** supervise your child or teen.

ATV models and their intended ages

ATV Model	Age (years)	Speed Range
Junior	6+	10 mph or less
Pre-teen	9+	10-15 mph
Teen	12+	15-30 mph
Adult	16+	Not restricted

	**When Seated:** You should be able to sit in the middle of the seat with an equal amount of seat space in front of and behind you. Nothing along the front part of your legs should touch the fenders or flashing. Your knees should be lower than your hips
	**When Seated:** Both feet should be flat on the foot boards or pegs. You should have a knee bend angle between 90 and 170 degrees. You should be able to hold the handlebars while turning them. When holding the handlebars, they should be free to move through their full range of motion without hitting any body part.
	**When Standing:** The handlebars should be at or above where your hands are. The distance between the seat and your inseam should be between 3 and 6 inches.

Appendix C

Disclosure form for *all* purchasers of youth ATVs

The ATV you are considering is for youth drivers

Not all children develop at the same rate. Kids and teens have immature judgment, tend to take risks, disregard consequences, and bow to peer pressure – even if they have been riding ATVs for a long time.

1. Select an ATV for your child or teen that fits him or her both physically and mentally.

2. Use the speed limiter to allow the child or teen to develop skills at a controlled pace.

3. **ALWAYS** supervise your child or teen.

ATV models and their intended ages

ATV Model	Age (years)	Speed Range
Junior	6+	10 mph or less
Pre-teen	9+	10-15 mph
Teen	12+	15-30 mph
Adult	16+	Not restricted

I have read the information above and
understand that the ATV I am about to buy is a

junior / pre-teen / teen model
(circle one)

intended for children ages _____ and older.

I also understand that other ATVs are available for children of different ages.

Signature Date (mm/dd/yyyy)

Print name

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UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
WASHINGTON, DC 20207

Memorandum

Date: May 22, 2006

TO : Elizabeth Leland, Project Manager, ATV Project
Directorate for Economic Analysis

THROUGH: Hugh M. McLaurin, Associate Executive Director, HMM
Directorate for Engineering Sciences
Robert B. Ochsman, Director, Division of Human Factors, RBO
Directorate for Engineering Sciences

FROM : Sarah B. Brown, Engineering Psychologist, Division of Human Factors, SBB
Directorate for Engineering Sciences

SUBJECT : ATV Lighting

Introduction

The U.S. Consumer Product Safety Commission (CPSC) staff has been asked to evaluate the possibility of including a daytime running light (DRL) on youth all-terrain vehicle (ATV) models. ATV manufacturers believe a manufacturer-installed daytime running light would improve the safety of youth ATVs in low light conditions, and reduce the use of a number of aftermarket products that produce direct light (i.e., headlamps). To date, the CPSC staff has recommended that youth ATVs not include headlamps of any kind.

The ANSI/SVIA 1-2001, American National Standard for Four Wheel All-Terrain Vehicles – Equipment, Configuration, and Performance Requirements, states the following:

> **4.17 Lighting Equipment**
>
> **4.17.1 Headlamps, Tail Lamps and Stop Lamps.** All ATVs except category Y[1] vehicles shall have at least one headlamp projecting a white light to the front of the ATV, and at least one tail lamp projecting a red light to the rear. ATVs may be optionally equipped with a stop lamp or combination tail-stop lamp, and such lamps shall be illuminated by the actuation of any service brake control.
>
> **4.17.2 Specifications.** Headlamps shall conform to Recommended Practice, SAE J1623 FEB94; and tail lamps shall conform to Standard, SAW J585 DEC94. If the ATV is equipped with a stop lamp, such lamp(s) shall conform to Standard, SAE J586 SEP95 or Recommended Practice, SAE J278 MAY95.
>
> **4.17.3 Requirements for Category Y ATVs.** Category Y vehicles shall not have a headlamp or tail lamp.

[1] Category Y indicates youth ATV

The ANSI rationale against headlamps and tail lamps on youth ATVs, as discussed in the ANSI standard appendix, is to discourage ATV operation by younger drivers at nighttime and in low visibility conditions. The standard also suggests that parental supervision of children on ATVs may be more difficult in low visibility conditions.

The CPSC staff has reevaluated the current lighting section of the ATV standard and reviewed relevant literature to determine appropriate recommendations for all lighting, not just the allowance of DRL, on adult and youth ATVs.

Tail lamps and stop lamps on youth ATVs

The Engineering Sciences Human Factors (ESHF) staff recommends, but does not suggest requiring, that tail lamps be included on all ATVs, including youth models. Staff recommends that stop lamps be required on youth ATVs to alert a follower to the deceleration of the lead vehicle. There are no anticipated negative effects by allowing tail lamps and requiring stop lamps on youth ATVs; there could be positive effects by potentially reducing rear-end collisions.

On-road nighttime and unsupervised riding by children

In the Bicycle Use and Hazard Patterns in the United States report released in June 1994, the CPSC staff stated that bike riding during non-daylight conditions was a significant factor in the risk of injury for children.[2] The CPSC has required bicycles to include reflectors to increase bicycle conspicuity and bicyclists' safety.[3] One study[4] suggested that children lack the knowledge and cognitive capacity to perform like adults and recommended that children between 7 and 13 years old only be allowed to ride bicycles on the street when accompanied by an adult. By 13 years, most children have reached a maturity level that allows them to understand and comply with traffic rules.

Headlamps on youth ATVs may encourage nighttime and unsupervised riding in challenging conditions. The CPSC staff contends that riding bicycles during the night is a significant risk factor for children. This risk factor may be relevant to children riding ATVs at night as well; therefore youth ATVs should not have headlamps which could encourage this behavior. Though 13-year-olds may have the maturity level to understand and comply with traffic rules, they may not have the cognitive skills necessary to process information while traveling at high speeds.

Daytime Running Lights

Daytime running lights (DRLs) are lamps on vehicles that are on when the engine is running. Some car models do not allow the driver to switch off the DRL, while other models do. The purpose of a DRL is to make the vehicle more conspicuous to other drivers, not to provide an illuminated path. There are three types of conspicuity identified by Blomberg, Hale, and Preusser (1984) based on pedestrian and bicyclist accident records, which may apply to ATVs as well: the visible object, the obstructed object, and the visible object not seen. A DRL may

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[2] Rodgers, G.B., (1994) *Bicycle Use and Hazard Patterns in the United States*. Washington DC: U.S. Consumer Product Safety Commission.

[3] U.S. Consumer Product Safety Commission. Mandatory Bike Standard. Requirements for Bicycles, 16 CFR § 1512.16 – Requirements for reflectors

[4] City of Santa Barbara, CA (1975). "Children Bicyclists: Should Minimum Age be Required?" City of Santa Barbara Department of Public Works, CA Division of Transportation.

reduce Type III Inconspicuity – The Visible Object Not Seen[5] where an object "does not stand out sufficiently from the visual background to be seen when the driver looks (p 2)." One such example with an ATV may be in a wooded area with a camouflage-designed ATV; while the ATV has characteristics that differentiate it from shrubbery, it may still blend in with the environment. Blomberg et al. suggests that Type III inconspicuity occurs mostly when the driver is "experiencing high attention demand (p 2)." ATV drivers may experience high attention demand by the number of maneuvers and driver-active movements required to operate the ATV. On-road automobile drivers experience varying degrees of attention demand, and seeing an ATV in their path may violate their expectations and disrupt their situational awareness; this is important to address since the ATV injury and death data has shown collisions between automobiles and ATVs. An ATV driver, on the other hand, may expect to see another ATV on a designated path or trail.

The primary argument in support of DRL is that increasing vehicle conspicuity to other drivers reduces vehicle-to-vehicle collisions. Several countries mandate automobiles to have daytime running lights. The United States National Highway Transportation Safety Administration (NHTSA), however, has not mandated DRL, nor have any states. The Federal Motor Vehicle Safety Standard 108 (FMVSS 108) does not mandate DRLs but does permit them:

> "This standard specifies requirements for original and replacement lamps, reflective devices, and associated equipment. Its purpose is to reduce traffic crashes and deaths and injuries resulting from traffic crashes, by providing adequate illumination of the roadway, and by enhancing the conspicuity of motor vehicles on the public roads so that their presence is perceived and their signals understood, both in daylight and in darkness or other conditions of reduced visibility."[6]

In their 2006 brochure, "Buying a Safer Car", NHTSA lists DRLs as one of the top five important safety features to consider when buying a new car:

> "This feature turns on the headlights when a vehicle is being driven. Daytime running lights increase the ability of oncoming drivers to see your vehicle. This feature may not include tail lights or other exterior lights, so remember to turn on your headlights at dusk." [7]

Several studies report a reduction in car-crash risk and rate with DRLs, which is thought to be caused by the increase in detectability. One analysis[8] found that DRLs reduced opposite

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[5] Blomberg, R.D., Hale, A, Preusser, D.F. (1984) *Conspicuity for Pedestrians and Bicyclists: Definition of the Problem, Development and Test Countermeasures.* Washington, DC, National Highway Traffic Safety Administration.

[6] Federal Motor Vehicle Safety Standard and Regulations. National Highway Traffic Safety Administration. Available at: http://www.nhtsa.dot.gov/cars/rules/import/FMVSS/#SN108.

[7] http://www.safercar.gov/BASC2006/pages/SafetyFeatures.htm

[8] Tessmer, Jospeh M. (2004) *An Assessment of the Crash-Reducing Effectiveness of Passenger Vehicle Daytime Running Lamps (DRLs).* Washington, DC: U.S. National Highway Traffic Safety Administration. Tessmer's analysis was conducted using NHTSA's Fatality Analysis Reporting System (FARS) and National Automotive Sampling System/General Estimates System (NASS/GES).

direction/angle daytime crashes, both fatal and non-fatal, by 5%. They found DRLs reduced passenger vehicle crashes with motorcycles by 23%. However, when additional analyses were conducted in an attempt to control for a variety of factors, it was found that DRLs had no significant effect on crash rates. In a motorcycle conspicuity study,[9] researchers found a 10 to 20% increase in the detectability of a motorcycle when conspicuity aids, one of which was a DRL, were used.

Though most studies show daytime running lights to be beneficial, there are a few studies and critics that reveal potential negative effects. A common argument is that the illumination level of DRLs produces excessive light and glare for oncoming traffic and for following traffic in the rear-view mirror. Another argument against DRLs is that drivers often do not switch on a needed head lamp and tail lamp in low lighting conditions because the DRL seems to produce sufficient luminance or the drivers are not aware the headlamps are off. Although there is information regarding DRLs and enhanced conspicuity to decrease the number of on-road incidents, it is unclear if there is a direct parallel to off-road conditions. ATVs are used in different surroundings and environments than on-road vehicles and because of this it may be difficult to predict any additional concerns, such as glare or improperly switching to the correct light, which occur when installing DRLs on ATVs.

Daytime running lights on youth ATVs

ESHF staff has concerns that parents, children, and compliance officials may have difficulty distinguishing between a daytime running light and a headlamp, and may therefore misuse or misinterpret a DRL as a headlamp, which may encourage a child to ride at night. Therefore, to eliminate the difficulty of distinguishing between the two lights, ESHF recommends that DRLs be allowed anywhere on a youth ATV except for the front of the ATV or forward facing from the side. With DRLs, other ATV riders or motorized vehicle drivers will still have the benefit of detecting the ATV while reducing the likelihood of the DRL being used at night for illumination if mounted on the front or forward facing. The greatest degree of safety utility for DRLs on youth ATVs may be a light which faces off each side and is visible when facing the ATV. Currently, aircraft and some watercraft use similar lights, or navigation lights, which are a red light on the left and a green light on the right when facing forward on the craft. Another distinguishing characteristic of a DRL from a headlamp is that it should always be on when the ATV is running.

Daytime running lights on adult ATVs

The ESHF staff recommends daytime running lights be allowed anywhere on adult ATVs. Because the concern of nighttime riding is minimized with the requirement for headlamps, tail lamps, and stop lamps on adult ATVs, there are no disadvantages to installing a DRL on the front of an adult ATV. As with youth ATVs, the DRLs on adult ATVs should turn on automatically and remain on when the ATV is running. The DRL on adult ATVs can use the current headlamps. One method used with motorized vehicles is to apply a lower voltage over the high beams, which uses a smaller amount of energy and creates less glare, as opposed to using the low beams as DRLs.

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[9] Donne, G.L. (1994) *Research into the Motorcycle Conspicuity and Its Implementation.* Warrendale, PA: Society of Automotive Engineers.

Incident Data: Deaths as a result of a collision with a youth ATV.
The data from years 1999-2000 were analyzed for the ATV petition; from those years, nine in-depth investigations (IDIs) were conducted for youth deaths on youth ATVs.[10] Five incidents did not involve another motorized vehicle and ranged from the child being thrown from the ATV to the ATV turning over onto the victim. The remaining four incidents involved either another ATV or an on-road vehicle.

An incident (000412HNE5491) involving a youth on an ATV failing to stop at a stop sign resulted in a collision with a crossing automobile; because it was the ATV coming in contact with the vehicle, it is believed that daytime running lights would have had no effect on this incident. Another incident (000131HNE5415) occurred at 1:15 PM on a clear day, involving two children riding a youth ATV on a paved, 2-lane road. Upon cresting a hill, an automobile driver spotted the ATV traveling north in the southbound lane and the driver braked and swerved in an attempt to avoid the ATV. The ATV and vehicle struck head on in the center of the 2 lanes. This incident resulted more from inappropriate actions and responses rather than the lack of a conspicuity aid; the automobile driver detected the ATV even though it did not have DRLs. Another incident on public roads (011120HCC2088) involving a passenger on a youth ATV occurred when the ATV crossed a state intersection around 8:50 PM. The passenger fell off the ATV and was then struck by a vehicle traveling in the opposite direction. It is believed that DRL would not have helped in this situation because the automobile driver struck the person rather than the ATV.

The last collision resulting in a death (000911HCN0477) involved a seven-year-old girl on a 90cc youth ATV and a 14-year–old boy on a 499cc adult ATV in daylight hours. Upon seeing each other, the girl swerved right and the boy swerved left before the head-on collision. Both children were thrown from their ATVs and one of the ATVs landed on the girl. In the U.S., automobile drivers are taught to swerve right in split second decisions when there is oncoming traffic, so this incident may have been prevented had the boy been of driving age; it is likely it would not have been prevented by DRLs.

In the briefing package for the ATV petition,[11] staff from the CPSC Directorate for Epidemiology analyzed youth fatalities for 1999-2000, and found collisions (with other vehicles including ATVs) were the third most common hazard pattern, accounting for 19% of the youth deaths (or 35 deaths) during those years.[10, 12] Of those fatal collisions, 9% (or 17 deaths) were specified as "other vehicle hit ATV" and 7% (or 13 deaths) were "other or unspecified," so anywhere from 9% to 16% were from another vehicle hitting the ATV. Various research of DRL has found a reduction in fatal collisions from 5% up to 23%;[13] therefore one may conclude

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[10] The death data collection was incomplete for the year 2000 and further data collection may yield more information regarding other incidents involving youth on youth ATVs in which DRLs may have been useful had they been present.

[11] 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.

[12] Ingle, R.L. (2003) *Analysis of ATV-Related Fatality Data for CPSC Petition CP 02-4/HP 02-1.* Table 3. In Leland, E (ed) Briefing Package for CPSC Petition 02-4/HP 02-1.

[13] Tessmer, Jospeh M. (2004).

that DRLs may have reduced the total number of youth fatalities by up to 4%.[14] Further inspection of each in-depth investigation involving a fatal crash of a youth on a youth ATV, for the years 1999-2000, reveals that the incidents would most likely not benefit by having a DRL. It is difficult to predict significant effects by including a system not currently used in ATVs, though one may see the same benefits of non-fatal and fatal collision reduction as seen in the automobile industry.

Conclusion

The ESHF staff recommends that headlamps remain banned on youth ATVs. Daytime running lights should be allowed on youth ATVs, as long as they are not mounted on the front of the ATV or forward facing so they are distinguishable from headlamps. Daytime running lights may be installed on any location for an adult ATV since the concern for nighttime riding does not exist. The DRL should always be on when the ATV is running. Tail lamps are recommended, but not required for youth ATVs. Stop lamps should be required on all ATVs as an indicator of deceleration and to reduce the likelihood of a rear-end collision. These requirements may reduce the number of collisions with an ATV while reducing the additional hazard of youth riding at night.

References

49 U.S.C. Chapter 301. Crash Avoidance. Part 571. Standard No. 108 Available at: http://www.nhtsa.dot.gov/cars/rules/import/FMVSS/#SNN108.

ANSI/SVIA 1-2001. The American National Standard for Four Wheel All-Terrain Vehicles – Equipment, Configuration, and Performance Requirements.

Blomberg, R.D., Hale, A, Preusser, D.F. (1984) *Conspicuity for Pedestrians and Bicyclists: Definition of the Problem, Development and Test Countermeasures.* Washington, DC, National Highway Traffic Safety Administration.

Buying a Safer Car 2006. National Highway Traffic Safety Administration. Available at http://www.safercar.gov/BASC2006/pages/SafetyFeatures.htm.

City of Santa Barbara, CA (1975). "Children Bicyclists: Should Minimum Age Be Required?" City of Santa Barbara Department of Public Works, CA Division of Transportation.

Donne, G.L. (1994) *Research into the Motorcycle Conspicuity and Its Implementation.* Warrendale, PA: Society of Automotive Engineers.

Ingle, R.L. (2003) *Analysis of ATV-Related Fatality Data for CPSC Petition CP 02-4/HP 02-1.* in Leland, E (ed) Briefing Package for CPSC Petition 02-4/HP 02-1.

[14] DRL may have affected 23% of the 30 youth fatalities caused by a collision, resulting in 6.9 survivals or 3.75% of all youth fatalities. The lower end of DRL effectiveness is 5% of 13 youth fatalities, resulting in 0.65 survivals or 0.3% of all youth fatalities.

Requirements for Bicycles, 16 CFR § 1512.16 – Requirements for Reflectors.

Rodgers, G.B., (1994) *Bicycle Use and Hazard Patterns in the United States*. Washington DC: U.S. Consumer Product Safety Commission.

Tessmer, Jospeh M. (2004) *An Assessment of the Crash-Reducing Effectiveness of Passenger Vehicle Daytime Running Lamps (DRLs)*. Washington, DC: U.S. National Highway Traffic Safety Administration.

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.

