



February 3, 2023

Mr. Daniel J. Mustico  
Senior Vice President, Government & Market Affairs  
Outdoor Power Equipment Institute, Inc.  
1605 King Street, 3<sup>rd</sup> Floor  
Alexandria, VA 22314

Dear Mr. Mustico:

As previously discussed in our canvass ballot response of December 13, 2022, CPSC's staff has reviewed the proposed adoption of OPEI/ISO 5395-202X (parts 1, 2, and 3) voluntary safety standard for powered lawn mowers (which will supersede ANSI/OPEI B71.1-2017), and we are providing you with our detailed comments and concerns. The following are CPSC staff's<sup>1</sup> comments listed according to section number in the proposed new voluntary standard:

OPEI/ISO 5395 (part 2), *Pedestrian-controlled lawnmowers*:

**Section 7.1.3 Other Information**

This section, as proposed, has a list of requirements for the minimum information that must be included in the lawn mower's instruction handbook. However, the proposed new language has nothing in the list pertaining to child safety. CPSC staff recommends that the proposed new standard use the same guidance regarding child safety used in the current ANSI/OPEI B71.1 standard, Figure 6 and Annex B, or something more protective. The proposed standard should not have a reduction in safety messaging compared to the current standard.

OPEI/ISO 5395 (part 3), *Ride-on lawnmowers with seated operator*:

**Section 4.7 Roll Over Protective Structure (ROPS)**

The existing language of the ISO 5395 standard is, "The use of a slope indicator is under study." OPEI proposes removing this language. Since the ISO body decided to include this language in the current standard, is there a potential benefit to the machine operator? CPSC staff asks OPEI to establish a task group to review (and, if necessary, expand) the available evidence on slope indicators and user perceptions.

**Section 4.8 Seat Belts**

As discussed previously between OPEI and CPSC staff, proper use of a ROPS requires using a seatbelt for maximum operator protection, and manufacturers warn consumers about this. However, every year, injuries and deaths still occur from roll-over incidents that involve operators who use an upright ROPS but do not use the provided seat belt. CPSC staff proposes that, similar to cars or

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<sup>1</sup> This is a staff document and does not necessarily reflect the views of the Commission.



recreational off-highway vehicles (ROVs), the seat belt could be integrated with a signal (as with cars) or interlock (as with ROVs<sup>2</sup>), to increase the likelihood that the operator uses the seat belt when the ROPS is upright. This could mitigate the safety hazard.

### **Section 5.1.1 Reverse Operation**

This section describes the deactivation requirements when a manufacturer provides an override capability for the safety protection that limits reverse drive with a powered blade. Most manufacturers seem to apply the existing wording, such that the override has a mode indicated by key position, and the operator can alternate freely from mowing forward, to mowing in reverse repeatedly, until the key is manually switched out of override mode. However, the way it's written seems to imply a different requirement, that the override shall deactivate automatically each time the mower moves forward, and the operator has to activate the override every time he/she wants to mow in reverse. CPSC staff has found through market research that only one manufacturer applies the requirement this way, which is safer. The wording of this section ought to be clarified to avoid different interpretations, and require all manufacturers to incorporate the safer design, which requires that the override deactivate automatically each time the mower moves forward. CPSC will provide a forthcoming report on run-over/back-over hazards that provides some insight on this issue.

In addition, staff urges OPEI to consider another recommendation in the report about locating the override switch in a location behind the driver, forcing the driver to look backwards before mowing in reverse. Even though manufacturers provide consumers with warnings to limit reverse mowing and always to look backwards before mowing in reverse, CPSC staff has found several incidents in which a parent or relative was not aware of a child's presence, forgot to look backwards, and backed over the child, causing severe injury, amputation or death.

### **Section 7.1.3 Other Information**

This section, as proposed, has a list of requirements for the minimum information that must be included in the lawn mower's instruction handbook. However, the proposed new language has nothing in the list pertaining to child safety or use of ROPS; and there is very little pertaining to operating on slopes or mowing in reverse. CPSC staff recommends that the proposed new standard use the same or improved safety guidance regarding child safety, mowing in reverse, avoiding steep slopes, and ROPS safety used in the current ANSI/OPEI B71.1 standard, Section 22, including references to Figure 6 and Annex B. The proposed standard should not have a reduction in safety messaging compared to the current standard.

### **Section 7.2.2 Warning Requirements**

The existing ISO 5395 standard includes a warning requirement that would inform the consumer which slope angles introduce a risk of instability, with the angle determined individually for each

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<sup>2</sup> ANSI/ROHVA 1-2016, *American National Standard for Recreational Off-Highway Vehicles*, Section 12.2.



machine by the manufacturer. OPEI proposes removing the language that would warn the consumer of the specific angle of risk for each machine. However, U.S. manufacturers commonly include warnings in operator manuals about mowing on slopes steeper than a certain angle, such as 15 degrees, as appropriate for each machine. Because this wording is part of the current ISO standard and promotes safety, CPSC staff recommends that the wording not be removed. Similar or improved safety wording should be included in the proposed standard to, at a minimum, require both existing and new manufacturers to continue to provide specific slope stability warnings, including the manufacturer's recommended angle, to consumers. With thousands of rollover incidents every year, it is important to remind the operator about this hazard.

#### **Section 4.6 Stability**

The only stability tests proposed for the new standard are static stability tests. There is nothing about dynamic turn stability tests or a sudden traction control test as in the current ANSI/OPEI B71.1 standard, Sections 21.2.3 and 21.2.4. Without dynamic turn stability tests, manufacturers would not be required to assess the dynamic relationship between the operator/machine center of gravity, maximum machine ground speed, minimum turn diameter, and dynamic tire response. Likewise, without a sudden traction control test, manufacturers would not be required to assess the dynamic relationship between the operator/machine center of gravity, maximum machine acceleration, and dynamic tire response. CPSC has found that loss of stability and backwards tip-over incidents are still common hazard patterns that have resulted in many deaths. The proposed new standard should not have a reduction in dynamic stability requirements compared to the current standard. A report is forthcoming, describing CPSC-sponsored research on dynamic stability, for your review.

Thank you for your consideration. CPSC staff asks for a meeting to discuss these recommendations. In the interim, if you have any questions or comments, please feel free to contact me.

Sincerely,

Andrew Newens  
Mechanical Engineer  
Division of Mechanical and Combustion Engineering  
Directorate for Engineering Sciences

cc: Greg Knott, Vice President, Standards and Regulatory Affairs, OPEI  
Jacqueline Campbell, CPSC Voluntary Standards Coordinator