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All-Terrain Vehicle Mandatory Standard: Preliminary Regulatory Analysis

Robert Franklin
Directorate for Economic Analysis
Consumer Product Safety Commission
May 2006

All-Terrain Vehicle Mandatory Standard: Preliminary Regulatory Analysis

Introduction

The staff of the U.S. Consumer Product Safety Commission (CPSC) has developed, for Commission consideration, a draft proposed rule for all-terrain vehicles (ATVs). This rulemaking proceeding was initiated by an advance notice of proposed rulemaking (ANPR) that was published in the Federal Register on 14 October 2005. The main provisions of the staff's draft proposed rule include 1) mechanical requirements for ATVs, 2) a ban on the sale of new three-wheel ATVs, 3) speed limitations on ATVs intended for children under 16 years of age, 4) requirements for warnings and recommendations to be provided to purchasers of new ATVs through hang tags, labels, videos, and owner's manuals, 5) requirements for a disclosure statement to be provided to purchasers warning against the use of adult ATVs by children, 6) a requirement that all purchasers of new ATVs be offered free safety training, and 7) requirements that purchasers of new ATVs be provided with a means for reporting safety related complaints to the manufacturer and the CPSC.

Many of the provisions of the staff's draft proposed rule are based on an existing voluntary standard (ANSI-SVIA-1-2001), provisions of the 1988 consent decrees, and the current letters of undertaking (LOU) with a number of manufacturers that may account for as much as 90 percent of the U.S. market for ATVs. Consequently, staff believes that most ATVs are already in substantial conformance with most of the provisions of the draft rule. Some of the smaller manufacturers, and some of the recent entrants into the market may also be in conformance with some (or most) of the provisions of the draft rule. Promulgating a mandatory rule will ensure that manufacturers that are already conforming continue to do so, and that any manufacturer that does not now conform can be brought into conformance.

This report provides a preliminary regulatory analysis of the staff's draft proposed rule, including a description of the potential costs and potential benefits. Each element of the draft proposed rule is discussed separately. For some elements, the benefits and costs cannot be quantified in monetary terms. Where this is the case, the potential costs and benefits are described and discussed conceptually.

Products Covered

An ATV is a motorized vehicle with 3 or 4 low-pressure tires (less than 10 pounds per square inch) that is intended for off-road use. The seat is designed to be straddled by the operator. Handlebars are used for steering control. Most ATVs are intended to carry only one person: the operator. More recently, some tandem ATVs have been introduced that are designed to carry a passenger in addition to the operator. ATVs can be used for purposes of recreation, sport or utility.

If promulgated, the staff's draft proposed rule will apply to all ATVs sold in the United States on or after the effective date of the rule. It will not apply to ATVs that were sold prior to the effective date.

ATV Manufacturers, Numbers in Use, and Sales

The ATV market has grown substantially since Honda introduced the first ATV in 1969. The Specialty Vehicle Institute of America (SVIA) estimated that in 2005, there were 6.9 million ATVs in use. While most ATVs are used for recreational activities, ATVs can also be used for non-recreational activities, such as farm or ranch work or for transportation to remote work sites that are not accessible on paved roads.

The number of new ATVs sold annually has increased substantially in the last decade. In 1995, an estimated 293,000 ATVs were sold in the US, almost all by 7 North American distributors.[1] In 2005, an estimated 921,000 ATVs were sold in the US. An estimated 10 percent (or 92,000) were imported. The share of imports is expected to continue to increase in the future.[2]

With the substantial increase in ATV sales has come a substantial increase in the number of manufacturers supplying ATVs to the US market. In 1995, virtually all the ATVs were supplied by 7 domestic distributors; by 2006, the staff had identified at least 87 firms supplying ATVs to the U.S. market.[3]

Generally, the largest manufacturers sell their ATVs through franchised dealers. Importers will typically import ATVs from a foreign manufacturer and then market them to various retailers. Some importers may sell directly to consumers. Some imported ATVs are sold directly to consumers through import brokers who never actually have physical possession of the ATV. ATVs are also offered for sale through the internet.

Most ATV retailers sell products in addition to ATVs. For example, many ATV dealers also sell motorcycles, scooters, personal water craft, and sometimes farm equipment. Some ATVs are sold by other types of retailers, such as aftermarket automotive parts and accessories dealers.

The median retail price of an ATV from the domestic manufacturers is about $5,150 (range $2,000 to $8,000). The median price for youth ATVs is about $2,300 (range $1,800 to $2,500). The retail prices of imports can be substantially lower.[4]

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[1] The 7 North American distributors include Honda, Kawasaki, Yamaha, Suzuki, Polaris, Bombardier, and Arctic Cat.

[2] Terrance R. Karels, "Current Market Conditions – ATVs," CPSC Memorandum to Elizabeth W. Leland, Project Manager ATVs, Consumer Product Safety Commission, Washington DC (2006). Hereafter cited "Karels (2006)."

[3] Karels (2006).

[4] Elizabeth W. Leland, "All-Terrain Vehicles (ATVs): Market Information," Directorate for Economic Analysis, U.S. Consumer Product Safety Commission, Washington, DC (July 2004).

Benefits and Costs of the Staff's Draft Proposed Rule

This section discusses the benefits and costs of each element of the CPSC staff's draft proposed rule.

Mechanical Requirements

The staff's draft proposed rule incorporates a number of mechanical requirements from the current voluntary standard for ATVs (ANSI/SVIA-1-2001). The specific requirements and rationales are described and discussed in more detail in a memorandum from the CPSC Directorate for Engineering Sciences (Tab I).[5] They include, among other things, requirements for service and parking brakes, mechanical suspension, pitch stability, handlebars, and the operator foot environment. There are also some additional design requirements for youth models covering items such as the location of brake and throttle controls.

The staff's draft proposed rule differs from ANSI/SVIA-1-2001 with regard to some lighting requirements. The draft proposed standard would require stop lamps on all ATVs, including youth models (i.e., those intended for children under the age of 16). ANSI/SVIA-1-2001 allows, but does not require stop lamps on adult and youth ATVs. Stop lamps can reduce the risk of a collision by visibly signaling to a following ATV that an ATV ahead of it is decelerating. CPSC staff believes that while most adult ATVs are already equipped with stop lamps, most youth ATVs do not currently have stop lamps.[6]

Like ANSI/SVIA-1-2001, the staff's draft proposed rule contains requirements for head and tail lamps on adult ATVs. However, while ANSI/SVIA-1-2001 prohibits head and tail lamps on youth ATVs, the draft proposed standard will allow, but not require, tail lamps and other lighting designed for conspicuity on youth ATVs. Forward facing lights, which could be confused for headlamps, would still be prohibited in youth ATVs in order to discourage children from riding ATVs in low light conditions.

The staff's draft proposed rule would require that youth ATVs be equipped with automatic transmissions so that the operator does not have to either engage a clutch or select the proper gear in order for the engine to maintain its optimum speed. This is a change from the voluntary standard, which does not specify the type of transmission on youth ATVs. This requirement is based on the conclusions of the CPSC Division of Human Factors (ESHF) that manual transmissions are not appropriate for children under the age of 9 years and that "due to the high cognitive load required to operate complex motorized vehicles...it [is] best to allow

[5]Caroleene Paul, CPSC Memorandum to Elizabeth Leland, Consumer Product Safety Commission, Washington DC (2006).

[6]Personal communication from Tanya Topka Ivins, CPSC Office of Compliance (2 May 2006).

children to master driving skills before learning to coordinate gear shifting with the many other skills involved when riding."[7]

Each provision of the mechanical requirements should reduce injury risks associated with ATVs. For example, the pitch stability requirement is intended to reduce the propensity of ATVs to tip rearward, which could injure the rider if he or she was thrown from the vehicle or the vehicle flipped and landed on the rider. The service and parking brake performance requirements are intended to ensure that brakes are at least adequate for stopping the vehicle and preventing the vehicle from rolling when it is left unattended. The requirement for automatic transmissions on youth ATVs could reduce injury risk by reducing the number of tasks that inexperienced drives must perform while driving an ATV.

Mandating these mechanical requirements would help ensure compliance with these minimum mechanical safety requirements and enhance the CPSC's ability to enforce the mechanical safety requirements at a time when many new manufacturers are entering the market. At the present time, conformance to ANSI/SVIA-1-2001 is voluntary.

Mandating these mechanical requirements would have, at most, a small impact on injury risk. The ATV manufacturers that have negotiated LOUs with the CPSC are already in conformance with the requirements of the voluntary mechanical standard, from which the requirements in the staff's draft proposed rule were adapted. Some of the smaller manufacturers are also believed to be in conformance with the voluntary standard. In total, the firms that are already in substantial conformance probably account for more than 90 percent of ATVs now sold. However, mandating these requirements would ensure that those firms that do not now meet these minimum safety requirements will begin to do so. Moreover, as new firms enter the market, the presence of a mandatory standard that can be more easily enforced would make it more likely that new entrants comply with the mechanical safety requirements. Mandating these requirements should also help ensure that the risk of ATV-related injury does not increase in the future due to ATVs that do not meet the mechanical safety standards.

Since many manufacturers already conform to the voluntary standard, the additional cost that will be incurred by manufacturers to meet the mechanical requirements of the proposal will be low. The cost to some may be limited to the cost of adding stop lamps to their youth ATVs. The cost of adding stop lamps to youth ATVs could amount to several dollars or more, especially on youth ATVs. Most adult ATVs are thought to already have stop lamps.[8]

Additionally, some manufacturers will have to modify the transmissions on some youth ATV models so that they are fully automatic. Based on staff observations, most current youth ATV models are already equipped with automatic transmissions, especially those intended for

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[7] Hope E. Johnson, "ATV Age Guidelines," CPSC Memorandum to Elizabeth Leland, U.S. Consumer Product Safety Commission, Washington, DC (2006). Hereafter cited "Johnson, "ATV Age Guidelines," (2006).

[8] One reason that more adult than youth ATVs are equipped with stop lamps is that adult ATVs are required to have tail lamps. Tail lamps are prohibited on youth ATVs. The additional cost of adding a stop lamp to an ATV is probably lower if some of the steps can be combined with the steps required for installing the tail lamps. For example, the tail lamp and stop lamp may be contained in the same housing and the wiring can be run at the same time.

children under the age of 12 years. The staff have identified some ATVs intended for children between 12 and 15 years of age that are equipped with automatic clutches, but not automatic transmissions. These ATVs would not meet the requirements of the staff's draft proposed rule.

The fact that many youth ATVs are already equipped with automatic transmissions indicates that many consumers are willing to pay the additional cost of automatic transmissions for the additional safety, convenience, or driving ease that is provided by automatic transmissions. However, the staff has not been able to quantify the difference in cost between automatic transmissions and manual transmissions or between automatic transmissions and automatic clutches/manual transmissions.

The mechanical requirements are not expected to cause a substantial loss of utility for the rider. In fact, to the extent that the requirements prevent accidents, reduce downtime, make the ride more comfortable (e.g., the suspension requirements), and increase the functionality of the vehicles, most of the requirements probably would have a positive impact on rider utility.

The staff's draft proposed rule would require manufacturers (including importers) to perform, or cause to be performed, testing sufficient to ensure, on an objectively reasonable basis, that each ATV conforms to the requirements in the staff's draft proposed rule. The specified tests will require some time and equipment. If the tests are conducted at a facility where the required equipment is available and set up time for each test is kept to a minimum, it is possible that all of the tests could be conducted in one day (8 hours) or less. It is reasonable to assume that the person supervising the tests will be a senior mechanical engineer and that at least one other mechanical engineer will be involved in conducting the tests. If the total labor costs were $90 per hour, then the cost of conducting the tests would be about $720 per model (8 hours x $90).[9]

In addition to the labor cost, some accounting for the cost of equipment required for testing should also be made. Assuming that ATV manufacturers have the equipment easily available, it is probably reasonable to assume that the cost of the equipment used in the testing is perhaps about $500. This could be thought of as the rental value of the equipment for a day of testing.

The testing must be documented and maintained for 5 years after the production of that model ceases. The information required for this documentation would be collected during the performance of the tests. However, this information might be reformatted and assembled into the final record after the testing is completed. Moreover, in the case of foreign manufacturers, this documentation will have to be provided to the U.S. based importer and it is the importer that will be required to maintain the records. This could add perhaps another $100 to the cost of the testing and record keeping.

These estimates suggest that the full testing and recordkeeping costs of the staff's draft proposed rule could be about $1,320 per model. Previously, CPSC staff had identified 131

[9] According to the U.S. Department of Labor, Bureau of Labor Statistics, the average wage for a Level 13 Mechanical Engineer was $52.45 in July 2003. In this discussion $90 is used to allow for the assistance of a less experienced engineer and inflation.

different ATV models for the 2001 and 235 different ATV models for the year 2003. Given the significant increase in sales of ATVs in recent years, it is not unreasonable to believe that there might be 500 different ATV models today. Therefore, the full testing and recordkeeping costs could be $660,000 per year, assuming models are changed annually.

Several ATV manufacturers conform to ANSI/SVIA-1-2001 and, therefore, should already be performing the testing called for in the staff's draft proposed rule. The staff's draft proposed rule will not impose additional testing burdens on these manufacturers. The staff estimates that these manufacturers account for at least 150 ATV models. Therefore, the testing and recordkeeping cost that could be attributed to the staff's draft proposed rule that would not be incurred in the absence of the staff's draft proposed rule, could be less than $462,000 annually ($660,000 – 150 x $1,320).

Ban on the Sale of New 3-Wheel ATVs

As part of the 1988 consent decrees, ATV manufacturers agreed to not sell any new 3-wheel ATVs, which had been shown to be less stable and more risky than their 4-wheel counterparts.[10] As a result, until recently, no new 3-wheel ATVs have been marketed in the United States since the late 1980s. However, the CPSC Office of Compliance has found evidence on the internet that 3-wheel vehicles that could be considered to be ATVs have recently been offered for sale to the public. Therefore, the staff's draft proposed rule would formalize a ban on the sale of new 3-wheel ATVs. While formalizing the ban will not reduce ATV-related injuries from their present levels, it will ensure that 3-wheel ATVs are not reintroduced into the U.S. market.

The justification for a ban on the sale of 3-wheel ATVs is based on the substantially higher expected injury costs associated with the ownership and use of 3-wheelers, relative to 4-wheelers, and the likelihood that these higher costs outweigh any additional utility that they may provide to their owners. We begin with a discussion of the costs associated with the ownership and use of 3-wheel and 4-wheel ATVs.

The real costs of ATVs include the expected injury costs associated with their use as well as their purchase price. A recent risk analysis, based on injuries reported through the CPSC National Electronic Injury Surveillance System (NEISS) and a parallel survey of the general population of ATV drivers, found that the risk of a hospital emergency department treated injury on a 3-wheel ATV was about 3.1 (95% confidence interval (CI), 1.5, 6.4) times the risk on a similar 4-wheel ATV.[11]

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[10] Gregory B. Rodgers and Paul H. Rubin, "Cost-Benefit Analysis of All-Terrain Vehicles at the CPSC, Risk Analysis, Vol. 9 No. 1, (1989). (Here after cited "Rodgers and Rubin (1989") and R.W. Deppa and J.A. Hauser, "ATV lateral stability and limits of control," presented at 1989 SAE Government/Industry Meetings, SAE #891108, Washington DC, (1989).

[11] Gregory B. Rodgers and Prowpit Adler, "Risk Factors for All-Terrain Vehicle Injuries: A National Case-Control Study," American Journal of Epidemiology, Vol. 153, No. 11 (2001). Hereafter Cited "Rodgers and Adler (2001)."

These relative risk estimates can be used to estimate the expected difference in annual injury costs between 3-wheel and 4-wheel ATVs. As discussed in the Appendix, in 2001, the societal cost of non-fatal ATV-related injuries was about $1,876 per ATV in use. In 2001, 3-wheel ATVs made up about 14 percent of the ATVs in use. If we let $Cost_3$ and $Cost_4$ represent the expected annual non-fatal injury cost per 3-wheel and 4-wheel ATV in use respectively, then the expected annual injury cost per ATV can be expressed as

$$0.14(Cost_3) + 0.86(Cost_4) = \$1{,}876.$$

Since the risk of a non-fatal injury on 3-wheel ATVs is approximately 3.1 times that of a 4-wheel ATV, $Cost_3$ can be expressed in terms of $Cost_4$ (i.e., $Cost_3 = 3.1 * Cost_4$). Solving these equations yields $Cost_3 = \$4{,}494$ and $Cost_4 = \$1{,}450$. Therefore the expected difference in non-fatal injury costs between 3-wheel and 4-wheel ATVs is about $3,045 per vehicle annually.[12] If the expected life of an ATV is 9 years, the present value of this injury cost difference (at a 3 percent discount rate) over the expected life of the product will come to about $23,700.[13]

A lower bound estimate for the injury cost differential might be based on the lower 95 percent confidence bounds of the relative risk factors for 3-wheel ATVs described above, or 1.5 instead of 3.1. Based on these relative risk estimates, the non-fatal injury cost differential on a 3-wheel ATV would be about $877 per year. Assuming a 9 year useful life and a 3 percent discount rate, this comes to a difference of $6,830 over the life of an ATV.[14]

The injury cost differential would be offset somewhat by the lower retail costs of 3-wheel ATVs. Based on information from the late-1980s, when 3-wheel ATVs were still being produced, 3-wheeled ATVs cost about $190 less than a similar 4-wheel model.[15] This cost differential would probably amount to about $300 in 2004 dollars.

Thus, the total costs associated with 3-wheeled ATVs (including both the injury costs and the costs of purchasing the ATV) might amount to about $23,400 ($23,700 in injury costs less $300 in retail costs) more than the costs of a similar 4-wheel ATV (over its useful product life). At the lower bound level, the difference would amount to about $6,530.

A ban of 3-wheel ATVs would therefore be beneficial (on average) if the average extra valuation (i.e., use value or utility) that individuals put on a 3-wheel ATV over a 4-wheel ATV is

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[12] An analysis of fatal injury risks also suggested a higher relative risk on 3-wheel ATVs. However, because information regarding a key driver characteristic was missing, the difference in fatal injury risks was less amenable to quantification and, therefore, not included in the above analysis. It suggests however, that the cost differential between 3-wheel and 4-wheel ATVs estimated above could be low (see Gregory B. Rodgers, "Revisiting All-Terrain Vehicle Risks: Response to Critique," Journal of Regulatory Economics, Vol. 10 (September 1996)

[13] This is a low estimate of the average life of an ATV. One analysis suggests that the expected life of an ATV could be 19 years (Statement of Ed Heiden of Heiden Associates at the Consumer Product Safety Commission West Virginia Public Field Hearing, Morgantown, West Virginia, 5 June 2003).

[14] Even if a higher discount rate were used, the cost differences would be substantial. For example, if a 7 percent discount were used with the lower estimates of the relative risks, the expected cost difference over the life of an ATV would be $5,713.

[15] Rodgers and Rubin, (1989).

less than $23,700 (or about $6,530 at the lower bound) over the useful life of the product. Consequently, if the utility from a 4-wheel ATV is not substantially different from the utility from a 3-wheel ATV, the ban would be justified.

We cannot estimate the utility that individuals get from ATVs, and so we cannot say that the ban would be justified for all individuals. However, available evidence suggests that for most individuals, the utility differential is minimal. First, 4-wheel ATVs were growing in market share throughout the 1980s, even though their retail prices were marginally higher than similar 3-wheel ATVs. By 1986, for example, two years before the consent decrees became effective, about 80 percent of ATVs sold in the US had four wheels. Second, after the ATV manufacturers agreed to stop producing and selling 3-wheel ATVs as part of the consent decrees, the market price of used 3-wheel ATVs actually declined relative to the price of 4-wheel models.[16] There was no evidence of a strong market reaction to the 3-wheel ATV stop-sale, such as bidding up the price of the increasingly scarce 3-wheelers that would suggest many consumers valued 3-wheel ATVs significantly more than they valued 4-wheel models.

Speed Limitations on ATVs Intended for Youths

The staff's draft proposed rule would limit the maximum speeds of ATVs intended for children under the age of 16 years. ***Teen ATVs*** (i.e., those intended for riders between 12 and 15 years of age) would have a maximum unrestricted speed of 30 mph and a speed limiting device that can limit the maximum restricted speed to 15 mph. ***Pre-Teen ATVs*** (i.e., those intended for children between 9 and 11 years of age) would have a maximum unrestricted speed of 15 mph and a speed limiting device that can limit the maximum restricted speed to 10 mph. ***Junior ATVs*** (i.e., those intended for children between 6 and 8 years of age) would have a maximum speed of 10 mph. No ATVs would be recommended for children under the age of 6 years. All references to engine size, such as those in the LOUs, would be eliminated.

Based on an analysis by the CPSC Division of Human Factors (ESHF), speed – not engine size – is a more appropriate control variable for determining which ATVs should be recommended for children under age 16 years.[17] In fact, limiting engine size could be counterproductive. There is some evidence that limiting the power of youth models by controlling engine size can, in some circumstances make ATV riding less safe. As one example, underpowered children's models have a greater potential for stalling when going uphill.

It is also likely that engine size restrictions discourage some people from purchasing appropriate ATVs for young riders. If the ATV engine lacks sufficient power for things such as acceleration or hill climbing, some young riders may resist riding these ATVs and instead ride adult ATVs. Additionally, the frame size of the current ATVs with less than 90 cc engines might not comfortably fit "large" children. Some adolescents between the ages of 12 and 14 are larger than some adults; these adolescents may resist using an ATV with a frame designed to fit a much

[16] Gregory B. Rodgers, "All-Terrain Vehicles: Market Reaction to Risk Information," Economic Inquiry, Vol. 31, No. 1 (January 1993).

[17] Johnson, "ATV Age Guidelines," (2006).

smaller person. According to ESHF, "fitting the [ATV] frame anthropometrically to the user is one of the most important factors for youth ATVs. If the frame is too small, the youth will be discouraged from riding the ATV both physically and socially."[18] This may explain, at least in part, the fact that relatively few children actually ride the youth models. Based on the 2001 exposure survey, only about 20 percent of children under age 16 years of age who drove ATVs drove youth models.[19]

Based on these considerations, eliminating the engine size limitations from youth models may enhance safety. It might lead to some ATV manufacturers introducing a wider variety of youth models, including models with larger frames and more powerful engines. With larger frames and more power, it is possible that more young riders will be willing to accept ATVs with the recommended speed restrictions. It is also likely that more parents would be willing to purchase youth models with larger frames that could be used by children for a longer period of time without replacement. Moreover, increased acceptance of ATVs with the age-recommended speed restrictions could reduce the number of ATV-related injuries.[20]

Increasing the number of youth ATVs with larger frames could also increase safety by increasing the proportion of young ATV drivers that receive formal ATV safety training. Most formal ATV safety training programs, such as that run by the ATV Safety Institute, will not train children under the age of 16 unless they are riding an appropriate youth model. Therefore, children who do not have ATVs with less than 90cc engines cannot receive formal training. If simplifying the age recommendations for ATVs leads manufacturers to introduce more ATVs with the recommended speed restrictions for young riders and, as a result, more children begin riding youth ATVs, it will be possible for more young riders to receive formal safety training. As discussed more fully below, formal training can act as a surrogate for experience and thereby reduce the risk of injury.

The speed limitations for ATVs intended for youths should not impose additional costs on manufacturers because they are similar to those already in the voluntary standard (ANSI/SVIA-1-2001). Moreover, the speed limitations in the draft proposed standard are less restrictive than the requirements for youth ATVs specified in the LOUs, since they do not include the engine size limitations. Consequently, the staff believes that this provision of the draft proposed standard increases the potential for safety in the form of reduced injuries and deaths, without imposing additional costs and burdens on manufacturers.[21]

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[18] "Johnson, "ATV Age Guidelines," (2006). p. 5.

[19] Mark S. Levenson, All-Terrain Vehicle 2001 Injury and Exposure Studies, U.S. Consumer Product Safety Commission, Washington DC (2003), p. 22.

[20] It should be noted that manufacturers are not now prohibited from producing youth ATVs on larger frames. However, increasing the options available to manufacturers in designing youth ATVs should increase the probability that manufacturers might manufacturer youth ATVs in a wider range of sizes.

[21] ANSI/SVIA-1-2001 does not have an age category that corresponds to "Junior ATV" in the draft proposed rules. CPSC staff believe that the "Junior ATV" market will be a very small segment of the ATV market.

Warnings and Safety Information to be Provided to Consumers

According to ESHF, hazard communications "are crucial for products with hazards that cannot be eliminated through design."[22] The staff's draft proposed rule requires ATV manufacturers, distributors, or dealers to provide several safety warnings to consumers. These will consist of labels or hang tags that, among other things, advise consumers of the age recommendations for ATVs, warn that it is unsafe to allow children to operate ATVs intended for adults or older children, and warn that it is unsafe to carry passengers on an ATV (with the exception of specially designed tandem ATVs). This information will also be required to be contained in the owner's manuals and in a video to be provided to each consumer.

The ATV manufacturers with the greatest share of the market are already conforming to this requirement, which is included in the LOUs negotiated with the major ATV manufacturers. Therefore, this provision will not impose any new costs on these manufacturers. For the manufacturers that are not now in conformance, the cost to bring themselves into conformance will be low on a per unit basis. The cost of designing, printing, and attaching a label or hang tag or adding pages in an owner's manual is low. Even for manufacturers with a very low sales volume, the cost of adding the required warnings will be probably no more than a few dollars per vehicle.

The major manufacturers are already providing the safety video. Therefore, the staff's draft proposed rule would have no impact on their costs. For manufacturers that are not currently providing a safety video to their consumers the costs could be higher. The cost of duplicating a video or DVD is no more than a few dollars. However, the cost of producing the safety video could be several thousand dollars. For a manufacturer or distributor with a low sales volume, this could be a more significant cost. The cost or impact could be lower if a third party video could be licensed or shared by many small manufacturers or distributors.

Manufacturers would also be required to keep a copy of the owner's manuals and the safety video for each model on file for at least 5 years. It is likely that many manufacturers would do this even in the absence of a mandatory rule. The storage costs of these items probably would not exceed $10 per model. The cost could be lower since the same safety video would likely be used for all ATV models produced or imported by a manufacturer and could be used for several years. Owner's manuals also might cover more than one model.

The benefit of this provision is that it will ensure that all consumers receive some basic safety and hazard information regarding such things as the risk of children riding ATVs not appropriate for their age and carrying passengers on ATVs not designed for carrying passengers. Although this benefit cannot be quantified, the following example sheds some light on the potential impact. The risk of injury for riders under the age of 16 driving adult ATVs is about twice the risk of injury of those who are driving age-appropriate ATVs.[23] In 2001, the societal

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[22] Timothy P. Smith, "Minimum Requirements for ATV Hangtags, On-Product Labels, and Manual Warnings," CPSC Memorandum to Elizabeth Leland, Consumer Product Safety Commission, Washington DC (2006).

[23] According to information provided by the CPSC Directorate for Epidemiology and included in the 2005 CPSC Briefing Package on ATVs (regarding Petition No. CP-02-4/HP-02-1, Request to Ban All-Terrain Vehicles Sold for

cost of ATV related injuries and fatalities involving children under the age of 16 was about $3.6 billion. Therefore, although it is not known how effective these warnings are at reducing children from riding adult ATVs, if they reduced the number of children riding adult ATVs enough to reduce the number of ATV-related injuries to children (either by parents not allowing a child to drive an adult ATV or by purchasing an appropriate ATV for young riders) by even a small amount, the benefits of these warnings could exceed the costs. For example, if they reduced the injuries by only one-half of one percent, this would still amount to a benefit of $25 over the life of an ATV.[24]

Disclosure Statement to Consumers About the Risks to Children Riding Adult ATVs

The staff's draft proposed rule would require that ATV retailers provide purchasers of adult ATVs a written statement that 1) clearly states adult ATVs are not intended for the use of children under the age of 16 and 2) provides the consumer with specific information on the possible injury consequences of allowing children to ride adult ATVs. A similar disclosure statement would be provided purchasers of youth ATVs advising them to monitor their child's ATV driving to ensure that the child is capable of and does drive the ATV safely. Suggested drafts of these disclosure statements are contained in memoranda from ESHF (Tabs J and L).[25] This requirement is a direct response to the high risk of injury to children riding adult ATVs, and the comments of many parents (including some whose children died on adult ATVs) that they had never been warned of the risks. This disclosure would be provided to the purchaser and signed before the purchaser completes or signs other documents related to the sale, such as sales contracts or financing agreements. Consumers will be required to sign the statement to acknowledge that they were warned. Dealers would be required to keep the signed disclosure statement on file for 5 years after the purchase so that compliance with the requirement for the disclosure statement can be monitored. Dealers would also be required to send a copy of the signed disclosure statement to the manufacturer, who would also be required to keep the statement on file for 5 years after the purchase.

The benefits of the disclosure statement are twofold. First, it will help consumers make a more informed choice when they purchase a new ATV. Second, as suggested by the ESHF analysis, signing the document may discourage some purchasers from allowing children to ride their adult ATVs.[26] As shown in the above discussion of "Warnings," the injury costs associated with children riding adult ATVs are significantly higher than the injury costs associated with children riding age-appropriate ATVs. Even if the disclosure statement could reduce the number

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Use by Children Under 16 Years Old), risk of injury to children under 16 driving adult ATVs was 18.6 per thousand drivers compared to 9.6 per thousand drivers for children driving youth ATVs.

[24] One-half of one percent of $3.6 billion divided by the 5.6 million ATVs of all types in use in 2001 is $3.21. Over the expected 9-year life of an ATV this comes to about $25 discounted at 3 percent per year.

[25] Johnson, "ATV Age Guidelines," (2006) and Timothy P. Smith, "Proposed disclosure statement for adult ATV purchasers," CPSC Memorandum to Elizabeth Leland, Consumer Product Safety Commission, Washington DC (2006). Hereafter cited "Smith (2006).

[26] Smith (2006).

of injuries by one-half of one percent, it could still produce a benefit of $25 over the life of an ATV.

The cost of this disclosure statement is estimated to be approximately $0.95 per ATV sold.[27] Generally, when ATVs are sold there is already some amount of paperwork generated, including purchase contracts and financing agreements. Therefore, the marginal cost of an additional form is minimal. Moreover, under the LOUs manufacturers already require their dealers to inform consumers of the age recommendations for ATVs and to monitor dealer compliance with these recommendations. It is possible that the enforcement mechanism provided by this disclosure statement would be no more costly than the current methods of monitoring compliance with the LOUs.

Provision of Training for ATV Purchasers

The training requirement of the staff's draft proposed rule would require manufacturers or distributors of ATVs to provide a training certificate to each purchaser of a new ATV that entitles the purchaser and any qualified member of his or her immediate family to attend an authorized training course, "free" of charge. Of course, the training will not be free in terms of the trainee's time. The trainee would have to devote a day to the training process, and may have to transport an ATV to the training site. In the case of children, parents would likely need to become involved by providing transportation to the training site. Hence, the provision of the "free" certificate entitling the holder to training can be thought of as a subsidy to encourage new purchasers to take the training.

The cost of the training to be provided will depend upon a number of factors, such as the length of the course, the number of trainers, the number of enrollees, and others. However, if the training is similar to that currently provided by the ATV Safety Institute (ASI), the value of the training certificate entitling the holder to a training course might be $75 to $125. This is what ASI currently charges children and adults respectively for the course, as indicated at their website (www.atvsafety.org). Thus, the value of the training subsidy, under this requirement of the proposed standard, might be $75 to $125 per trainee.

The requirement that manufacturers offer free training is essentially a requirement that they subsidize ATV safety training. The purpose of a subsidy is to lower the cost of a product to a person to induce them to purchase more of the product. It can be an appropriate policy when it is believed that consumers will not purchase the socially optimal quantity of the good without some intervention. A consumer might not purchase the optimum quantity of a good for a variety of reasons, such as some of the societal benefit of purchasing the good (or undertaking an activity) might go to people other than the direct consumer or if the consumer underestimates the value of the good to himself or herself.

[27] This estimate is based on it taking approximately 2 minutes to complete the form and distribute the copies to the purchaser, the manufacturer, and the retailer's files and that the time is valued at $21.32/hour, which is the average wage of motor vehicle sales workers in July 2004, as reported by the U.S. Department of Labor, Bureau of Labor Statistics, adjusted for inflation. Other costs, such as the cost of the blank forms and postage, may add another $0.24 to the cost.

In the case of ATV safety training, it is likely that many consumers underestimate the benefits of training. According to ESHF, ATVs can appear "deceptively easy" to operate but in fact require "repeated practice to drive safely." Even at low speeds ATV drivers need to have "situational awareness necessary to negotiate hazards on unpaved terrain" and make "quick judgments" with regard to steering, speed, braking, weight shifting, and terrain suitability.[28] Consumers who underestimate the difficulty of riding ATVs may conclude that the cost of the training, including the costs in terms of time and travel, will exceed the benefits. It is likely that more consumers will be induced to take training if the manufacturers emphasize the importance of training to consumers and offer them free training,

The benefits of training to new ATV drivers could be substantial. ESHF indicates that training may act as a surrogate for experience because it exposes new ATV drivers to situations they will encounter riding off-road and teaches them the proper driving behavior to navigate those situations. The Directorate for Epidemiology estimates, based on the results of the 2001 ATV injury and exposure surveys, that formal training may reduce the risk of injury by about half.[29] The application of this result, in combination with the HF finding that training may function as a surrogate for driving experience, allows us to quantify the possible benefits of training.

A recent ATV risk analysis found a strong inverse relationship between driving experience and the risk of hospital emergency department (ED) treated injury.[30] Based on this analysis, risk in the first year of riding was about 65 percent higher than the risk in the second year, and about twice the risk of the third year. Assuming that formal training reduces risk by half in the first year of ATV use (i.e., acts as a surrogate for experience), the risk of ED injury for a male driver under the age of 36 on a 325 cc four-wheel ATV, would decline by about 0.0083. According to the CPSC's Injury Cost Model, the average societal cost of an ATV-related ED injury amounted to about $60,250 in 2004 dollars. Consequently, the expected benefits of training would amount to about $500 (0.0083 * $60,250) per new rider taking the training. The risks for female drivers are less than for males. Using the same approach, the ED risk reduction for new female riders (under age 36, and on a 325 cc, four-wheel ATV) in the first year would be about 0.0029. The expected benefit of training an inexperienced female driver would therefore be about $175 (0.0029 * $60,250). Given that about 63 percent of drivers were male in 2001, the average risk reduction for male and female drivers would amount to about 0.0063; the expected benefits would average about $380 (i.e., 0.63($500) + 0.37($175)).

In addition to preventing non-fatal ED injuries, training would also likely reduce ATV-related injuries initially treated outside of hospital EDs and ATV-related deaths (see the appendix). While the risk model formally applies to ED injuries, it does not seem unreasonable to assume that the impact of training on non-ED injuries and deaths would be similar.

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[28] Hope E. Johnson, ATV Training, CPSC Memorandum to Elizabeth Leland, U.S. Consumer Product Safety Commission, Washington, DC (2006). Hereafter cited "Johnson, ATV Training (2006).

[29] Robin L. Ingle, "Explanation of Trained ATV Rider Risk Statement," CPSC Memorandum to Elizabeth Leland, U.S. Consumer Product Safety Commission, Washington, DC (2006).

[30] Rodgers and Adler (2001).

Consequently, if the relationships in the risk model apply proportionally to non-ED injuries and deaths, the expected non-fatal injury reduction benefits for a typical new driver (weighted by the proportion of male and female drivers) would amount to about $220 and the expected benefits associated with the reduction in deaths would amount to about $170 per trainee.[31]

Based on this analysis, the expected benefits of training new riders could therefore amount to about $770 ($380 + $220 + $170) per rider. Factoring in reasonable estimates of the costs of the training to the consumers, the benefit of training for new riders should exceed the costs. For example, if the course fee is $125 and a trainee must give up 10 hours to take the course (including transportation to and from the training site) then the cost of training to a consumer who valued his or her time at $17 per hour would be about $295.[32] Consequently, the net benefits of training to this consumer would be about $475.

A major assumption in this cost-benefit comparison is that riders taking advantage of the training program would be inexperienced drivers who would take the training early in the first year of ATV riding. The expected benefits would be lower if the training were taken later. For example, if the analysis just completed had assumed the training were taken in the second year of ownership (rather than the first), the estimated gross benefits would have been about $470. Note, however, that while net benefits would have been lower (about $175), they are still positive. Hence even if some riders take the training after the first year of riding, the benefits of the training are still likely to exceed the costs. This suggests that the results of the cost-benefit comparison may not be very sensitive to the timing of the training.

ATV manufacturers that account for about 90 percent of all U.S. ATV sales already offer free training to their consumers.[33] Therefore, the primary impact of this requirement will be to extend the free training offer to people who purchase ATVs from manufacturers or importers that do not now offer free training. These manufacturers account for about 10 percent of total domestic ATV sales.

In spite of the offers of free training and other incentives, few ATV riders take formal safety training. Based on the 2004 Rider Training Summary provided by the SVIA, about 35

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[31] These calculations were based on information provided in the appendix. According to the appendix, there were about 1.49 non-ED injuries for every ED injury in 2001. If the reduction in risk associated with preventing non-ED injuries were proportional to the reduction in the ED injury risk, the reduction would amount to 0.0093 (0.0063 * 1.49). And, since the costs of the non-ED injuries averaged about $23,700, the expected benefits from preventing these injuries would be about $220 (0.0093 * $23,700) per trainee. Similarly, there were about 0.0054 deaths for every ED-injury. Consequently, if the reduction in the fatality risk were proportional to the reduction in the ED injury risk, the reduction would amount to about 0.000034 (0.0063 * 0.0054). Assuming a value of statistical life of $5 million, the expected benefits of reductions in the fatality risk would amount to about $170 per trainee.

[32] The SVIA sponsored training for new riders is approximately one-half day in length. Assuming that a trainee must give up 10 hours to take the training allows for travel to and from the site. The "value of time" estimate is based on the average net compensation for 2004 as reported by the Social Security Administration ($34,197.63 for the year, which is about $17 per hour).

[33] In addition to offering free training, some ATV manufacturers offer additional incentives to encourage first-time buyers to take ATV safety training. For example, in addition to providing free training, some manufacturers give first-time purchasers an additional $100 if they complete the training. Some manufacturers also offer the free training to other members of the purchaser's family.

percent of first-time ATV purchasers who were offered this training by member firms took advantage of it. Since first-time purchasers accounted for about 20 percent of new ATV purchases, this suggests that only about 7 percent of all purchasers of new ATVs actually took the training. Assuming that this pattern will hold for the manufacturers or importers that are not now offering free training, one can expect that perhaps 7 percent of their consumers will take the training. Approximately 950,000 ATVs are sold annually.[34] Because manufacturers that do not already offer free training account for about 10 percent of the market, this provision would likely increase the number of riders trained annually by 6,000 to 7,000 (.07 x 92,000). If the benefits of the training are $770 per trainee and the cost of the training is $295, this could result in a net benefit of about $3.3 million annually (($770 - $295) x 7,000).[35]

There would be some recordkeeping costs imposed on retailers and manufacturers by the staff's draft proposed rule. The retailers would be required to prepare a training certificate that entitles each qualified member of the purchaser's immediate family and obtain the purchaser's signature on a form that acknowledges the receipt of the free training certificate. The signed original of this form must be kept by retailer and copies provided to both the purchaser and the manufacturer.

The cost of preparing and filing the training certificates and acknowledgement forms is estimated to be about $1.38 per ATV sold. This is based on it taking approximately 1 minute to complete the training certificate and the acknowledgement form. An additional minute might be required to distribute the copies of the forms to the purchaser, the manufacturer, and the retailer's files. Time is valued at $21.32.[36] The cost of the blank forms, postage, and other supplies, accounts for the remaining $0.31.

Means for Reporting Safety Complaints and Concerns

The staff's draft proposed rule will require that each manufacturer provide consumers with a means of relaying safety or hazard related information concerning an ATV to the manufacturer or importer. Manufacturers must make available for this purpose a domestic telephone number and mailing address, and a website or email address. This contact information must be contained in the owners' manuals. The owner's manuals will also be required to provide consumers with the instructions for reporting safety or hazard information to the CPSC.

This provision could provide manufacturers with an early alert if there is a potential hazard or defect with one of its products. This could allow manufacturers to take preemptive actions to minimize the risk of injury due to the problem. However, this benefit cannot be

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[34] Sales estimate is for 2006, Terrance R. Karels, "Current Market Conditions – ATVs", CPSC Memorandum to Elizabeth Leland, Project Manager, ATVs (2006).

[35] The $770 benefit was estimated earlier in this section. The cost estimate includes the course fee and the value of the consumers' time.

[36] This is the average hourly wage of motor vehicle sales workers. reported by the Bureau of Labor Statistics in July 2004 (inflated to 2006 dollars)

quantified because we cannot predict how frequently such a problem will occur or how reliably it will be reported to the manufacturer by consumers.

However, the cost of providing a means to report safety related problems is low. Virtually all manufacturers or distributors that sell ATVs in the U.S already have domestic telephone numbers, addresses, and internet sites. The additional cost of adding a label with this contact information number to an ATV and inserting this information in an owner's manual is very low. In fact, many manufacturers and distributors already do this.

Discussion

CPSC has been monitoring ATV-related injuries and promoting ATV safety since the early 1980s. Over that time, it has negotiated several voluntary agreements with major ATV manufacturers that have improved the safety of ATVs, encouraged formal safety training for ATV riders, and promoted safe ATV riding practices. However, as the ATV market has grown, new manufacturers and importers have entered the market that are not party to any voluntary agreements with the CPSC with regard to ATV safety. As the number of new participants increases, it becomes increasingly difficult to maintain voluntary agreements with all manufacturers and importers. In the absence of either mandatory requirements or voluntary agreements, CPSC has no effective mechanism for enforcing safety standards and practices. Moreover, if the market share of manufacturers and importers that are not party to any agreement with the CPSC increases, manufacturers that are parties to agreements may resist renewing the voluntary agreements.

The staff's draft proposed rule would ensure that key elements of the voluntary agreements are extended to all ATV manufacturers and distributors. Because manufacturers and distributors that account for about 90 percent of the market already conform to these requirements (and much of the remaining 10 percent conform to at least some of the requirements) the draft proposed standard may not significantly lower the number of injuries from their current levels. However, it will establish some minimum enforceable standards that all firms that sell ATVs in the U.S. will be expected to meet.

Where the benefits and costs of the individual provisions can be quantified, this analysis has shown that the benefits are expected to exceed the costs (i.e., a ban on 3-wheel ATVs and training inexperienced ATV riders). For other provisions, the costs of complying with the standard will be low on a per unit basis (i.e., providing warning labels and safety information at the point of sale, a safety video, and means for reporting safety hazards or concerns to the manufacturer). Although the benefits of these cannot be quantified, they provide consumers with information that may help them choose an appropriate ATV for the rider and may reduce some unsafe riding behaviors. The costs of complying with each element of the requirements of the mechanical standard have not been quantified. However, each of the requirements would provide some safety benefits. Moreover, the vast majority of ATVs sold are already thought to be in compliance.

Alternatives to the Staff's Draft Proposed Rule

The Commission could consider alternatives to the staff's draft proposed rule including continuing to pursue voluntary actions rather than a mandatory rule. Other alternatives include adopting some parts of the staff's draft proposed rule, but not others. Additionally, the staff considered other requirements for headlamps and training.

Not Adopting a Mandatory Rule and Continuing to Pursue Voluntary Actions

CPSC has been successful in gaining the cooperation of the largest ATV manufacturers and some of the smaller ones in working voluntarily to reduce the number of ATV-related injuries. However, entry into the ATV market is relatively easy. The number of manufacturers and importers has increased substantially in even the last few years: from about 7 manufacturers and importers in 1995, to more than 87 today. As the number of manufacturers increases it will be increasingly difficult to negotiate voluntary agreements with every one. To the extent that some new entrants do not conform to the agreements, there could be some economic pressure on others to limit their cooperation in the future.

It should also be noted that promulgating a mandatory rule does not rule out future CPSC efforts, either voluntary or mandatory, to further improve ATV safety.

Promulgating Portions of the Staff's Draft Proposed Rule

Each of the major provisions of the staff's draft proposed rule (e.g., mechanical requirements, ban of 3-wheel ATVs, and so on) could be considered independently. If the Commission believes that the benefits of any of the individual provisions do not bear a reasonable relationship to the costs, or for some other reason should not be mandated, it could exclude those provisions from a proposed rule.

Allowing Headlamps on Youth ATVs

The justification for the prohibition of headlamps on youth ATVs is to discourage children from riding after dark. Riding after dark is believed to be a significant risk factor for children. Also it can be difficult to supervise children riding ATVs in low light conditions. The staff believes that allowing headlamps on youth ATVs would encourage children riding after dark.[37]

There is a counter argument that if some children ride after dark or in low light conditions anyway (or if they do not return from a trip begun during daylight before dark) then allowing headlamps on youth ATVs could reduce the risk of injury by better illuminating the rider's path.

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[37] Sarah B. Brown, "ATV Lighting," CPSC Memorandum to Elizabeth Leland, Consumer Product Safety Commission, Washington, DC (2006).

It is also possible that the prohibition could cause some young teens to ride adult ATVs if they were involved in some ATV-related activities with parents or older siblings after dark. This could increase the injury risk since, as described earlier, the risk of injury for a child riding an adult ATV is twice that of riding a youth ATV.

The CPSC staff do not have the data to provide statistical support to either argument. However, in the judgment of ESHF, the decrease in injuries resulting from discouraging after-dark riding by children by prohibiting headlamps on youth ATVs probably outweighs the increase in risk to those children who might still occasionally ride after dark.

Not Mandating Stop Lamps

As an alternative to mandating stop lamps, the CPSC staff considered following ANSI/SVIA-1-2001 by allowing, but not requiring, stop lamps on all ATVs. Currently, CPSC staff believe that most adult ATVs have stop lamps, but most youth ATVs do not. If stop lamps were not mandated, the practice of installing stop lamps on adult ATVs, but not youth models, is likely to continue. This is probably due in part to the lower added cost of installing stop lamps on adult ATVs, where some of the steps can be combined with the installation of tail lamps that are already required.

The benefit of stop lamps is that they can alert a driver when the driver of a leading vehicle has applied his or her brakes, which can increase the chance of the trailing driver reacting appropriately, either by applying his or her own brakes or taking evasive maneuvers and avoiding a rear-end collision. It can be anticipated that there are situations where ATVs would be traveling in a row on a trail and a driver may stop unexpectedly. While the staff have not been able to quantify the benefits, in some cases, the activation of a stop lamp may help to avoid a collision.

The cost of including stop lamps on ATVs is the cost of the materials (e.g., bulbs, switches, wiring, and lenses) and labor to install the stop lamps during the manufacturing process, and the cost of redesigning the body of the ATV to accommodate the stop light housing. This cost has not been quantified. Although the cost is not expected to be very expensive in absolute terms, the cost could amount to several dollars or more per ATV, especially in the case of youth ATVs that are not currently equipped with any wiring for lighting.

More Stringent Training Requirements

The staff considered including more stringent training requirements in the draft proposal, including requiring that at least 8 hours of training, along with specific requirements for written and riding tests, be provided, and that the student-teacher ratio not exceed 4:1. The minimum time requirements would be intended to ensure that there would be sufficient time to cover all topics that should be covered in a safety course and to give each student enough time to practice each skill until they had reached a satisfactory level of proficiency. The written and riding tests would provide a mechanism for the instructor to give the student specific feedback concerning

his or her performance. A student-teacher ratio of 4:1 would ensure that each student gets individual attention.[38]

However, there are drawbacks to mandating the more stringent requirements outlined above. The training program of the ATV Safety Institute, which is the leading ATV safety training provider, is approximately one-half day in length, there are no written or driving tests, and a 4:1 student-teacher ratio is encouraged but not required. Therefore, mandating the more stringent requirements could increase the cost of the training from its present level. Mandating a minimum length for the training and mandating a lower student-teacher ratio could possibly reduce the availability of training. Moreover, some new ATV purchasers who are willing to set aside the time to participate in a one-half day training program might not be willing to set aside a full day for the program, which for some trainees could include an overnight stay if the training site was a substantial distance from their home.

Small Business Impact

A substantial number of the more than 87 ATV manufacturers or importers and an unknown number of retailers of ATVs are small businesses. The CPSC staff examined the potential impact on small businesses and prepared an Initial Regulatory Flexibility Analysis of the staff's draft proposed rules (Tab J).

ATV importers will be required to ensure that their ATVs comply with the mechanical requirements specified in the staff's draft proposed rule and maintain adequate documentation supporting their compliance. Importers that do not actually manufacture ATVs may work with their suppliers to perform the necessary tests and prepare the documentation. Most ATVs sold in the U.S., including some imported by small businesses, are already thought to comply with these requirements.

ATV manufacturers and retailers will have to ensure that the purchasers are provided with the warnings, safety information, and opportunity for free training specified in the draft proposal. However, the costs for supplying these are low, on a per vehicle basis, and should not pose a disproportionate burden on small businesses.

ATVs are almost always only one line of business even for the small importers and retailers. Typically, these firms sell other motorized vehicles, such as scooters, motorcycles, pocket bikes, and farm equipment.

Environmental Considerations

CPSC actions that establish safety standards, design or performance requirements or product certification or labeling rules normally have little potential impact for affecting the environment and are considered to be "categorical exclusions" for the purposes of the National

[38] Johnson, "ATV Training," (2006).

Environmental Policy Act (16 CFR § 1021.5(c)(3)). Therefore, environmental assessments are not normally completed for these actions. Moreover, most of the ATV industry is already thought to be in conformance with most of the provisions of the draft proposed standard. Therefore, it is unlikely that substantial changes will be made in production practices nor will a substantial number of products require modification or disposal.

Appendix: Societal Costs of ATV-Related Injuries and Deaths, 2001

This appendix discusses the costs of ATV-related injuries and deaths for 2001, the last year in which we have both injury and exposure information on the characteristics of riders and ATVs in use.

Costs of nonfatal injuries. The societal costs associated with nonfatal injuries involving ATVs can be estimated with the CPSC's Injury Cost Model (ICM), a computer model fully integrated with the National Electronic Injury Surveillance System (NEISS) and designed to estimate the costs of product-related injuries. The ICM estimates the four major costs of injury: the costs associated with medical treatment, work loss, the intangible costs associated with pain and suffering, and liability costs.[39]

In addition to estimating the costs of injuries treated in U.S. hospital emergency departments (ED) and reported through NEISS, the ICM model uses empirical relationships between ED injuries and medically attended injuries treated in other settings (e.g., physicians' offices, clinics, ambulatory surgery centers, and direct hospital admissions) to estimate the number, types, and costs of injuries treated outside of hospital EDs. Thus, the ICM allows us to expand on NEISS to estimate the total number of medically attended injuries and their costs, across all treatment levels.

Based on estimates from NEISS, there were about 110,100 ATV-related injuries treated in hospital emergency departments (ED) in 2001. About 13,500 (12.3 percent) resulted in hospitalization; 96,600 (87.7 percent) on the injured were treated and released from the ED. According to the ICM, the aggregate costs of these injuries (in 2004 dollars) amounted to $6.634 billion, or about $60,250 per injury. About 63 percent of these costs were associated with pain and suffering; about 37 percent were associated with medical costs and work losses. Since there were an estimated 5.6 million ATVs in use in 2001, the annual ED injury costs amounted to about $1,184 per ATV in use.

According to ICM estimates, there were also an estimated 163,500 medically attended injuries that were initially treated at other settings, including physicians' offices, clinics, ambulatory surgery centers, and direct hospital admissions. The aggregate estimated costs of these injuries amounted to about $3.878 billion, or about $23,700 per injury. About 75 percent of these injury costs were associated with pain and suffering. Additionally, given the estimated 5.6 million ATVs in use, these annual non-ED injury costs amounted to about $692 per ATV in use.

Costs of fatal injuries. In 2001, there were an estimated 599 deaths involving ATVs (Ingle, 2005).[40] If we assume a societal cost of $5 million for each death, a cost estimate that is

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[39] Ted R. Miller, et al., *The Consumer Product Safety Commission's Revised Injury Cost Model, Final Report to the U.S. Consumer Product Safety Commission*, Public Services Research Institute, Calverton, Maryland, December 2000. It is available from the CPSC website (in 2 files) at http://www.cpsc.gov/LIBRARY/FOIA/FOIA02/os/Costmodept1.pdf and http://www.cpsc.gov/LIBRARY/FOIA/FOIA02/os/Costmodept2.pdf.

[40] Robin L. Ingle, 2004 Annual Report of ATV Deaths and Injuries, U.S. Consumer Product Safety Commission, Washington, DC (2005).

consistent with estimates of the value of a statistical life in the existing literature,[41] the societal costs of these deaths may have amounted to about $2,995 million. Additionally, given the estimated 5.6 million ATVs in use, these annual fatality costs amounted to about $535 per ATV in use.

Summary. In total, the estimated costs of ATV-related injuries and deaths amounted to about $13.5 billion in 2001, about $2,400 per ATV in use.

[41] W. Kip Viscusi, "The Value of Risks to Life and Health," The Journal of Economic Literature, v. 31 n. 4 (1993).

All Terrain Vehicles: Initial Regulatory Flexibility Analysis

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All Terrain Vehicles: Initial Regulatory Flexibility Analysis

Introduction

The staff of the U.S. Consumer Product Safety Commission (CPSC) has developed, for Commission consideration, a draft rule that would establish a mandatory safety standard for all terrain vehicles (ATVs). This rulemaking proceeding was initiated by an advance notice of proposed rulemaking (ANPR) that was published in the Federal Register on 14 October 2005. The main provisions of the draft proposed rule include 1) mechanical requirements for ATVs, 2) a ban on the sale of new three-wheel ATVs, 3) speed limitations on ATVs intended for children under 16 years of age, 4) requirements for warnings and safety information to be provided to purchasers of new ATVs through hang tags, labels, videos, and owner's manuals, 5) requirements for a disclosure statement to be provided to purchasers warning against the use of adult ATVs by children, 6) a requirement that all purchasers of new ATVs be offered free safety training, and 7) requirements that purchasers of new ATVs be provided with a means for reporting safety related complaints to the manufacturer and the CPSC.

The Regulatory Flexibility Act (RFA) requires that rules proposed by the Commission be reviewed for their potential economic impact on small entities, including small businesses. Section 603 of the RFA calls for the Commission to prepare and make available for public comment an initial regulatory flexibility analysis describing the impact of the proposed rule on small entities and identifying impact-reducing alternatives. The initial regulatory flexibility analysis is to contain:

1) a description of the reasons why action by the agency is being considered;

2) a succinct statement of the objectives of, and legal basis for, the proposed rule;

3) a description of and, where feasible, an estimate of the number of small entities to which the proposed rule will apply;

4) a description of the projected reporting, recordkeeping and other compliance requirements of the proposed rule, including an estimate of the classes of small entities subject to the requirements and the type of professional skills necessary for the preparation of reports or records; and

5) an identification, to the extent possible, of all relevant Federal rules which may duplicate, overlap, or conflict with the proposed rule.

In addition, the initial regulatory flexibility analysis must contain a description of any significant alternatives to the proposed rule that would accomplish the stated objectives of the applicable statutes and that would minimize any significant economic impact of the proposed rule on small entities.

Reasons for Agency Action

The staff's draft proposed rule address the risk of death and injury associated with ATVs. In 2003, there were an estimated 740 deaths and an estimated 136,100 hospital emergency department treated injuries. Historically, about one-third of the reported deaths associated with ATVs have been to children under the age 16 years.

Objectives of and Legal Basis for the Staff's Draft Proposed Rule

CPSC has negotiated voluntary agreements, which are generally referred to as "letters of undertaking" (or "LOUs"), with the major ATV manufacturers and distributors to ensure that the ATVs meet certain minimum safety standards and to ensure that certain warnings and safety instructions are provided to ATV consumers. The staff's draft proposed rule would incorporate the major provisions of these voluntary agreements into a mandatory safety standard. This will provide CPSC with a mechanism to ensure that all ATV manufacturers and distributors conform to these requirements, including those with which CPSC does not have voluntary agreements.

Three rules actually make up the staff's draft proposed rule. One rule would establish safety standards for adult ATVs, require that purchasers be provided with certain safety information through labels, hang tags, videos among other methods, and that free training be offered to purchasers. This rule would be issued under the authority of the Consumer Product Safety Act (CPSA). The second rule would ban adult 3-wheel ATVs and would also be issued under the authority of the CPSA. The third rule establishes safety standards for ATVs intended for children under the age of 16 years, require that purchasers be provided with certain safety information through labels, hang tags, videos among other methods, and that free training be offered to the intended riders. This rule also includes a ban of 3-wheel ATVs intended for children. This rule would be issued under the authority of the Federal Hazardous Substances Act (FHSA).

Requirements of the Staff's Draft Proposed Rule

The staff's draft proposed rules essentially mandate many key safety standards and practices that the major ATV manufacturers and distributors, and some smaller ones, have already voluntarily adopted. These include 1) mandating most of the provisions of the existing voluntary standard for ATVs (ANSI-SVIA-1-2001), 2) a ban on the sale of new three-wheel ATVs, 3) speed limitations on ATVs intended for children under 16 years of age, 4) requirements for warnings and recommendations to be provided to purchasers of new ATVs through hang tags, labels, videos, and owners manuals, 5) requirements for a disclosure statement to be provided to purchasers warning against the use of adult ATVs by children, 6) a requirement that all purchasers of new ATVs be offered free safety training, and 7) requirements that purchasers of new ATVs be provided with a means for reporting safety related complaints to the manufacturer and the CPSC.

There are some deviations from the requirements of the LOUs and the voluntary standards in the staff's draft proposed rule. For example, one deviation is that youth model ATVs will be defined in terms of maximum speed alone and not engine size and maximum speed. Additionally, the maximum speed allowed for ATVs intended for children between the ages of 6 and 8 would be 10 miles per hour.

The staff's draft proposed rule would require that all ATVs (including youth ATVs) be equipped with stop lamps. ANSI/SVIA-1-2001 allows, but does not require stop lamps. CPSC staff believe that most adult ATVs already have stop lamps. However, it is believed that most youth ATVs currently lack stop lamps.

The staff's draft proposed rule for youth ATVs would require that all youth ATVs be equipped with automatic transmissions. The staff believe that most youth ATV models already have automatic transmissions, but some are equipped with an automatic clutch instead of a fully automatic transmission.

Another deviation is the requirement for the disclosure statement warning against the use of an adult ATV by children. Currently, the LOUs require ATV distributors to ensure that their dealers do not sell an adult ATV if they are aware that it is for a child under the age of 16 years. However, the LOUs do not require that the purchaser sign a disclosure statement acknowledging the warning against children riding adult ATVs.

Reporting, Recordkeeping and Other Compliance Requirements

It is difficult to estimate accurately the number of small entities that could be impacted for two reasons. One reason is that as noted below, the number of firms participating in the market has increased significantly over the last 10 years. Secondly, it is relatively easy for a firm to enter and exit the market. It is certain, however, that the ATV market has grown significantly in recent years.

Manufacturers (and Importers)

The staff's draft proposed rule imposes some requirements on manufacturers (which includes importers) of ATVs. The number of firms that manufacture or import ATVs is increasing. From the time ATVs were first introduced in the early 1970s until about 2000, virtually all ATVs were manufactured and distributed by a few large firms. Since 2000, the number of smaller importers has increased significantly. The staff now believes that there are at least 87 manufacturers or importers that supply ATVs to the U.S. market. However, seven large manufacturers still account for about 90 percent of the U.S. ATV market. Thus, small manufacturers or importers have a combined market share of perhaps 10 percent of the market.[1]

[1] According to the U.S. Small Business Administration size standards, an ATV manufacturer (NAICS code 336999) with fewer than 500 employees would be considered small and an ATV wholesaler (NAICS code 423110) with fewer than 100 employees would be considered small.

Many of the new entrants are small importers that import ATVs from manufacturers based in Korea, Taiwan, and China. Virtually all manufacturers and importers of ATVs, including the small ones, are believed to manufacture and import products other than ATVs. These other products often include other motorized vehicles, such as motorcycles, motor scooters, go-carts, and mini bikes. In fact, of the ATV import operations that CPSC staff inspected in 2005, none sold ATVs exclusively and most received a majority of their revenue from other products.[2]

The staff's draft proposed rule requires that each manufacturer or importer ensure that the ATVs it sells in the U.S. comply with the requirements specified in the draft rule. Records sufficient to demonstrate compliance must be maintained by the manufacturer or importer for at least 5 years after the production or importation of the model ATV for which the records pertain ceases. The records must be maintained at a location within the United States and be made available for inspection by a representative of the CPSC upon request.

Conducting the tests to ensure that ATVs comply with the mechanical standards will require professional engineering services. ATV manufacturers probably have qualified engineers on staff or can obtain the services of qualified engineers to conduct the tests. The documentation of the tests would likely be completed by the engineer conducting the tests.

The specified tests will require some time and equipment. If the tests are conducted at a facility where the required equipment is available and set up time for each test is kept to a minimum, it is possible that all of the tests could be conducted in one day (8 hours) or less. It is reasonable to assume that the person supervising the tests will be a senior mechanical engineer and that at least one other mechanical engineer will be involved in conducting the tests. If the total labor costs were $90 per hour, then the cost of conducting the tests would be about $720 per model (8 hours x $90).[3]

In addition to the labor cost, some accounting for the cost of equipment should also be made. A manufacturer of complex products, such as motorized ATVs probably already has the facilities and much of the equipment that would be required for the tests for their own quality control purposes. Assuming that much of the equipment is already on hand, easily available, and used for other purposes, it is probably reasonable to assume that the cost of the equipment used in the testing is perhaps about $500. This could be thought of as the rental value of the equipment for a day of testing.

The testing must be documented and maintained for 5 years after the production of that model ceases. The information required for this documentation would be collected during the performance of the tests. However, this information might be reformatted and assembled into the final record after the testing is completed. Moreover, in the case of foreign manufacturers, this documentation will have to be provided to the U.S. based importer and it is the importer that will

[2] Tanya Topka Ivins, "ATVs—Adherence to Voluntary Measures and Consent Decrees," CPSC Memorandum (Restricted) to Elizabeth Leland, U.S. Consumer Product Safety Commission, Washington, DC (2006).

[3] According to the U.S. Department of Labor, Bureau of Labor Statistics, the average wage for a Level 13 Mechanical Engineer was $52.45 in July 2003. In this discussion $90 is used to allow for the assistance of a less experienced engineer and inflation.

be required to maintain the records. This could add perhaps another $100 to the cost of the testing and record keeping.

These estimates suggest that the full testing and recordkeeping costs of the staff's draft proposed rule could be about $1,320 per model. Previously, CPSC staff had identified 131 different ATV models for the year 2001 and 235 different ATV models for the year 2003. Given the significant increase in sales of ATVs in recent years, it is not unreasonable to believe that there might be 500 different ATV models today. Therefore, the full testing and recordkeeping costs could be $660,000 per year, assuming models are changed annually.

Several ATV manufacturers conform to ANSI/SVIA-1-2001 and, therefore, should already be performing the testing called for in the staff's draft proposed rule. The staff's draft proposed rule will not impose additional testing burdens on these manufacturers. The staff estimates that these manufacturers account for at least 150 ATV models. Therefore, the testing and recordkeeping cost that could be attributed to the staffs draft proposed rule that would not be incurred in the absence of the rule, could be less than $462,000 annually ($660,000 – 150 x $1,320). The annual cost of the testing per small manufacturer could be $5,000 to $6,000 assuming an average of 4 to 5 models require testing each year.

Importers that do not manufacture ATVs can probably work with the foreign manufacturers to ensure that the ATVs meet the mechanical requirements and the documentation is prepared and transferred to the importer. Where the compliance testing is conducted by persons not fluent in English, an importer may have to employ the services of a qualified translator who can translate the records accurately into English.

It should be noted that the mechanical safety requirements of the staff's draft proposed rule are largely adapted from a voluntary standard developed with ATV manufacturers. It is believed that most ATVs sold in the U.S. are already in conformance with the requirements of the voluntary standard. However, CPSC staff have not conducted a comprehensive study of current compliance with the voluntary standard, which would include things such as testing the braking and speed of ATVs.

The requirement that all ATVs be equipped with a stop lamp would impose some cost burden on ATV manufacturers. Although many adult ATVs are already equipped with stop lights, most youth ATVs are not. Many small manufacturers and importers supply youth ATVs to the U.S. market. The cost of including stop lamps on ATVs includes the cost of the materials (e.g., bulbs, wiring, switches, lenses, and housing), the cost of the labor to install the materials, and the cost of modifying the bodies of ATVs to accommodate stop lamps. Stop lamps are standard on many different vehicles and, as noted, are included on most adult ATVs. However, CPSC staff have not developed firm estimates of the added cost to equip youth ATVs with stop lamps.

The requirement that youth ATVs be equipped with automatic transmissions could impose some cost on manufacturers whose youth models are not already so equipped. However, most youth ATV models, including those from small importers, already appear to be equipped with automatic transmissions. The models identified by the staff that did not have automatic

transmissions were some ATVs intended for children 12 years of age or older that were equipped with automatic clutches. An automatic clutch, which still requires the driver to manually select the appropriate gear, would not meet this requirement for youth ATVs.[4]

Manufacturers will be required to ensure that certain warning labels and hang tags are attached to each ATV and that certain warnings and safety information are inserted in the owners' manuals. The cost of warning labels, hangtags, and additional pages in owner's manuals is low. Many, if not most, manufacturers already comply, at least to some degree, with this requirement. However, CPSC staff have found some ATVs that are missing labels and some cases where the safety instructions on the labels or in the owners' manuals are unclear. Therefore, some foreign manufacturers may require the services of a qualified translator to ensure that the labels and manuals are written in clear and understandable English. Other special skills probably will not be required since the required safety content of the warning labels, hangtags, and manuals is specified in the rule.

The staff's draft proposed rule requires that manufacturers provide purchasers with a video that provides safety information concerning ATVs. The major manufacturers already provide the safety videos that conform to this requirement. The cost of duplicating a video or DVD is no more than a few dollars. However, the cost of producing the safety video could be several thousand dollars. The impact on small importers could be reduced if a third party video could be licensed or shared by many small manufacturers or importers.

Manufacturers would also be required to keep a copy of the owner's manuals and the safety video for each model on file for at least 5 years. It is likely that many manufacturers would do this even in the absence of a mandatory rule. The storage costs of these items probably would not exceed $10 per model. The cost could be lower since the same safety video would likely be used for all ATV models produced or imported by a manufacturer and could be used for several years. Owner's manuals also might cover more than one model.

The staff's draft proposed rule requires manufacturers to offer "free" ATV safety training to each purchaser of a new ATV and to each member of purchaser's immediate family that meets the age qualification to drive the ATV. The manufacturer or importer must make arrangements with a training provider to provide this training. The training providers must offer their services reasonably close to where the purchaser lives and within a reasonable time of the purchase. There are groups, such as the ATV Safety Institute (sponsored by the Specialty Vehicles Institute of America (or "SVIA")) that offer ATV safety training that should comply with this requirement. Based on the listed prices for the SVIA training, the cost is between $75 and $125 per person. Based on the experience with the manufacturers that have signed LOUs with the CPSC, it is expected that about 30 to 40 percent of ATV purchasers with little riding experience will take advantage of the offer of free safety training. However, since most ATV purchasers are already experienced drivers, it is expected that less than 10 percent of all purchasers of new ATVs will take advantage of the free training offer.

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[4]The three youth ATV models equipped with automatic clutches were produced three of the large ATV manufacturers.

The staff's draft proposed rule would formalize a ban on the sale of new 3-wheel ATVs. CPSC reached voluntary agreements with ATV manufacturers to stop supplying 3-wheel ATVs to the U.S. market in 1988. The staff is not aware of any major manufacturers that are currently supplying 3-wheel ATVs to the U.S. market. However, the Office of Compliance has found evidence that some 3-wheeled vehicles that meet the definition of an ATV are being offered for sale to U.S. consumers on the internet.[5] The formal ban in the staff's draft proposed rule is intended to ensure no manufacturer or importer introduces a new 3-wheel ATV in the future. The ban should not impact the current operations of any manufacturer or importer.

Retailers

ATV retailers would have some responsibilities under the staff's draft proposed rule, but none that would be expected to have a substantial impact. The CPSC staff have not determined the total number of ATV retail operations, but they certainly number in the thousands, a substantial number of which could be small businesses.[6] Many ATV retailers are franchise operations of the larger ATV manufacturers or distributors. Other ATV retailers purchase their inventory from ATV importers and wholesalers. ATV retailers usually sell products in addition to ATVs, including motorcycles, scooters, and farm equipment. Some ATVs are offered for sale over the internet.

Each retailer will be required to prepare a "training certificate" that entitles each qualified member of the purchaser's immediate family to free ATV safety training. Additionally, the retailer will be required to prepare and maintain two records that will be generated around the time an ATV is sold. One is the disclosure statement that advises consumers of the minimum age recommendations for riders on the ATV that they are purchasing. The second is a notice of the availability of free training for new ATV purchasers. The purchaser will be required to sign the original of each form. The retailer will provide copies of both forms to the purchaser and the manufacturers. The retailer and manufacturers would have to maintain the originals in their files for 5 years after the date of the purchase. The forms must be made available to CPSC representatives upon request.

These records are not complex and simply provide some basic information to the consumer (i.e., the minimum age one should be to ride the particular ATV and contact information for free ATV safety training). No information needs to be collected by the retailer, other than the consumers' signatures. No particular skill will be required to generate or maintain these records. However, retailers that sell ATVs over the internet, or in other settings where a representative of the retailer does not meet personally with the consumer, may have to develop

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[5] Tany Topka, "Three-Wheeled All-Terrain Vehicles," CPSC Memorandum to Elizabeth Leland, U.S. Consumer Product Safety Commission, Washington, DC (22 May 2006).

[6] According to the 2002 Economic Census, there were 4,898 establishments classified as motorcycle dealers (NAICS code 441221), which includes motor bikes, motor scooters, ATVs, and personal watercraft (U.S. Department of Commerce, Census Bureau). A business in this category is considered "small" (according the Small Business Administration size standards) if its gross receipts are less than $6.5 million annually.

new procedures for obtaining the consumers' signatures. These might include not shipping the ATV until the consumer has returned the signed originals to the retailer.

The cost of preparing and filing these records is estimated to come to about $2.33 per ATV sold. This estimate assumes that 3 forms will be required for each ATV: the age acknowledgement form, the availability of training acknowledgement form, and the training certificate. It is further assumed that each form takes an average of one minute to complete. An additional minute will be required for the retailer to send copies of the forms to the manufacturer and the manufacturer will require an additional minute to properly file the copies. The time is valued at $21.32 per hour.[7] The cost of the blank forms themselves, postage, envelopes, and other supplies might add another $0.55 to the cost.

If 950,000 ATVs are sold annually,[8] the total recordkeeping cost on retailers will be about $2.2 million annually. The number of ATV retailers is estimated to be about 5,000. Therefore, the recordkeeping costs will average about $440 per retailer annually.

The retailer will also be responsible for ensuring the warning labels and hang tags specified in the draft rule remain on the vehicle at least until the purchaser has possession of it. In addition, the retailer would be responsible for ensuring that the safety video and owner's manual provided by the manufacturer or importer are transferred to the purchaser.

Other Federal Rules

The CPSC staff have not identified any Federal rule that either overlaps or conflicts with the staff's draft proposed rule. Some states require training of ATV operators under some circumstances or require riders to wear certain protective gear. At least one state (North Carolina) has specified maximum engine sizes for ATVs intended for children under the age of 16 years.

Alternatives to the Staff's Draft Proposed Rule

The staff's draft proposed rule would essentially mandate provisions of a voluntary mechanical standard and certain provisions of other agreements that CPSC has negotiated with the major ATV distributors. Manufacturers and distributors with an estimated combined market share of about 90 percent of the ATVs sold already comply with most of the provisions of the staff's draft proposed rule. Because the rules are intended to ensure that all ATVs, distributors, and retailers meet these minimum requirements, CPSC staff have not identified any alternatives that would reduce the burden on small businesses and accomplish the goals of the staff's draft proposed rule.

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[7] This is the average hourly wage of motor vehicle sales workers reported by the Bureau of Labor Statistics in July 2004 (inflated to 2006 dollars).

[8] It is projected that about 949,000 ATVs will be sold in 2006 (Terrance R. Karels, "Current Market Conditions – ATVs," CPSC Memorandum to Elizabeth W. Leland, Project Manager ATVs, Consumer Product Safety Commission, Washington DC (2006)).

The option of continuing to rely on voluntary activity was considered by the staff. However, the rapid increase in the number of firms supplying ATVs to the market and the relative ease of entry and exit into the market make it impractical to negotiate individual agreements with each manufacturer and importer.

Summary and Conclusions

Many of the 87 or more companies that manufacture or import ATVs into the U.S. and an unknown number of the retailers are small entities. The staff's draft proposed rule would impose some requirements on these firms. However, the requirements are needed to ensure that all ATVs meet some minimum safety requirements, that all ATV consumers receive some important safety information, and that all buyers be offered the training that is needed to safely operate ATVs. Some small entities are already meeting many of the provisions of the staff's draft proposed rule.

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UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
WASHINGTON, DC 20207

MEMORANDUM

DATE: May 23, 2006

TO: Elizabeth W. Leland, Project Manager, ATV Safety Review Project,
Directorate for Economic Analysis

THROUGH: Hugh M. McLaurin, Associate Executive Director,
Directorate for Engineering Sciences

Robert B. Ochsman, Ph.D., CPE, Director,
Division of Human Factors, Directorate for Engineering Sciences

FROM: Timothy P. Smith, Engineering Psychologist,
Division of Human Factors, Directorate for Engineering Sciences

SUBJECT: Minimum requirements for ATV hang tags, product labels, and manual warnings

BACKGROUND

In April 1988, the U.S. Consumer Product Safety Commission (CPSC) entered into Consent Decrees with the five major distributors of all-terrain vehicles, or ATVs. In the final Consent Decrees, the distributors agreed to take several actions, including providing ATV safety information to consumers through hang tags, product labels, and owner's manuals. After the Consent Decrees expired in 1998, the Commission entered into Voluntary Action Plans—also known as Letters of Undertaking—with the five distributors who had been parties to the Consent Decrees and three ATV distributors who had entered the market after the decrees had been established. Under these action plans, which are still in effect, the distributors agreed to continue many of the actions the Consent Decrees had required. The staff of the CPSC Division of Human Factors has been asked to determine whether the current practice for hang tags, product labels, and owner's manual warnings for ATVs, in terms of content and location, would be acceptable as minimum requirements within a mandatory ATV standard.

DISCUSSION

Safety literature consistently identifies a classic hierarchy of approaches that one should follow to control hazards, based primarily on the effectiveness of each approach in eliminating or reducing exposure to the hazard. The use of hazard communications, such as warning labels, is universally viewed as a less effective approach than either designing the hazard out of the product or guarding the consumer from the hazard, and is thus lower in the hazard control hierarchy than these other two approaches (Vredenburgh & Zackowitz, 2005; Wogalter & Laughery, 2005). This is primarily because hazard communications do not prevent consumer exposure to the hazard, but instead rely on persuading consumers to alter their behavior to actively avoid the hazard. Despite their lesser effectiveness, hazard communications such as

hang tags, product labels, and warnings within owner's manuals, can enable consumers to make informed decisions about how to safely use the product—or whether to use the product at all. Thus for products with hazards that cannot be effectively removed through design or physically guarded from the consumer, hazard communications are crucial. For example, products without reasonable instructions or warnings may be considered defective (*The Restatement of the Law Third, Torts: Products Liability* § 2(c), 1998, as cited in Moll, Robinson, & Hobscheid, 2005).

HANG TAGS

To the staff's knowledge, most ATVs display point-of-purchase hang tags that are consistent with the requirements outlined in the final Consent Decrees. Hang tags that meet these requirements include the following information:

> The contents of the general warning label (see next section)
>
> The statement, "This hang tag is not to be removed before sale."
>
> The statement, "Check with your dealer to find out about state or local laws regarding ATV operation."
>
> For adult ATVs intended for operators 16 years old and older who have advanced skills and substantial experience, a statement to that effect
>
> For adult ATVs intended for sport or competition, a statement to that effect

The hazard content of the hang tags is generally consistent with available guidelines for safety tags (for example, ANSI Z535.5–2002), and the Human Factors staff has not been provided with information suggesting that the other content is deficient. Thus, these content requirements should be adequate for use in a mandatory ATV standard.

PRODUCT LABELS

The final Consent Decrees specify four warning labels that must appear on all ATVs: (1) a general warning label, (2) an age recommendation warning label, (3) a passenger warning label, and (4) a tire pressure and overloading warning label. To the staff's knowledge, the warning labels affixed to most ATVs include these or substantially equivalent labels as well as other discretionary warning labels.

General Warning Label

Figure 1 shows the general warning label that was specified in the final Consent Decrees. With approval from the CPSC, manufacturers who were parties to the Consent Decrees developed a new general warning label. To the staff's knowledge, most ATVs include this new label or one that is essentially identical. Figure 2 shows a representative sample of this new label. Because this version is the one most commonly used on ATVs, the following discussion will focus on the new general warning label.

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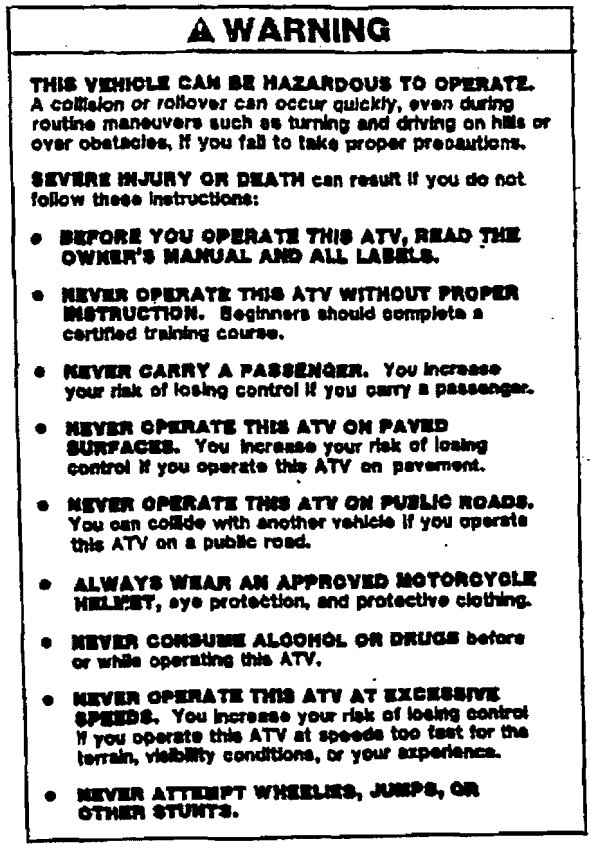

⚠ WARNING

THIS VEHICLE CAN BE HAZARDOUS TO OPERATE. A collision or rollover can occur quickly, even during routine maneuvers such as turning and driving on hills or over obstacles, if you fail to take proper precautions.

SEVERE INJURY OR DEATH can result if you do not follow these instructions:

- **BEFORE YOU OPERATE THIS ATV, READ THE OWNER'S MANUAL AND ALL LABELS.**
- **NEVER OPERATE THIS ATV WITHOUT PROPER INSTRUCTION.** Beginners should complete a certified training course.
- **NEVER CARRY A PASSENGER.** You increase your risk of losing control if you carry a passenger.
- **NEVER OPERATE THIS ATV ON PAVED SURFACES.** You increase your risk of losing control if you operate this ATV on pavement.
- **NEVER OPERATE THIS ATV ON PUBLIC ROADS.** You can collide with another vehicle if you operate this ATV on a public road.
- **ALWAYS WEAR AN APPROVED MOTORCYCLE HELMET,** eye protection, and protective clothing.
- **NEVER CONSUME ALCOHOL OR DRUGS** before or while operating this ATV.
- **NEVER OPERATE THIS ATV AT EXCESSIVE SPEEDS.** You increase your risk of losing control if you operate this ATV at speeds too fast for the terrain, visibility conditions, or your experience.
- **NEVER ATTEMPT WHEELIES, JUMPS, OR OTHER STUNTS.**

FIGURE 1. Original general warning label.

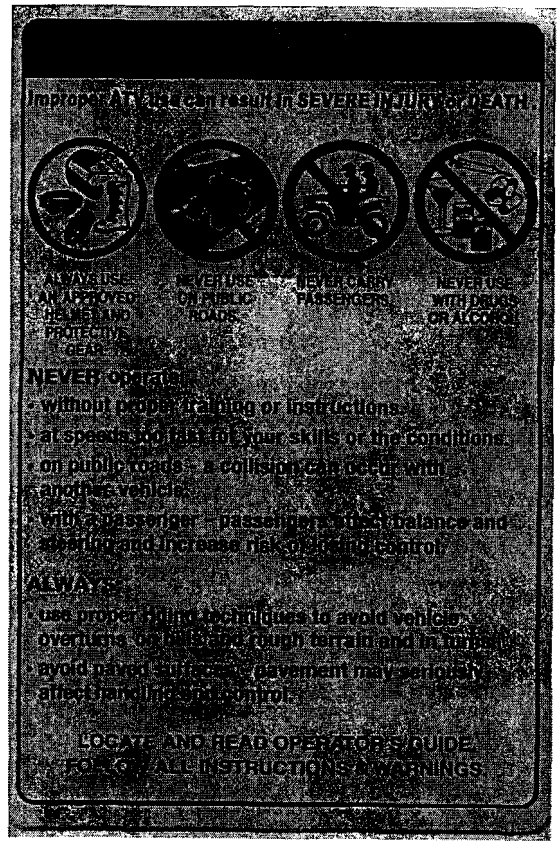

FIGURE 2. New general warning label.

The general warning label warns of the hazardousness associated with "improper use" of an ATV, and recommends several actions that consumers should take to avoid injury and death. The label identifies specific hazards, such as collision, a loss of control, and overturns, within the label's recommended hazard-avoidance behaviors.

The hazard-avoidance behaviors identified in the general warning label include:

Wearing a helmet and other protective equipment

Obtaining proper instruction or training

Avoiding excess speeds

Keeping off public roads

Keeping off paved surfaces

Never carrying passengers

Never using with drugs or alcohol

Using proper riding techniques

Following all instructions and warnings in the owner's manual.

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The general warning label also includes four pictograms that identify four of the hazard-avoidance behaviors: wearing a helmet and other protective equipment, keeping off public roads, never carrying passengers, and never using with drugs and alcohol. A label with these pictograms should capture a consumer's attention more readily than a label without pictograms (Wogalter & Laughery, 2005; Wogalter & Leonard, 1999).

The general warning label used on tandem, or "2-Up," ATVs is identical to the label used on non-tandem ATV except for the following:

> Rather than recommending against carrying passengers, the label recommends that consumers never carry more than one passenger.
>
> The label includes a statement that warns consumers to reduce speed and to use extra caution when carrying a passenger, and to "dismount passenger when conditions require."
>
> The label instructs the consumer to make sure the passenger reads and understands both the general warning label and the passenger warning label.
>
> The passenger-prohibition pictogram shows three people on the ATV rather than two.

Overall, the content and format of the new general warning label are consistent with ANSI Z535.4 (2002), the primary U.S. voluntary consensus standard on product safety signs and labels. The color scheme and typeface used in the new general warning label are consistent with what the Consent Decrees specify, which are also consistent with ANSI Z535.4 (2002). Thus, these requirements should be adequate for use in a mandatory ATV standard. The Human Factors staff does have concerns, however, about the use of the phrase "dismount passenger when conditions require" in the tandem general warning label. First, the label is directed toward the driver yet "dismount" is an action the passenger, not the driver, should take. Rewording this phrase to, for example, "passenger should dismount..." or "passenger should get off..." would be more appropriate. Second, "when conditions require" is vague and open to interpretation. Unless consumers are aware of the conditions that "require" removal of the passenger, this statement is unlikely to be very effective. Until these conditions have been determined, the Human Factors staff cannot provide specific recommendations for rewording this portion of the label. Additionally, the passenger warning information that appears in the general warning label is largely redundant with the information that is presented in the passenger warning label for tandem ATVs (see *Passenger Warning Label: Tandem ATVs*). Thus, on tandem ATVs, this information should be removed from the general warning label, assuming the passenger warning label is located as recommended in the *Passenger Warning Label: Tandem ATVs* section of this memorandum.

The Consent Decrees state that the general warning label must be affixed to the left front fender so it can be easily read by the operator when seated in the vehicle in the proper operating position. If this position is not appropriate for a particular model ATV, it must be affixed to the right front fender so it can be easily read by the operator when seated in the vehicle in the proper operating position. These location requirements are consistent with ANSI Z535.4 (2002), which specifies that product safety signs and labels must be placed where they will be readily visible to

the intended viewer and will be able to alert the viewer to the potential hazard in time to take appropriate action. The location requirements, therefore, should be adequate for use in a mandatory ATV standard.

Age Recommendation Warning Label

Figure 3 shows two age recommendation warning labels that are representative of those specified in the final Consent Decrees. The age recommendation warning labels on most ATVs are identical or substantially equivalent to these labels,[1] and all are vague about the nature of the hazard. While these labels do refer to an increased risk of severe injury or death, they fail to describe the reasons for this increased risk. The primary U.S. voluntary consensus standard on product safety signs and labels, ANSI Z535.4 (2002), states that warning labels should specify the nature of the hazard unless consumers can readily infer this information; thus a warning label should include this information by default. Additionally, messages that "fill in the blanks" by providing complete arguments for a position tend to be more persuasive than messages that do not (Stiff & Mongeau, 2003).

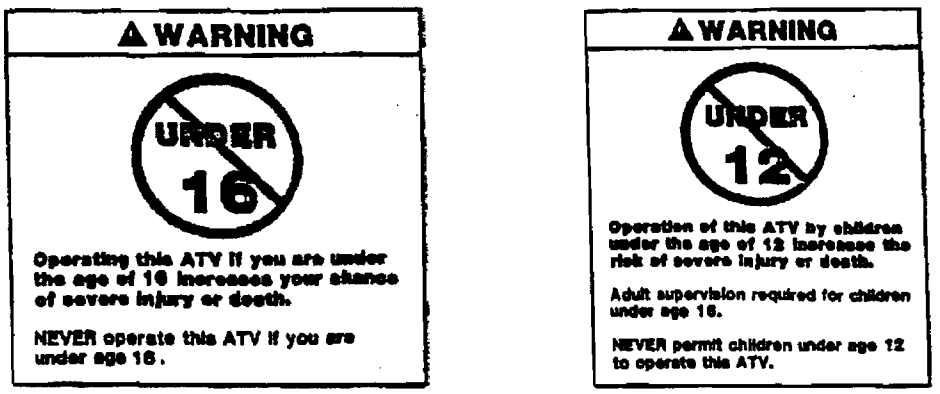

FIGURE 3. Representative age recommendation labels.

The primary reasons for the age recommendations appear to be children's lack of experience and, more importantly, their immature judgment. Most parents probably understand that younger children are generally less mature and may have less experience than older riders. Yet without an explanation for the age recommendations, parents could ascribe any number of behaviors or characteristics to the recommendations. Research shows that people tend to provide more favorable or self-serving appraisals of ability when the characteristics that are relevant for success and achievement are ambiguous (Dunning, Meyerowitz, & Holzberg, 2002). Thus, if the reasons for the age recommendations are not explicitly described in the label, parents could more easily rationalize why their children are exceptions to these recommendations. This may be especially important for the labels used on adult ATVs—those warning against use by children younger than 16. These age recommendation warning labels, therefore, should include a statement such as, "Even youth with ATV experience have immature judgment and should never drive an adult ATV."

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[1] The "pictogram" in the age recommendation warning label used on tandem ATVs states "operator under 16" rather than simply "under 16."

The adult-ATV age recommendation labels also tend to direct the message about the proper avoidance behavior toward the child rather than the supervising parent, as illustrated by the statement, "NEVER operate this ATV if you are under age 16." Children who try to ride an adult ATV, however, undoubtedly believe that they are capable of riding and, in all likelihood, will not be persuaded by a warning to the contrary. Some could even view the warning as a challenge to overcome since many adolescents actively place themselves in dangerous situations to test the boundaries of society (Zackowitz & Vredenburgh, 2005). In addition, because they are more impulsive, children are less likely than adults to take the time to seek out and read warnings in the first place. The age recommendation labels for adult ATVs, therefore, should use language similar to the youth-ATV age recommendation labels to direct the warning to adults; for example, "Letting children under the age of 16 operate this ATV increases their risk of severe injury or death. NEVER let children under age 16 operate this ATV."

Lastly, the age recommendation warning label used on tandem ATVs includes the statement, "NEVER carry more than one passenger," at the bottom of the label. This statement is redundant with the passenger warnings in the general and passenger warning labels used on tandem ATVs. Thus, the staff recommends that this statement be removed from the age recommendation label.

The Consent Decrees state that the age recommendation warning label must be affixed to the fuel tank so it can be easily read by the operator when seated in the vehicle in the proper operating position. If this location is not feasible, it must be affixed to the front fender above the general warning label. Finally, if this location is not appropriate for a particular ATV model, the label must be affixed on the top portion of the headlight or on the vehicle body immediately forward of the seat so it can be easily read by the operator when seated in the vehicle in the proper operating position. These location requirements are consistent with ANSI Z535.4 (2002) and, therefore, should be adequate for use in a mandatory ATV standard.

The format, color scheme, and typeface specified in the Consent Decrees for the age recommendation warning labels are consistent with ANSI Z535.4 (2002). Thus, these requirements should be adequate for use in a mandatory ATV standard.

Passenger Warning Label: Non-Tandem ATVs

Figure 4 shows the passenger warning label that was specified in the final Consent Decrees. With approval from the CPSC, manufacturers who were parties to the Consent Decrees developed a new passenger warning label. To the staff's knowledge, most ATVs include this new label or one that is essentially identical. Figure 5 shows a representative sample of this new label. Because this version is the one most commonly used on ATVs, the following discussion will focus on this new passenger warning label.

Although the label identifies the hazard as a "loss of control," how the presence of a passenger can lead to a loss of control is not stated. Consumers are unlikely to infer this missing information, which directly addresses the nature of the hazard. Thus, any mandatory passenger label should include a more detailed description of the hazard—for example, "Passengers can affect ATV balance and steering. The resulting loss of control can cause SEVERE INJURY or DEATH."

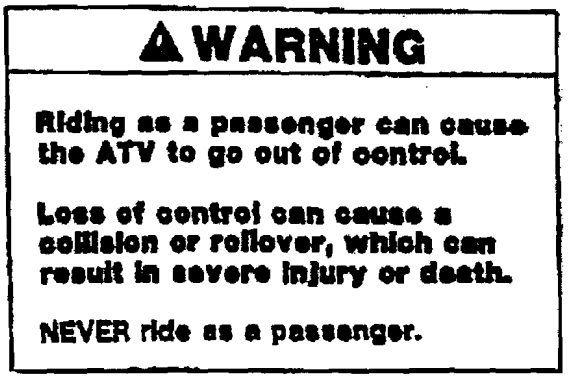

FIGURE 4. Original passenger warning label.

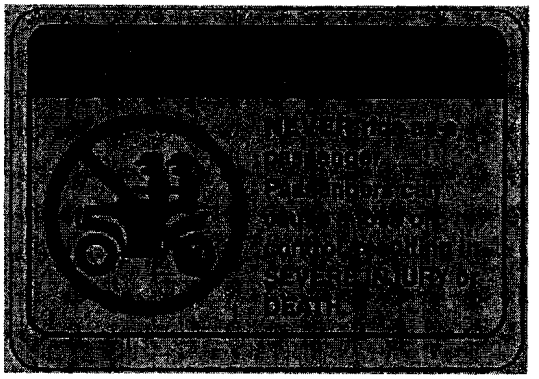

FIGURE 5. New passenger warning label.

The Consent Decrees state that the passenger warning label must be affixed either (1) to the body of the vehicle to the rear of the seat, on a flat surface and toward the center of the vehicle, or (2) to the seat of the vehicle, at the rear of the seat. If neither of these locations is appropriate for a particular ATV model, the label must be affixed to the left rear fender or left side of the body so it is easily read by a potential passenger. Although the primary location requirement is consistent with ANSI Z535.4 (2002) and should be adequate for use in a mandatory ATV standard, the secondary, or backup, location requirement may not be because it is limited to one side of the ATV, a side from which a potential passenger may not approach the vehicle. Thus, a passenger warning label that is affixed to the left rear fender or left side of the body may not be readily visible to the potential passenger. This secondary location requirement, therefore, may be inadequate for use in a mandatory ATV standard.

The format of the new passenger warning label is consistent with ANSI Z535.4 (2002). The color scheme and typeface used in the general warning label are consistent with what the Consent Decrees specify, which are also consistent with ANSI Z535.4 (2002). Thus, these requirements should be adequate for use in a mandatory ATV standard.

Passenger Warning Label: Tandem ATVs

The passenger warning label that appears on tandem ATVs differs greatly from the passenger label described above, and appears to combine elements from the general warning label and the age recommendation label. Additionally, the label is directed toward the driver of the ATV rather than the passenger. Figure 6 shows a representative sample of the tandem-ATV passenger warning label.

FIGURE 6. Tandem passenger warning label.

The portion of the warning related to never carrying a passenger under the age of 12 suffers problems similar to the age recommendation warning label: The label fails to describe the reasons for the passenger-age recommendation. The Human Factors staff has not been presented with information describing the reasons for this recommendation, but if the reasons

can be articulated the staff recommends that this information be included in the label.

The pictogram and accompanying message of "never carry more than 1 passenger" are redundant with the passenger warning information that appears in the general warning label for tandem ATVs. The passenger warning label, however, also recommends the following hazard-avoidance behaviors:

> Never carrying a passenger too small to firmly plant his or her feet on the footrests and to securely grab the handles
>
> Never allowing a passenger to sit in a location other than the passenger seat
>
> Never carrying a passenger who is not securely grasping the grip handles at all times

This information appears comprehensive and should be adequate for use in a mandatory ATV standard.

Because this passenger warning label is more comprehensive than what is presented in the general warning label for tandem ATVs, the Human Factors staff suggests that the passenger warning information be removed from the general warning label for tandem ATVs if, and only if, the tandem passenger warning label is located so it will be readily visible to the driver of the ATV. The Human Factors staff recommends that this label be affixed to the front fender so it is adjacent to the general warning label and can be easily read by the operator when seated in the vehicle in the proper operating position.

Tire Pressure and Overloading Warning Labels

The final Consent Decrees specify that ATVs include a warning against the use of improper tire pressure and against overloading. These warnings can appear in separate labels or can be combined into a single label. If separate, the labels must contain the following statements, at a minimum:

Tire pressure:	Improper tire pressure can cause a loss of control. Loss of control can result in severe injury or death.
Overloading:	Overloading can cause a loss of control. Loss of control can result in severe injury or death.

If the tire pressure and overloading warnings are combined into a single label, that label must include the following statements, at a minimum:

> Improper tire pressure or overloading can cause loss of control.
> Loss of control can result in severe injury or death.

The label with the tire pressure warning must also include a statement indicating the recommended tire pressure(s). The label with the overloading warning must contain a statement indicating the maximum weight capacity for the ATV.

The tire pressure and overloading warning labels on most ATVs are generally consistent with what is specified in the Consent Decrees. Most are combined into a single label. The information specified in the Consent Decrees for the tire pressure and overloading warnings seems to be comprehensive. In addition, the format, color scheme, and typeface specified in the Consent Decrees for the label(s) are consistent with ANSI Z535.4 (2002). Thus, these requirements should be adequate for use in a mandatory ATV standard.

The Consent Decrees state that the tire pressure and overloading warning label(s) must be affixed to the left rear fender above the axle and facing outward so they can be read by the operator when mounting the vehicle. This location requirement is consistent with ANSI Z535.4 (2002) and, therefore, should be adequate for use in a mandatory ATV standard.

Discretionary Labels

Most, if not all, ATVs include warning labels other than the ones described above. The final Consent Decrees allow manufacturers to include warning labels about other hazards as long as they satisfy certain criteria. In terms of content, labels that describe a potential hazard that could result in serious injury or death must contain a safety alert symbol, the signal word "WARNING," and descriptions of the hazard, the consequence of exposure to the hazard, and appropriate hazard-avoidance behavior. These requirements are consistent with ANSI Z535.4 (2002) and, therefore, should be adequate for use in a mandatory ATV standard.

To reduce the presence of unnecessary and potentially distracting discretionary labels, additional requirements may be worth considering. For example, unless the warning is needed as a reminder, one generally should not provide a warning if the hazard, consequences of exposure to that hazard, and appropriate hazard-avoidance behavior are already known to those exposed to the hazard (Laughery & Wogalter, 2005; Laughery & Hammond, 1999). Thus, it may be useful to permit discretionary labels only if the hazard being warned about, the consequences of exposure to the hazard, or the appropriate hazard-avoidance behavior are unlikely to be known to those exposed to the hazard, or if this information is likely to be known but may not be remembered in time to avoid the hazard.

The Consent Decrees state that discretionary labels must be located so they do not detract from the mandatory labels and do not compete with the mandatory labels for the operator's attention. Although these requirements seem to make sense, given the importance of the mandatory labels, they could be counterproductive since a label that does not compete for attention is, by definition, less likely to be attended to and may be ineffective at producing the desired behavior (Wogalter & Laughery, 2005).

OWNER'S MANUALS

To the staff's knowledge, the warnings in the owner's manuals for most ATVs are consistent with the guidelines outlined in the final Consent Decrees. These guidelines state that owner's manuals must include warnings about 26 specific potential hazards, at a minimum. Besides identifying the potential hazard, the warnings for each of these potential hazards must describe precisely what can happen and how one can avoid the hazard. Although not required by the Consent Decrees, many manuals include the headings "Potential Hazard," "What Can Happen,"

and "How to Avoid the Hazard" for each hazard. These content requirements are consistent with generally accepted warning principles (for example, Wogalter & Laughery, 2005). Thus, these requirements should be adequate for use in a mandatory ATV standard.

The consent-decree guidelines for owner's manuals also specify the content of discretionary warnings. These warnings must include a safety alert symbol, an appropriate signal word, and descriptions of the potential hazard, consequences of exposure to the hazard, and appropriate hazard-avoidance behavior. If a potential hazard has more than one consequence, a description of the hazard-avoidance behavior must immediately follow each consequence description. These requirements are consistent with generally accepted warning principles (for example, Wogalter & Laughery, 2005) and, therefore, should be adequate for use in a mandatory ATV standard.

CONCLUSIONS

Most content and location requirements specified in the final Consent Decrees for hang tags, product labels, and owner's manual warnings should be adequate as minimum requirements within a mandatory ATV standard. Exceptions and clarifications to this general assessment are described in detail within the *Discussion*.

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UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
WASHINGTON, DC 20207

MEMORANDUM

DATE: May 23, 2006

TO: Elizabeth W. Leland, Project Manager, ATV Safety Review Project,
Directorate for Economic Analysis

THROUGH: Hugh M. McLaurin, Associate Executive Director,
Directorate for Engineering Sciences

Robert B. Ochsman, Ph.D., CPE, Director,
Division of Human Factors, Directorate for Engineering Sciences

FROM: Timothy P. Smith, Engineering Psychologist,
Division of Human Factors, Directorate for Engineering Sciences

SUBJECT: Recommended disclosure statement for adult-ATV purchasers

BACKGROUND

In October 2005, the Commission issued an advance notice of proposed rulemaking (ANPR) to reduce injuries and deaths associated with all-terrain vehicles, or ATVs. In response to the ANPR, some parents of injured children claimed they were unaware that their children could be killed or injured by riding ATVs intended for adults. As a result, the staff of the U.S. Consumer Product Safety Commission (CPSC) Division of Human Factors has been asked to develop a disclosure statement that describes injury and death data for children on adult ATVs. Purchasers of an adult ATV would be required to sign the statement before the purchase to acknowledge that they are aware of this information. According to the Office of Compliance, this statement would also serve as a record demonstrating that dealers are providing this information to purchasers of adult ATVs.

DISCUSSION

The one-page disclosure statement recommended by the Human Factors staff appears at the end of this memorandum, as Attachment A. The information that appears in the disclosure statement is based on the assumption that many consumers who allow children to ride adult ATVs are not aware of the numbers of injuries and deaths and are not aware of the reasons why allowing children to ride adult ATVs is inappropriate. At this time, however, the Human Factors staff cannot confirm that this is true.

To help consumers make well-informed decisions, hazard communications such as this should specify the nature of the hazards or risks (National Research Council, 1989; Wogalter & Laughery, 2005). The recommended disclosure statement explicitly states that adult ATVs are inappropriate for children under 16 and briefly explains why this is so: the immature judgment of

these children, regardless of experience, combined with the high speeds that are attainable by an adult ATV. The ATV-related death and injury statistics for children under 16,[1] combined with statement that most of these injuries and deaths involved a child riding an adult ATV, should provide the potential purchaser with a general sense of the danger associated with children under 16 riding an adult ATV. The staff would prefer to include an explicit numerical estimate of the relative risk associated with children riding an adult ATV versus an age-appropriate ATV,[2] but this information is not currently available. All numerical data used in the disclosure statement would need to be updated as they change. Identifying the available alternatives—in this case, youth ATVs—is also important so consumers understand what they can do to avoid or reduce exposure to the hazard identified in the disclosure statement (National Research Council, 1989; Wogalter & Laughery, 2005).

Besides providing consumers with important information to aid in decision making, this disclosure statement could have an added benefit of directly influencing consumers' behaviors. Considerable research shows that people are motivated to behave in ways that are consistent with earlier positions or commitments (Cialdini, 2001). This behavior is believed to be caused by efforts to avoid cognitive dissonance, in which a person's individual beliefs, attitudes, or similar cognitions are inconsistent with one another. By signing the statement, a purchaser has essentially "gone on record" as being aware that the ATV is intended for adults only and that youth ATVs are available for children younger than 16. In general, people who have made an active commitment of this kind should find it difficult to act in ways that are inconsistent with this commitment. Written statements or signatures affirming a position, as in the case of the disclosure statement, appear to be especially influential on subsequent behavior (Cialdini, 2001).

Despite the above, several factors will limit the influence of this statement on purchasers' behavior. For example, when potential purchasers are asked to sign the statement they may have already made the psychological commitment to purchase the adult ATV and could find it difficult to "back out" of the purchase. Requiring that potential purchasers read and sign this statement first, before any forms or other documentation associated with the ATV purchase, would reduce the individual's sense of commitment to the purchase and should make it easier for the purchaser to switch to a youth ATV, if appropriate. Free choice is also an important factor (Cialdini, 2001; O'Keefe, 2002; Stiff & Mongeau, 2003). For example, some purchasers may sign the statement but not feel committed to what is stated because they believe that signing the statement was coerced, or essentially forced upon them. Some purchasers may sign the statement and still let their children ride the adult ATV because, although they are fully aware of the high numbers of injuries and deaths and might even believe that age is a relevant factor, they believe that this factor does not apply to their children in particular (due to, for example, the optimism bias described in Gilovich, Griffin, & Kahneman, 2002).

CONCLUSIONS

The proposed disclosure statement appears in Attachment A. Requiring potential purchasers to read and sign the subject statement could reduce the incidence of consumers placing children on

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[1] From Ingle (2005).

[2] For example, "A child under 16 who rides an adult ATV is *X times* more likely to die or to be injured than the same child on an age-appropriate ATV," where *X* represents some numerical value.

adult ATVs, but this should occur before potential purchasers are presented with any forms associated with the actual purchase of the adult ATV.

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The ATV you are considering is for adult drivers ONLY.

Adult ATVs can reach highway speeds and are inappropriate for anyone under 16. Even children with ATV-driving experience have immature judgment and should never drive an adult ATV.

In **each** year since 2001:

- More than 125 children younger than 16 died while riding an ATV.
- More than 34,000 children younger than 16 were treated in emergency rooms for ATV-related injuries.

Most of these deaths and injuries involved a child riding an adult ATV. Youth ATVs are available and are designed specifically for drivers under 16.

I have read the information above and understand that the ATV I am about to buy is for adults only. I also understand that youth ATVs are available for children under 16.

Purchaser Signature Date (mm/dd/yyyy)

Full name (please print)

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UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
WASHINGTON, DC 20207

Memorandum

Date: May 17, 2006

TO : Elizabeth Leland, Project Manager ATV Team

THROUGH : Hugh McLaurin, Associate Executive Director
Directorate for Engineering Sciences
Robert B. Ochsman, Director
Division of Human Factors

FROM : Hope E. Johnson, Engineering Psychologist
Division of Human Factors
Directorate for Engineering Sciences

SUBJECT : ATV Training

Introduction

The U.S. Consumer Product Safety Commission (CPSC) has long maintained that training is essential to safe all-terrain vehicle (ATV) operation. In the 1980s, CPSC staff worked with manufacturers to develop the current ATV RiderCourse[sm] that is offered through the ATV Safety Institute (ASI), the non-profit training division of the Specialty Vehicle Institute of America® (SVIA). CPSC staff feels that training is important because operating an ATV seems deceptively easy; steering controls are similar to a bicycle, and the throttle is generally simply lever-operated with the thumb. ATVs are, however, high-speed motorized vehicles that require repeated practice to drive safely. Operating an ATV is somewhat comparable to operating other complex motorized vehicles. ATVs have top speeds approaching automobile speed limits on highways, yet have as little protection from oncoming objects as a motorcycle. Even at relatively low speeds (20-30 mph) they can require as much skill to operate as an automobile because the operator requires: (1) situational awareness to negotiate unpaved terrain with both eye-level hazards (trees, other ATVs) and trail-level hazards (ditches, rocks, hidden holes); and (2) quick judgments including not only steering, speed, and braking, but also terrain suitability, weight shifting and other active riding behaviors. Formal, hands-on training teaches drivers how the ATV responds in situations that are typically encountered. ATV training may act as a surrogate for experience because it exposes new ATV drivers to situations they will encounter when riding off-road and teaches them the proper driving behavior to navigate those situations.

This memo includes a preliminary evaluation of the current ATV RiderCourse[sm] and provides recommendations for enhancing training programs.

Elements of successful training

Training is often considered fundamental for acquiring safe behaviors. A successful training program depends on the following factors (Sander and McCormick, 1993):

- Positive approaches that stress safe behaviors – not just avoidance of unsafe behaviors.
- Conditions that allow for practice to ensure that learned behaviors transfer to real-life situations while resisting interferences such as stress.

- Frequent feedback to mark progress.
- A means of evaluating effectiveness in reaching goals.

Effective training may be measured in two ways: effectiveness of student retention of information and effectiveness at reducing incidents. For example, a written and riding test at the end of a course would measure the effectiveness of teaching proper riding behaviors. A written and riding test six months post-training may measure the post-training degradation of trained behavior and information. Yet the most valid test of a training program is whether or not the behaviors that lead to incidents are reduced.

ATV training in use today

As of November 2005, only one-third of the states require training, licensing, certification, or endorsements for children[1] to ride ATVs, and even fewer states require any certification for adults.[2] Generally, these requirements only apply to ATVs driven on public lands. Some states (e.g., California, New York, Oregon) use the industry standard training course described below. Other states (e.g., Minnesota, Michigan, Maine, Utah) run their own training program, and at least one state (Pennsylvania) has approved the industry training course and has its own instructors certified.

Industry Sponsored Training

The primary nationwide training system for ATVs is supported by the major ATV manufacturers through the a course available from the ATV Safety Institute® (ASI).[3] All major manufacturers offer training through the ASI. Although ASI assures CPSC staff that initial contact regarding training is attempted via phone within one week of purchase, it is often much longer before the purchaser receives training, if at all. In a public meeting at CPSC headquarters on August 18, 2005, SVIA reported that the process to enroll a purchaser involved the following steps:

1) Dealer completes a training form for the purchaser
2) Dealer mails or faxes training form to ASI
3) ASI enters training form data into ASI database
4) ASI contacts the purchaser and enrolls him or her in a course
5) Purchaser attends course.

At this same meeting, SVIA reported that the average times from step 3 to 4 and step 4 to 5 are 28 and 24 days, respectively. Therefore, the average purchaser who decides to take the training has probably owned the ATV for seven and a half weeks before he or she receives training.

CPSC data show the greatest risk of injury occurs with inexperienced riders.[4] CPSC Human Factors (ESHF) staff believes it is unlikely an ATV purchaser will wait until he or she receives training to begin riding the new ATV. For this reason, it is important that training commence as soon as possible after purchase, if not before. ASI reports that they instituted a "try before you buy" program in September 2003 to allow consumers to take the training course for a fee, and then apply for a rebate after they purchase a new ATV. There have been very few applicants for

[1] 17 states: California, Connecticut, Iowa, Maine, Michigan, Minnesota, New Hampshire, New Jersey, New York, North Dakota, Oregon, Pennsylvania, Texas, Utah, Vermont, West Virginia, and Wisconsin.
[2] Texas for all unsupervised riders. New Hampshire, Oregon, and Utah only if not a licensed automobile driver.
[3] The ATV Safety Institute (ASI) is a not-for-profit division of the Specialty Vehicle Institute of America (SVIA), which is an organization of major manufacturers.
[4] "Drivers with less than one year of driving experience have the highest risk among drivers of differing experience levels" Levenson, M.S. (2003, p. 2).

rebates, with even fewer rebates granted due to the requirements of the program. Additionally, there is little indication that this program is well advertised, as information is provided only when one registers for the class and not to all potential purchasers.[5]

ESHF staff had the opportunity to attend the ASI's training course on October 23, 2003, and again on November 17, 2005. The course covered many of the essentials of driving an ATV, including how driving is "rider active," that is, the rider must actively shift his or her body to maintain proper control of the vehicle. During the four-hour course, some aspects of basic driving were covered, but it did not cover emergency situations beyond basic evasive maneuvers, nor were the differences between ATVs and automobiles or motorcycles particularly stressed.[6] The workbook that accompanies the course gives some further details, such as explaining why the lack of a differential may cause loss of control; however, little time was spent during the course on reviewing information in the manual. During the driving portion, particularly with crossing logs, ESHF staff felt there were too few repetitions of each skill to adequately master the skill. ESHF staff noted that during some tasks, the rider was not required to repeat until mastery. For example, during the emergency braking trial, at least two trainees did not perform the task properly (by hitting the throttle instead of the brake) and expected the instructor to repeat the exercise. The exercise was not repeated, nor did the instructor even ask if the students felt comfortable with what they had just completed. This mistake is of particular note, as ESHF staff has read several injury incidents where the victim noted this form of control confusion (e.g., 01091HEP5442, 011013HEP7521, and 011203HEP5441), often with an inexperienced driver (e.g., 011013HEP7521, and 011203HEP5441).

There was no written or driving test at the end of the course; each participant was simply handed a completion card pre-printed with his or her name. The course would be more helpful to the trainees if the instructor evaluated them and provided some type of personalized feedback they could take away from the course. Additionally, ESHF staff felt the course was too short for the amount of material covered. In many cases, additional time is needed to practice each activity to mastery or near mastery, yet this time is not available. This deficit in the course was noted to CPSC staff as early as 1986 under contract CPSC-C-86-1168, *An Evaluation of ATV Training* (Mills, Felker, Bramwell, and Dean, 1986).

4-H Youth ATV Training

4-H is a youth program that is part of the Cooperative Extension Systems offered by each state's land grant university. 4-H has developed an ATV curriculum that local 4-H groups can use to teach safe ATV riding behaviors to youth in grades 4 through 10. The course is a classroom based course, with no rider training.[7] According to the Leader's Guide for the course, it is "not intended to be used in place of a riding course," and it is "intended to be used with audiences that have never ridden ATVs or those that are actively riding, whether trained or not." The selection of activities can be used individually or as part of an 8-hour ATV training day.

[5] Personal communications, Tom Yager, ASI, 2/1/2006, 2/7/2006, 5/17/2006.

[6] During the 2003 course, there was one mention regarding how one must actively shift weight on an ATV rather than lean slightly as one would on a motorcycle.

[7] Past 4-H cirricula have included hands-on training.

State Specific Programs
California: Uses the ASI course and issues a safety certificate for any student who completes the course as a rider or an observer. The certificate is required for drivers under 18 on public lands unless supervised.

Connecticut: Department of Environmental Protection policy is that children need ATV training, but due to the lack of legal riding land, specific training programs and requirements have not been developed.[7]

Idaho: Has developed their own state program for children 6-16. The course requires passing a written test before a 4-hour hands-on riding course. Parents are required to attend with children under 12.

Iowa: ASI training is mandatory for youth ages 12-17.

Maine: Combines ATV training with snowmobile training in a 6-hour long course unique to the state of Maine. Two hours of the course covers proper operation and safety, including riding skills and ATV maintenance. The remaining four hours focus on state laws, emergency survival, map reading, first aid, and riding ethics.

Michigan: Has developed their own program for ATV training through the Michigan ATV Association for youth under 16 to obtain a safety certificate. The course is an 8-hour hands-on course focusing on ATV driving skills and allows children as young as 6 (and "younger by exception") to participate on any size ATV.

Minnesota: Allows children ages 12-15 who complete the Department of Natural Resources training course, including passing a written test, to operate ATVs over 90cc that properly "fit." Fit is defined by "if the rider is able to properly reach and control the handle bars and reach the foot pegs while sitting upright on the seat of the ATV."

New Hampshire: Certifies drivers age 12 and over using a state developed program.

New Jersey: Has certified the ASI course for training youth 14-18 and requires youth to have a safety certificate.

New York: ASI course and certificate required for children 10-15.

North Carolina: Uses the ASI course to certify any rider born after 1/1/1990.

North Dakota: A safety certificate is required for youth 12-16 who do not have a driver's license. The certificate is obtained when the youth passes an exam and has his or her skills certified. The exam can be passed through home study or a class. The skills form can be certified by a parent or a "certified instructor."

[7] Personal communication, Leslie Lewis, CT DEP, 12/13/2005

Oregon: Uses the ASI course to issue an ATV Operator's Permit, which is required for youth ages 7 through 17 and recommended for all riders. The state pays 60% of the cost for youth 6-15.

Pennsylvania: Has Department of Conservation and Natural Resources (DCNR) authorized trainers and has also approved the ASI training course. Training is mandatory for youth ages 8-15.

Texas: Requires the ASI course for all riders, regardless of age.

Utah: Conducts training through the State Parks and Recreation division. Training is required for children 8 and above on any machine.

Vermont: State law requires children under 18 to pass a written test and possess a safety education certificate, but there is no course approved for these requirements.

West Virginia: Safety Awareness Training is conducted by the Department of Motor Vehicles and required for youth under 18.

Wisconsin: Conducts their own training course with a minimum of 6 hours of instruction on laws, ethics, safety, and proper use of ATVs. Safety certificate required for anyone over age 12. The state specifically excludes validity of ASI certificates.

Lag Time between Purchase and Training

SVIA has documented an average lag time between purchase and training of seven and a half weeks (52 days, see p. 2). It is unreasonable to assume that the consumer will not use the ATV during this period while waiting for training. Instead, it is reasonable to conclude that the new purchasers are using their ATVs, perhaps frequently, and have either taught themselves how to operate it or have learned from a family member, friend, or someone else. This rider could have learned incorrect procedures or developed bad riding habits during this time. Since it is easier to train safe behavior initially than to unlearn unsafe behaviors, the time between purchase and training must be reduced or eliminated. Although the legalities and jurisdictional issues involved are outside the scope of this memo, ESHF staff believes it would be beneficial if all riders receive training *before* they purchase or rent an ATV.

Conclusion and Recommendations

It is essential that all ATV operators receive some form of formal riding training. The training should ensure that new drivers can competently handle a variety of circumstances, such as crossing obstacles; making emergency turns and stops; and climbing, descending, and traversing hills. Training should also familiarize new ATV drivers with proper safety gear, pre-ride ATV inspections, proper ATV operation, riding strategies to help drivers avoid unsafe situations, riding risks, and CPSC death, injury and risk data along with CPSC safety messages. With regards to training, ESHF staff recommends:

- Training programs should follow the syllabus in Appendix A. This syllabus is based on CPSC safety messages and the "ATV Rider's Course Outline" from the Consent Decrees and includes recommendations for testing and additional practice.
- All ATV purchasers be presented with the form in Appendix B informing them of the risk to new ATV drivers and availability of training.

- Manufacturers, dealers, and distributors should be proactive in enrolling new purchasers into training courses.

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Appendix A
ATV Training Syllabus

Learning Objectives

At the end of the course, the student will:

1. Understand risks of ATV-related deaths and injuries (risk awareness)
2. Recognize the role of safety equipment by:
    a. Identifying
    b. Using
    c. Understanding why it is used
3. Understand rider responsibilities
    a. Children/youth should not ride adult ATVs
    b. All ATV users should take a hands-on safety training course.
    c. Never ride a single-rider ATV with a passenger or as a passenger.
    d. Never drive an ATV on paved roads.
    e. Always wear a helmet and other protective gear while on an ATV.
    f. Never drive an ATV while under the influence of alcohol or drugs.
4. Identify displays and controls
5. Recognize limitations:
    a. Inclines
    b. Rider abilities
6. Evaluate a variety of situations to predict proper course of action
    a. Terrain obstacles
    b. Behavior of other riders
7. Demonstrate successful learning of riding skills
    a. Starting and stopping
    b. Negotiating turn
        i. Gradual
        ii. Sharp
        iii. Quick
        iv. Weaving
        v. Evasive maneuvers
    c. Stopping in a turn
    d. Emergency braking
        i. Straight
        ii. While turning
    e. Negotiating obstacles
        i. Full track
        ii. Partial track
    f. Negotiating hills
        i. Ascending
        ii. Descending
        iii. Traversing
        iv. Emergency situations
    g. Combining skills together in a non-predictable manner (i.e., trail ride or free riding period with instructor supervision and critique)

Trainee Evaluation

1. Written or oral evaluation of objectives 1 through 6.
2. Riding evaluation of objective 7.

Course Structure

The course should be structured in a way to facilitate learning of all objectives. This may include classroom, field, and trail activities. Instructors should be encouraged to actively monitor each student's progress and practice until all students are reasonably proficient. Ideally, riding maneuvers should be practiced to the point of overlearning.

Course Length

The course outlined in the Consent Decrees specified a 5 ½ hour course, but ESHF staff has concerns that this course does not allow enough practice time to ensure transfer of skills (see p. 3). ESHF staff encourages course designers to ensure proper time is allowed for students to practice to proficiency level for all riding skills. The exact time needed for the course may vary due to class size and student ability.

Student/Instructor Ratio

The Consent Decrees required a student-instructor ratio of 8:1 and encouraged a 4:1 ratio. ESHF staff believes these ratios are adequate for the course described above.

Appendix B
Training Availability Form

ATV Training

ATVs are complex motor vehicles requiring skill to drive, and new ATV drivers[1] have the highest risk of injury. ATVs don't handle as you might expect - they don't behave like a dirt bike, motorcycle, or car.

The best way to become familiar with your ATV and learn about its special handling is to take an ATV training class.

FREE ATV training is available for you and your household when you purchase an ATV.

You wouldn't drive a car without having someone show you how to handle it. Come to a training class and learn how to drive your ATV!

I have read the information above and have been given a certificate that is good for one free training course for me and each member of my immediate household whom the ATV is age-appropriate.

Purchaser Signature Date (mm/dd/yyyy)

Print name

[1] Those with less than one year of experience compared to those with multiple years of experience.

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UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
WASHINGTON, DC 20207

Memorandum

Date: April 11, 2006

TO : Elizabeth Leland, Project Manager
Directorate for Economic Analysis

THROUGH: Russell Roegner, Associate Executive Director RR
Directorate for Epidemiology

FROM : Robin L. Ingle, Health Statistician RU
Hazard Analysis Division

SUBJECT : Explanation of Trained ATV Rider Risk Statement[1]

In 2001, U.S. Consumer Product Safety Commission staff undertook a study of all-terrain vehicle injuries at the same time that members of the ATV industry undertook a study of ATV exposure (Levenson 2003). Based on the data gathered during these studies, the Directorate for Epidemiology has determined that the risk of injury for an ATV rider who has been trained by a dealer, salesman or organized program is less than half that of a rider who has not undergone similar training, when measured by riding hours. This memo provides an explanation of the origin and meaning of this statement (Levenson 2005).

The statement is a comparison of two risk measures. Risk as expressed here is a ratio of the estimated number of injuries in a year to the estimated number of riding hours in a year.

The period for the injury study was July 25 to December 31, 2001. Every ATV case gathered through the National Electronic Injury Surveillance System (NEISS) during this time was assigned for follow-up investigation. These cases were then used to calculate national estimates of the numbers of ATV-related injuries of trained and untrained riders in the U.S. in 2001. The resulting estimates are the numerators of the ratios compared in the statement.

The exposure study conducted by industry provided the data necessary to calculate the estimates of the numbers of hours ridden in 2001 by trained and untrained riders, which were used as the denominators for the two ratios in the comparison. This study used a market panel approach, utilizing a questionnaire that asked riders and owners about their ATV riding experience and usage habits. The study was overseen by Heiden Associates, Inc.

The statement means that during 2001, there were fewer than half as many injured trained ATV riders per riding hour than injured untrained ATV riders per riding hour.

[1] This analysis was prepared by CPSC staff, has not been reviewed or approved by, and may not necessarily reflect the views of the Commission.

It is important to keep in mind that all estimates have associated variability. The variability of the overall ATV injury estimate is small (Ingle 2005 and Levenson 2003). However, the variability of both the numerator and the denominator of the risk estimate for the trained riders may be influenced by the small fraction of riders receiving training, which could lead to risk estimates with high variability (Levenson 2005).

Another consideration in the interpretation of any comparison of two populations is whether the two groups differ fundamentally in some aspect that is relevant to the comparison. For instance, in the comparison discussed here, trained riders may be more safety conscious to start with, even before they get training. There may be some other element of their personal makeup that causes them both to get training and to avoid being injured on an ATV. If such a difference exists, then the comparison should be made with caution (Levenson 2005).

References:

Ingle, R.L. September 2005. *2004 annual report of ATV deaths and injuries*. Bethesda, MD: U.S. Consumer Product Safety Commission.

Levenson, M.S. January 2003. *All-terrain vehicle 2001 injury and exposure studies*. Bethesda, MD: U.S. Consumer Product Safety Commission.

Levenson, M.S. February 27, 2005. Personal communication. Bethesda, MD: U.S. Consumer Product Safety Commission.

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UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
WASHINGTON, DC 20207

Memorandum

May 22, 2006

TO : Elizabeth Leland, Project Manager ATV

THROUGH: John G. Mullan, Director, Office of Compliance JGM

FROM : Tanya Topka, Compliance Officer, Recalls and Compliance Division TLT

SUBJECT : Three-Wheeled All-Terrain Vehicles

I. Introduction

On June 8, 2005, Chairman Stratton issued a memo requesting that the staff review all existing safety standards regarding All-Terrain Vehicles ("ATVs") and make recommendations on the advisability of rulemaking. The Commission voted to issue an ANPR on October 5, 2005, based on staff's recommendation to issue a broad ANPR.

This memorandum responds to your request for information on three-wheeled all-terrain vehicles currently being sold in the United States. All of the ATV manufacturers and distributors who have submitted voluntary Letters of Undertaking to the commission have agreed not to offer three-wheel ATVs for sale in the United States.[1] As explained below, however, other manufacturers are offering three-wheeled ATVs for sale within the United States.

Currently, there are two types of three-wheelers being advertised: one which is advertised as a three-wheeled ATV and one advertised as a three-wheeled all-terrain golf scooter.

A. Three-Wheeled ATV

This model resembles a cross between a "traditional" ATV and a dirt bike; but it has all the characteristics of an ATV as defined by the ANSI voluntary standard[2], except that it has three wheels instead of four. It has low pressure tires, a seat designed to be straddled, intended for one passenger, uses handlebars for steering, and is intended and designed for off-road use only. Compliance staff has identified three importers who have sold this product in the past six months. All three importers use the Internet as the retail location for this product. This product is being marketed as a three-wheeled ATV. The price ranges from

[1] American Honda Motor Co, Inc., Yamaha Motor Corp., Polaris Industries, American Suzuki Motor Corp., Kawasaki Motors Corp., Arctic Cat Inc., Bombardier Recreational Products, Inc., Bush Hog LLC, Tomberlin Outdoor (formerly Alphasports), and Deere & Company (commonly known as John Deere).
[2] Definition from page 2 of the ANSI/SVIA-1-2001 Standard entitled, "Four-Wheel All-Terrain Vehicle Equipment, Configuration, and Performance Requirements".

$350.00 to $380.00, plus shipping. All three importers are selling this product with a 49cc engine displacement.

B. All-Terrain Three-Wheeled Golf Scooter

There are two styles of this model being sold on the Internet and at golf supply stores. One style resembles a "traditional" ATV but has two low pressure tires up front and one low pressure tire in back. Except for having three wheels, this model meets the definition of an ATV in that it has low pressure tires, a seat designed to be straddled, intended for one passenger, uses handlebars for steering, and is intended and designed for off-road use only. The vehicle is being marketed as an all-terrain golf scooter. The price ranges from $200.00 to $300.00. This vehicle was marketed as having a 49cc engine displacement. Compliance staff has identified one importer of this product.

The second style of the vehicle, currently being marketed as an all-terrain three-wheeled vehicle, resembles a scooter with three wheels because the operator is seated slightly higher. Except for having three wheels, this vehicle meets the definition of an ATV in that it has low pressure tires, a seat designed to be straddled, intended for one passenger, uses handlebars for steering, and is intended and designed for off-road use only. Unlike the other models discussed that have gasoline powered engines, this vehicle is electric powered. The price ranges from $800.00 to $2,500 for this model. Compliance staff has identified three importers of this product.

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UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
OFFICE OF INFORMATION AND PUBLIC AFFAIRS
BETHESDA, MD 20814

Memorandum

May 24, 2006

TO : Elizabeth Leland, Project Manager, ATV Safety Review Team

THROUGH: Julie Vallese, Director, Office of Information and Public Affairs
Scott Wolfson, Deputy Director, Office of Information and Public Affairs SW

FROM : Nancy Sachs, Public Affairs Specialist, Office of Information & Public Affairs

SUBJECT : Promoting ATV Safety – A Media & Information Outreach Plan of Action

In conjunction with the regulatory options proposed in the staff briefing package to the Commission regarding a Notice of Proposed Rulemaking (NPR) on all-terrain vehicles (ATV), staff also recommends a two-part coordinated media and information initiative.

Part One would consist of a CPSC-sponsored campaign, with elements designed to be released individually or in full. (For example, CPSC's Office of Public Affairs has designed an ATV Web site that can be unveiled upon its approval by the Commission.) Part Two envisions a multi-partner effort. These recommendations, which could be launched either simultaneously or sequentially, are described below.

Part I

In the event the Commission approves an NPR on ATVs, CPSC staff recommends that the agency launch a multi-faceted media and public information campaign to educate the public about recent developments in ATV safety. The following elements should be considered in the implementation of an effective communications plan:

- News Event: Host a national press conference detailing the major components of the NPR; announce the development of a new Web site; emphasize CPSC's lifesaving safety tips for all riders; discuss exposure findings; use statistics from CPSC's *2005 Annual Report of ATV Deaths and Injuries*; and emphasize the need for greater rider participation in training classes.
- A Web site: Create a one-stop-shop on the Internet with the most up-to-date information about ATV-related deaths and injuries; ATV training opportunities; safety tips; a state compendium of laws, safety information, and agencies that oversee local laws and local riding trails; ATV recalls; a link for reporting ATV-related injuries and deaths to CPSC; and more.

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- Media Outreach: Distribute public service announcements and participate in satellite media tours to inform the public about and draw traffic to the new Web site.
- Partnerships and Grassroots Outreach: Use CPSC's Neighborhood Safety Network to reach out to partners interested in promoting ATV safety. In addition, staff recommends that the agency explore the possibility of field staff working with National 4-H chapters to discuss ATV safety with participants of local training/fitting classes.
- Other Ideas: Write letters to the editor, and produce ATV safety materials that can be ordered from CPSC's publication distribution center and/or downloaded from the Internet.

Part II

As part of the agency's long-term commitment to drive down ATV-related deaths and injuries, an ATV Safety Information and Education (I & E) Working Group is also proposed to accompany any NPR on ATVs. The I & E Working Group's purpose would be to coordinate multi-partner voluntary safety education efforts for ATV riders and purchasers.

The I & E Working Group should include representatives from the public and private sectors. Its role would be to consider the most effective and up-to-date strategies to influence safety behaviors regarding ATV use and, where appropriate, to encourage a coordinated effort to promote these strategies. The Working Group's actions would not be binding on individual members, nor would it replace independent education or advertising efforts of any company or organization. The rationale for this proposal is based on the following:

- If the Commission were to approve a final rule, the way in which ATVs are labeled and sold for youngsters under 16 years old could change. The 90 cc engine would no longer be the benchmark for differentiating youth from adult ATV models. Instead, labels of Junior (6+), Preteen (9+), and Teen (12+), with corresponding top unrestricted speeds of 10 or less, 15, and 30 miles per hour, could be implemented. The Working Group could help promote a coordinated strategy on ATV safety to better familiarize parents and dealers with these new youth categories, as well as important ATV rider safety messages.
- The Working Group could help make the most effective use of limited resources for promoting ATV safety messages. No mechanism currently exists where organizations sponsoring ATV safety messages and campaigns regularly discuss, review, or coordinate their efforts. An organized approach to ATV safety education and information – with stakeholders pooling or coordinating resources – could eliminate duplicative efforts and more efficiently reach and influence ATV riders.

- The Working Group could monitor and suggest updates for safety messages, distribution methods, and targeted campaigns. With technology constantly changing how consumers receive information, the Working Group could promote strategies for most effectively shaping and delivering ATV safety messages.

This proposed I & E Working Group could be structured like other long-term voluntary information and education efforts in public health and safety. For example, similar models are used to discuss and coordinate public education efforts in emergency preparedness, child health, fire prevention, and carbon monoxide safety. These umbrella groups bring together important players in each field so that all members can make the most effective and efficient use of limited resources.

To promote safe riding behaviors on ATVs, consumers need to be targeted with appropriate, consistent, and frequent ATV safety messages through multi-media channels, training, and other person-to-person interventions at the local level. Safety messages could include the following:

- Always get training before riding an ATV.
- Never allow children under 16 years old to ride an adult ATV.
- Always put on safety gear before riding an ATV.
- Never ride a 1-Up ATV with a passenger.
- Never ride an ATV on paved roads.
- Never allow children to ride an ATV in the dark.
- Never ride an ATV while impaired by alcohol or drugs.

To initiate the development of the I & E Working Group, staff recommends that the Commission host a public meeting to bring together public and private sector stakeholders.

Coordinating safety messages and campaigns could have a powerful influence on the safety behavior of those who purchase and ride ATVs. Harmonizing these I & E efforts over the long-term could enhance the prospects of reducing the deaths and injuries associated with ATVs.